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Globalization and educational reform: what planners need to know

Martin Carnoy

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Fundamentals of educational planning

The booklets in this series are written primarily for two types of clientele: those engaged in educational planning and administration, in developing as well as developed countries; and others, less specialized, such as senior government officials and policy-makers who seek a more general understanding of educational planning and of how it is related to overall national development. They are intended to be of use either for private study or in formal training programmes.

Since this series was launched in 1967 practices and concepts of educational planning have undergone substantial change. Many of the assumptions which underlay earlier attempts to rationalize the process of educational development have been criticised or abandoned. Even if rigid mandatory centralized planning has now clearly proven to be inappropriate, this does not mean that all forms of planning have been dispensed with. On the contrary, the need for collecting data, evaluating the efficiency of existing programmes, undertaking a wide range of studies, exploring the future and fostering broad debate on these bases to guide educational policy and decision-making has become even more acute than before.

The scope of educational planning has been broadened. In addition to the formal system of education, it is now applied to all other important educational efforts in non-formal settings. Attention to the growth and expansion of education systems is being complemented and sometimes even replaced by a growing concern for the quality of the entire educational process and for the control of its results. Finally, planners and administrators have become more and more aware of the importance of implementation strategies and of the role of different regulatory mechanisms in this respect: the choice of financing methods, the examination and certification procedures or various other regulation and incentive structures. The concern of planners is twofold: to reach

a better understanding of the validity of education in its own empirically observed specific dimensions and to help in defining appropriate strategies for change.

The purpose of these booklets includes monitoring the evolution and change in educational policies and their effect upon educational planning requirements; highlighting current issues of educational planning and analyzing them in the context of their historical and societal setting; and disseminating methodologies of planning which can be applied in the context of both the developed and the developing countries.

In order to help the Institute identify the real up-to-date issues in educational planning and policy-making in different parts of the world, an Editorial Board has been appointed, composed of two general editors and associate editors from different regions, all professionals of high repute in their own field. At the first meeting of this new Editorial Board in January 1990, its members identified key topics to be covered in the coming issues under the following headings:

1. Education and development.
2. Equity considerations.
3. Quality of education.
4. Structure, administration and management of education.
5. Curriculum.
6. Cost and financing of education.
7. Planning techniques and approaches.
8. Information systems, monitoring and evaluation.

Each heading is covered by one or two associate editors.

The series has been carefully planned but no attempt has been made to avoid differences or even contradictions in the views expressed by the authors. The Institute itself does not wish to impose any official doctrine. Thus, while the views are the responsibility of the authors and may not always be shared by UNESCO or the IIEP, they warrant attention in the international forum of ideas. Indeed, one of the purposes of this series is to reflect a diversity of experience and opinions by

giving different authors from a wide range of backgrounds and disciplines the opportunity of expressing their views on changing theories and practices in educational planning.

What exactly is the phenomenon so commonly referred to as globalization? How does it manifest itself? What spheres of human activity does it affect, and how does it affect them? What implications does this phenomenon have for education systems and for educational planning?

This booklet, written by Martin Carnoy, Professor of Education and Economics at Stanford University, aims at answering the questions that are so often raised regarding this phenomenon. He examines what globalization is and what this implies for the context in which education sector work is carried out. He then proceeds to analyze how, in this changed environment, globalization comes to affect different aspects of the educational process.

The author starts by examining how globalization affects the labour market, the work organization and the skills required. He then looks at the increased demands made on education systems, whilst fewer resources are likely to be available from public sources for this sector. He then goes on to examine how globalization affects educational restructuring through decentralization, privatization and the proliferation of instruments for the measuring of education quality - a result of the need to ensure transparency in highly competitive labour markets.

The booklet also looks at how the evolution of information technology can present new opportunities for educational processes and how the reconceptualization of space and time is having diverse effects upon national and regional cultural identities.

The Institute is very grateful to Professor Martin Carnoy for having accepted to write such a thought-provoking booklet.

Jacques Hallak
Assistant Director-General, UNESCO
Director, IIEP

Composition of the Editorial Board

Preface

The potential effects of globalization are many and far-reaching, due to this phenomenon's scale and nature. It has major implications for regional and national economies, which, in turn, affect economic growth potential, resources available, work requirements and the role of the state. It has therefore major consequences for the development of education systems, which have not been fully assessed. Because of this fact, globalization has come, in many cases, to represent a 'straw man' for education policy-makers. A wide variety of forces and factors are now attributed to globalization and its after-effects. While it is true that many developments are due to this phenomenon – which are not yet fully grasped – policy-makers need to have conceptual tools to discern what globalization actually is, and what real implications this has for them.

Martin Carnoy analyzes how globalization has affected education systems, directly or indirectly; he does so in great depth, reviewing some of the themes that have emerged over recent years. Among them are:

- The changes in labour markets and education systems due to the emerging demand for workforces capable of the production of high value-added consumer goods.

- The ensuing demand for additional resources for education in a policy environment hostile to the expansion of the role of the public sector.

- The consequences of increased decentralization and privatization, which are often considered as the most effective strategy for ensuring quality and flexibility in a globalized economy.

- The multiplication of cross-national measurements of education systems.

- The widespread adoption of information technology to extend educational opportunities to new target groups, and to improve educational quality through computer-supported instruction and access to the Internet. This, by the way, can become a new area of globalization. One may wonder what the consequences are for university programmes in the South of the multiplication of educational and training opportunities which exist on the Internet and which are developed by Universities in a number of industrialized countries.

- The transformation of culture and the resulting 'struggle over the meaning and value of knowledge.'

The analysis that Martin Carnoy makes is a great contribution to the field of educational planning. Through his critical analysis of actual tendencies, he has contributed crucial elements to discussions dealing with the increased privatization and marketization of education financing and management, the wider implications of the testing of education quality, and the real effects of technological change at the school level in developing countries.

How decision-makers should structure their education systems and which strategy they should develop to prepare their country to conform and deal with globalization is an important aspect which clearly depends on each country's economic situation and level of economic development. The message certainly comes across that countries should invest more and more in their human resources and in quality education and training systems at all levels.

This booklet forms the cornerstone of a series of studies that will scrutinize aspects of globalization and its ramifications for educational planning and policy-making.

Françoise Caillods
Co-General Editor

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Introduction

Historic changes are transforming the lives of people in the developed countries and most developing ones. National economies and even national cultures are globalizing. Globalization means more competition, not just with other companies in the same city or the same region. Flower growers in California have to vie with Costa Rican, Ecuadorian, and Chilean imports, flown up the same day from thousands of miles away. Globalization also means that a nation's investment, production, and innovation are not limited by national borders. Everything, including relations among family and friends, is rapidly becoming organized around a much more compressed view of space and time. Companies in Europe, the United States of America, and Japan can produce chips in Singapore, keypunch data in India or the People's Republic of China, outsource clerical work to Ireland or Mexico, and sell worldwide, barely concerned about the long distances or the variety of cultures involved. Even children watching television or listening to radio are re-conceptualizing their 'world', in terms of the meanings that they attach to music, the environment, sports, or race and ethnicity.

A global economy is not a world economy. That has existed since at least the sixteenth century (Braudel, 1979). Rather, a global economy is one whose strategic, core activities, including innovation, finance and corporate management, function on a planetary scale on real time (Carnoy et al., 1993; Castells, 1996).[1] And this globality became possible only recently because of the technological infrastructure provided by telecommunications, information systems, microelectronics machinery, and computer-based transportation. Today, as distinct from even a generation ago, capital, technology, management, information, and core markets are globalized.

1. Real time is, in entertainment parlance, 'live', meaning that information is exchanged or communicated as it is produced.

Globalization together with new information technology and the innovative processes they foment are driving a revolution in the organization of work, the production of goods and services, relations among nations, and even local culture. No community is immune from the effects of this revolution. It is changing the very fundamentals of human relations and social life.

Two of the main bases of globalization are information and innovation, and they, in turn, are highly knowledge intensive. Internationalized and fast-growing information industries produce knowledge goods and services. Today's massive movements of capital depend on information, communication, and *knowledge* in global markets. And because knowledge is highly portable, it lends itself easily to globalization.

If knowledge is fundamental to globalization, globalization should also have a profound impact on the transmission of knowledge. Some have argued that this has not occurred, casting doubt on the capacity of globalization to permeate local culture-influenced knowledge production and transmission (see, for example, McGinn, 1997). It is true that education appears to have changed little in most countries at the classroom level – even in those nations most involved in the global economy and the information age. Beyond occasionally used computers in classrooms, teaching methods and national curricula remain largely intact. Even one of the most important educational reforms associated with globalization, the decentralization of educational administration and finance, seems to have little or no effect on educational delivery in classrooms.

This book makes the opposite case. It argues that globalization is having a profound effect on education at many different levels, and will have even greater effect in the future, as nations, regions, and localities fully comprehend the fundamental role educational institutions have, not only in transmitting skills needed in the global economy, but in reintegrating individuals into new communities built around information and knowledge.

To assess that role, it is crucial to distinguish between the effects on education of globalization and of an *ideology* closely identified

with, and pushing the development of the global economy in a particular direction. This is not easy. For example, educational decentralization may be a manifestation of globalization itself, in that globalization changes the political power of the nation-state. But decentralization can also be the product of an ideology that views central-state bureaucracy as *inherently* an impediment to private-sector growth. To develop effective educational policy in a globalized context, we need to try to distinguish between the effect of the changing power of the nation-state on its ability to manage education effectively, from the exigencies of an anti-state ideological package that includes, but is not limited to, decentralization. Limitations in central-state power do require changes in educational management, but ideologically based policy responses can easily make the education system less effective.

The analysis presented here goes far beyond globalization's impact on classrooms. The way knowledge is delivered in the classroom is an important aspect of knowledge production, and the classroom does seem largely untouched by globalization. But the classroom is only *one part* of the knowledge production process, and even it, the author will argue, is in the process of being subtly transformed by the forces of globalization. In assessing globalization's true relationship to educational change, we need to know how globalization and its ideological packaging affect the overall delivery of schooling.

Using this broader interpretation, this book argues that globalization *is* having a major impact on education in five major ways:

- Globalization is having a real impact on the organization of work and on the work people do, worldwide. The most rapid growth in demand is for products with a high level of skill content. Work is becoming organized around the notion of flexibility. Increasingly, workers change the kind of jobs they do over their work lives, and their jobs tend, more and more, to be multitasked. This translates into pressure to increase the average level of education in the labour force and to provide more opportunities for adults to return to school to obtain new skills. The pay-off to higher levels of education is rising worldwide as a result of the shifts of economic production to knowledge-intensive products and

processes, as well as because governments may implement policies that increase income inequality. Rising relative incomes for higher-educated labour increases the demand for university education, pushing governments to expand their higher education, and, correspondingly, to increase the number of secondary-school graduates ready to attend post-secondary. In countries that were previously resistant to providing equal access to education for young women, the need for more highly educated low-cost labour tends to expand women's educational opportunities.

- Developing-country governments are therefore under pressure to increase spending on education to produce a more educated labour force. A well-organized education system and a more educated labour force can act to attract globalized finance capital, which plays an increasingly important role in the global economy. But global finance capital also has short-term economic interests that push for smaller public sectors. It has a *private-sector bias.* This *ideological* package pushed by global finance capital pressures governments to reduce the growth of *public* spending on education and to find other sources of funding for the expected expansion of their education systems. This broader agenda of limiting *public* spending on education may prevent governments from choosing the most effective ways of expanding and improving education in the new global economy.

- The *quality* of national education systems is increasingly being compared internationally. This has placed increased emphasis on mathematics and science curricula, English as a foreign language and communication skills. Testing and standards are part of a broader effort to increase accountability by *measuring* knowledge production and using such measures to assess education workers (teachers) and managers. Yet, the way testing is used to 'improve quality' is heavily influenced by the *political* context and purposes of the evaluation system. Again, to develop effective policies for educational improvement, the ideological-political content of a testing programme has to be clearly separated from its educational management content.

- Gradually, information technology is being introduced into education systems, partly to try to expand the *quantity* of education at lower cost through distance education, and partly to deliver *higher-quality* education (at higher cost) through computer-assisted instruction and the use of the Internet. Although almost all countries are at the very beginning of using such new technology, its future use in education cannot be underestimated, particularly because of its ability to link students in the smallest towns of every country with the rest of the world.

- Globalized information networks mean transformation of world culture. But globalization also means that many groups feel marginalized by the market values of this new culture. Such groups struggle against the globalized economy by asserting cultural values that may themselves be global (traditional fundamentalist religion on one hand, for example, and post-modern environmentalism and feminism, on the other), but are, at the same time, profoundly anti-market. This constitutes a new kind of struggle over the meaning and value of knowledge. It also has implications for the organization of the education system.

I. Whither globalization?

Globalization is a hotly disputed concept. Most of the discussion focuses on whether transnational institutions have replaced national economies and national states as the locus of world development. The argument against the globalization thesis is based on two major assertions (Amin, 1998): the first is that 'transnational' corporations are not transnational but 'multinational' (Carnoy, 1993).[2] Transnational means that they transcend any national space. Multinational means that they have offices in many different countries but retain a very high fraction of their assets in their home-base economy. Multinationals therefore depend heavily on those nations' economic policies for their overall health. For example, the most transnational of major corporations, IBM, with a global innovation network and highly internationalized management, floundered badly when its core American business suffered in the 1990-92 recession. Only a total restructuring at home helped IBM recover. Similarly, Japanese banks, also highly multinationalized and riding high globally in the 1980s, have fallen on hard times since the slowdown of the Japanese economy. This suggests that these global corporations are still *situated nationally*, since their core activities still cannot transcend the economic health of their principal location.

The second argument against globalization is that national economic regulation is still the main form of public economic intervention and control. This is so because a high fraction of a nation's economic activities remains almost entirely domestic and distinctly unglobalized (health, construction, education, retail and wholesale, restaurant, bar, and many other services). If nation-states choose not to exercise their power to regulate and redistribute, it is because they are subjected to domestic pressures generally orchestrated by national capital, not by transnationals.

2. For an early definition of transnationals, see Barnet and Muller (1974).

These assertions, while valid critiques of those who would claim that national economies and national states are no longer important, miss the point. Multinationalization of firms has certainly increased – multinational firms now account for one-third of the world's economic output and two-thirds of world trade, with 32 per cent of world trade composed of *intra*-firm trade, unreported in standard trade statistics (UNCTAD, 1993). But the essence of globalization is not contained strictly in trade and investment figures, nor in the percentage of a national economy that is national, but in *a new way of thinking about economic and social space and time*. Firms, workers, students, and even children watching television or using the Internet at school, are reconceptualizing their 'world', whether that world is defined as a market, a location for production, a place to work, a source of information, a place to vacation, or a source of environmental problems. The reconceptualization of space and time into what Manuel Castells has called the 'space of flows'(Castells, 1996) is partly the result of history (world wars that enlarged nations' geopolitical space, for example) and secular advances in 'ordinary' technology, such as the speed of transportation. Yet, the reconceptualization is also profoundly affected by new information and communication technology that allows real-time interchange of knowledge between the most distant points on our globe. Information networks are also increasingly *individualized*, and this too has a profound effect on the way knowledge and information are transmitted and interpreted, and the way social life is organized. An entrepreneur working at home can access masses of information about markets, products, prices, and contacts with other producers worldwide without relying on intermediaries. Students in schools can interchange e-mail with students in a distant country instantaneously, bringing them together in real time and space. Individual consumers or political organizers can reach out globally at extremely low (and falling) cost to get or supply information pertinent to their activities. This creates enormous possibilities for global interaction and, at the same time, puts a growing premium on the individual's ability to get and interpret information.

Is the power of the nation-state diminished by globalization? Yes and no. Yes, because increasing global economic competition makes the nation-state focus on economic policies that improve global

competitiveness, at the expense of policies that stabilize the current configuration of the domestic economy or possibly social cohesion (Castells, 1997). Yes, because the nation-state is compelled to make the national economy attractive for the mass of capital that moves globally in the 'space of flows', and that may mean a shift of public spending and monetary policy from measures that favour workers and consumers to those benefiting financial interests. Globalization forces nation-states to focus more on acting as economic-growth promoters for their national economies than as protectors of the national identity or a nationalist project. The 'project' of the nation-state tends to become limited largely to enhancing increases in aggregate material gain measured nationally, while much less attention is given to the promotion of 'equal treatment' among various ethnic groups living within national boundaries or among regions. Increasingly, the state shifts power to local and regional governments and is less and less able to equalize the interests of various identities represented in the nation-state. It pushes the problems of ethnic conflict to the local level, and increasingly limits its responsibility to developing the economic environment in which *individuals* can increase their material well-being and form more extensive social networks. Later in this essay, it will be argued that the weakened capacity of the nation-state to handle ethnic conflicts and greater economic inequality comes just at a time when globalization further marginalizes many groups unequipped for knowledge-based economic development. This produces new social movements against the nation-state, and it provides the opportunity for new conceptualizations of the public education system, ones in which schools become centres of new communities built around information and knowledge.

Some analysts go so far as to argue that the globalized nation-state will become 'virtual'. It no longer will focus on amassing production capacity, but rather invests in its people and determines overall economic strategy (Rosencrance, 1996). The virtual nation-state is the site of production and encourages and stimulates investments from at home and abroad that expand production activities. But it realizes that for the national economy to prosper, its production does not have to take place at home; rather, it specializes in research and development, in design, in network, entertainment, and

communication software, and in financial services. The role of the state is to negotiate for its own corporations' investments abroad, and to attract foreign investment domestically. The state is a *negotiating entity*, using its diplomatic/commercial skills to enhance pay-offs to the nation's resources.

But no, the power of the nation-state is not diminished by globalization because ultimately nation-states still influence the territorial and temporal space in which capital has to invest and where most people acquire their capacity to operate globally.[3] Peter Evans' argument, and one that the author has also made, is that to maximize profits and protect their returns, especially from intellectual capital, globalized firms and globalized finance capital *need efficient state apparatuses with well-developed civil societies that provide growing markets, stable political conditions, and steady public investment in human capital* (Evans, 1997; Carnoy, 1993). Research in the 1980s and early 1990s showed that well-organized interventionist state bureaucracies in Asia's newly-industrialized countries (NICs) were an essential element in their rapid economic growth (Amsden, 1989; Evans, 1995; World Bank, 1993). Although the interventionist state's role has been irrevocably changed by the current crisis in Asia, international and local investment capital still require coherent state regulatory and other policies to restore confidence. And beyond the

3. A major problem in jumping on the end-of-the-nation-state bandwagon is to separate objective reality (for example, increased global financial flows, increased global trade within and between multinational companies (MNCs), declining public employment) from an ideological position pushed by these same financial interests. MNCs, a major global player such as the USA, and international organizations seek to increase their power on the basis of a global economic order. According to Peter Evans, "The effect of a global ideological consensus (sometimes aptly labelled the 'Washington' consensus) on individual states goes well beyond the constraints imposed by any structural logic of the international economy .... The economic logic of globalization does not in itself dictate eclipse [of the state]. While globalization does make it harder for states to exercise economic initiative, it also increases both the potential returns from effective state action and the costs of incompetence. Only when viewed through the particular prism of our current global ideological order does globalization logically entail movement towards statelessness. This global ideological order grows, in turn, as much out of the prejudices and ideologies of dominant global actors as out of any logic of interests"(Evans, 1997, pp. 72-74).

view that state bureaucracies are a necessary element in regulating and protecting firm assets, it is likely that societies with strong national identities and group cohesiveness provide the kind of stability where financial risk can be accurately assessed, where productivity can be raised with new team-based production innovations, and where educational institutions work reasonably well.

The social costs of weak states may be much higher than supposed by those most committed to getting the state 'off the people's back'. Some analysts have called this underlying context for social and economic interaction 'social capital' (Coleman, 1988). Others have focused on 'trust' (Fukuyama, 1995). Even the World Bank, supposedly a global financial institution, has 'rediscovered' the nation-state as important to social capital (World Bank, 1997). A well-organized, efficient state apparatus regulating the 'rules of the game' and implementing coherent economic and social policies attracts capital and high-skilled labour. Inefficient states drive them away.

An educational strategy in the global information age still needs to be at least partly national, especially in countries marked by diversity and economic inequality among regions. But, as will be argued below, the most productive strategy for the nation-state in the global economy may be to become more regulatory, informational, and 'equalizing' rather than to administer the system from the top.

II. The impact globalization on work

Labour and globalization

Is labour also globalized? With the exception of the upper layers of professional labour generally, and for low-skilled workers in certain regions of the world, it does not seem to be. In 1993, despite global panic about 'floods' immigrants, only about 1.5 per cent (80 million workers) of the global labour force worked outside their country, and half of them – surprisingly – were concentrated in sub-Saharan Africa and the Middle East (Campbell, 1994). Free movement of citizens in the European Union resulted in only 2 per cent of its nationals working in another Union country in 1993. That proportion has been unchanged since the mid-1980s.[4] Notwithstanding the public perception in the USA and Europe concerning the invasion of cheap labour from the South and East, immigrants as a proportion of the total population only surpassed 5 per cent in Germany (about 7 per cent), and in France, the proportion was lower in 1992 than in 1986. In the United Kingdom, it was only slightly over the 1986 level (Carnoy and Castells, 1997, Appendix I). The USA was always an immigrant society, and current trends are consistent with an earlier period of open immigration (Portes and Rambaut, 1996). Yet, the main concern with immigration in the USA and Europe is less in the numbers than in the ethnic composition of immigrants. Immigrants today are less European, and the higher birth rate of non-European immigrant populations once they are in the host country makes societies increasingly multi-cultural and multi-ethnic.

Although the 'colouring' of predominantly white societies does not necessarily imply a global labour market, increased multi-culturalization of Eurocentric societies is one important manifestation of globalization. In the USA, for example, business is behind much of the political push for open immigration for both high- and low-skill

4. *Newsweek*, special issue on 'Jobs'. 4 June, 1993.

workers. Not surprisingly, information technology companies are among the most active lobbyists for increased immigration. They see a large supply of highly skilled engineers and computer programmers in India, China, and Europe who can fill their needs at lower wages than demanded by American high-end workers. American (and Japanese) universities also now depend heavily on foreign science and engineering graduate students to do research on government-funded projects (Carnoy, 1998). Foreign countries, too, have an interest in sending their students (and lower-skilled workers) to the USA, Europe, and Japan, so that they can learn and bring back the latest technological skills, and so that emigrant workers can earn higher wages and remit money back home. But some economies, such as those of South Africa, West Africa, and the Caribbean island nations, see their most highly skilled university graduates heading off to work in Europe and the USA. From the standpoint of those countries, permanently losing highly skilled labourers to the USA and Europe (brain drain), the sense is that remittances sent back home are insufficient compensation for their potential contribution.

Even if labour does not circulate globally to the same degree as do money and goods, the new dynamics of trade and investment, led by multinational corporations and transnational networks of firms, have *increased the interdependence of labour markets* (Bailey et al., 1993). Some economists claim that the impact of trade on employment and wages in the developed economies is very small (Krugman and Lawrence, 1994),[5] but most believe that foreign trade has had a significant negative impact on the wages of less-educated workers (Bluestone, 1995). One estimate shows that between 1960 and 1990, skilled workers in the North benefited from the process of globalization, both in employment and wages, but that unskilled workers lost out in the competition from developing countries. Demand for unskilled labour in the North fell by 20 per cent, and wages declined (Wood, 1994). Others have shown that the potential of mobility for firms in the global economy provides management with extra bargaining power in obtaining concessions from the labour force in the North (Shaiken, 1993). Whereas indirect effects of globalization are not always visible, they do affect bargaining relations. They tend to reduce labour's share

5. For a response, see Cohen, 1994.

of economic surplus, but simultaneously preserve jobs that cannot be easily exported, such as highly skilled jobs or those located in non-tradable services.

So even without a unified global labour market or a global labour force, there is global labour interdependence in the global economy. This interdependence is expressed in the increased integration of work worldwide. Multinational companies view the world as their labour market and organize themselves around work and innovation structures on a world scale. For example, a company such as Oracle, a major software developer with headquarters in the San Francisco Bay area, has branches in Europe and India. These branches are organized to perform similar yet different functions, including recruiting the most skilled software developers to San Francisco. Thus, such interdependence is characterized by hierarchical segmentation of labour, still between countries but increasingly a segmentation that cuts across borders to take on global dimensions.

This segmentation has important meaning for national educational planners, especially in terms of university education. As mentioned, South Africa invests heavily in higher education, only to find that many of its best students go abroad to Europe once trained. On the other hand, increasing numbers of highly skilled Africans from other countries attempt to come to South Africa to be further trained and to work. The 'brain drain', always an issue in developing countries, may be accentuated in a global economy. If a country such as South Africa hopes to become a growth pole in that economy, planners need to come up with a strategy that both uses and shapes their nation's position in global segmentation.[6]

6. At the end of the 1970s, Singapore began a systematic effort to change itself from an electronic assembly economy to an R&D economy. It did so with a combination of economic measures (raising minimum wages drastically) and educational measures (building R&D parks, investing in a biotech research centre at the University of Singapore, rapidly expanding university education in science and engineering).

Globalized markets and the globalization of skills

In practice, segmentation across borders means that globalized finance and investment creates a worldwide demand for certain kinds of skills, namely English language, mathematics reasoning, scientific logic, programming, associated with higher levels of education. Globalized science-based technology firms are increasingly using scientists and engineers trained at least partially in Newly Industrializing Country (NIC) universities to staff their innovation activities both in the developed countries and in the NICs themselves. At the same time, nation-states, particularly in the Asian NICs, are increasing their scientific and technological higher education rapidly in the hope of capturing innovation rents as innovation continues to globalize.

The effect on global skill formation does not end there. Developed-country universities' science-technology training and research, almost entirely under the aegis of national state-sponsored R&D programmes, are becoming increasingly internationalized, drawing heavily on first-degree programmes in the NICs for graduate students (Carnoy, 1998). The highly skilled scientists and engineers coming out of these graduate programmes are available for globalized innovation, including innovation in enterprises owned and managed by NIC entrepreneurs and states.

States' education investment policies are therefore *both* highly nationalistic and, whether intended or not, also interstitially co-operative, and often part and parcel of aggressively nationalistic innovation policies. Education in general and higher education in particular are historically tied to inherently national objectives, such as promoting national culture or building national elites. But 'national' education investment policies are also highly internationalized. Even in those countries consciously trying to create absolute advantage and national systems of innovation, science professionals are regularly trained in the developed countries and may work there at the research poles of globalized firms. Thus, the more recent efforts by states to focus higher education on science and engineering – although intended to capture innovation rents – has resulted indirectly and perhaps inadvertently in a new kind of interstitial co-operation in global

innovation. Such co-operation provides global enterprises and developed-country states with new sources of scientific human capital for basic and applied research. Yet these same education policies can, under the 'right' circumstances, also support their intended goal of helping countries to create absolute advantage.

The increased availability of highly skilled NIC scientists and engineers trained in innovation centres increases the incentive for NIC states to engage in aggressive nationalistic innovation strategies. Some of these innovation strategies build on innovation endogenous to global enterprises; hence, they are aggressively nationalistic only in that they use locally developed science and engineering manpower to gain a share of innovation rents. But other countries pursue truly national innovation strategies. These are attempts to develop autonomous poles of innovation, competing with already established global innovators.

Globalized demand for certain types of higher-level skills puts upward pressure on the pay-offs to the higher educated around the world, particularly in those economies more closely tied into the globalization process. In the past 50 years, most countries have undergone rapid expansion of their primary and secondary-education systems. This is not universally true. But thanks to a generalized ideology that basic education should be available to children as a right, even financial constraints in many debt-ridden countries, such as those in Latin America, did not prevent them from increasing access to basic and even secondary education (Castro and Carnoy, 1997).

University education has also expanded, but given the bias of global demand for the higher educated, the tendency is to push up rates of return to investment in higher education relative to the pay-offs to investing in primary and secondary schooling. Rates of return to higher levels of education are also pushed up by structural adjustment policies. These tend to favour those with higher skill levels hooked into the export sector and the multinational companies. Estimated rates of return in countries such as Singapore, Malaysia, Hong Kong (Chung, 1990), the Republic of Korea (Ryoo et al., 1993), and Argentina (Razquin, 1999), as well as in a number of the OECD countries (OECD, 1998), show that rates of return to university education are

often as high or higher than to either secondary or primary. Furthermore, some of these same studies were able to measure rates of return for several different years in the 1970s, 1980s, and 1990s. They suggest that rates of return to university have risen *relative* to primary and secondary rates. Rising rates of return to higher education relative to lower levels of schooling also characterize many countries where measured rates to investment in university remain lower than to investment in primary and secondary.

Rates of return to higher levels of schooling go up not necessarily because the real incomes of university graduates are rising in *absolute* terms. Real incomes of university graduates could stay constant or even fall, but if the incomes of secondary and primary graduates fall or fall more than those of workers with higher education, the rate of return to higher education rises and pressure on the higher education system increases. Many years ago, Mark Blaug, Richard Layard and Maureen Woodhall studied the paradox of Indian universities. Graduates seemed to suffer high rates of unemployment, yet the demand for university education continued unabated (Blaug et al., 1969). They found that although the rate of unemployment was, indeed, high among university graduates, it was even higher among secondary-school graduates. This helped push secondary-school graduates to go on to university. In the past 25 years in the USA, the real incomes of male college graduates have risen very slowly, but the real incomes of male high-school graduates have fallen sharply, again raising the college income premium and increasing enrolment in higher education.

Globalization may therefore benefit university graduates only in *relative* terms, but the implications for general educational investment strategies are the same as if university graduates' incomes were rising more rapidly than incomes of those young people with less schooling. Globalization definitely puts pressure on the education system to expand.

Yet, there is another side to this coin. Many analysts focus on the fact that globalization is *reducing* demand for unskilled and semi-skilled labour, that the new technology may be reducing demand for

labour as a whole, and that countries have to compete for this shrinking demand by keeping wages low. These analysts claim that this is the reason that real wages are falling (or growing very slowly) in most countries (see, for example, Rifkin, 1994). It will be argued below that this is an incorrect analysis of both the effects of globalization and of the new technology. New information technology displaces many workers, just as all new technologies have done in the past, and this may influence short-term education and training investments. But this aspect of labour markets does not negate the more important issue for educational strategies: globalization and the new technology are knowledge intensive, and the new labour markets are increasingly information intensive, flexible, and *disaggregative*, or individualizing, of labour, separating workers from traditional communities, as will be shown below. These are the key factors that still, and should, influence educational strategies.

Educational strategies should also be influenced by the social implications of higher rates of return (both private and social) to higher education. Rising rates to higher levels of schooling mean that those who receive that education benefit relatively more from their investment in education than those who stop at lower levels of schooling. In most countries, those who get to higher levels of schooling are also those from higher social class background. So not only do those families with higher social class background have more capital to start with, under these circumstances, they get a higher return to their investments. This is a sure formula for increased inequality in already highly unequal societies. In addition, higher socio-economic status (SES) students are those who get access to 'better' schools, in regions that are more likely to spend more per pupil for education, particularly in those schools attended by higher socio-economic class pupils. Competition for such higher-pay-off education also increases as the pay-off to higher education increases, because the stakes get higher. Higher SES parents become increasingly conscious of where their children attend school, what those schools are like, and whether they provide access to higher levels of education. The total result is therefore that schooling becomes more stratified at lower levels rather than less stratified, especially under conditions of scarce public resources. National

economic competition on a global scale gets translated into sub-national competition in social class access to educational resources.

If rates of return to university are pushed up by globalization, intensifying the competition for access to higher education, higher-educated, higher-income parents tend to step up the amount they spend on primary and secondary school to assure their children's university enrolment. This means that if promoting private education at the primary and secondary levels through vouchers is part of the strategy to expand access, parents who can afford it are likely to send their children to selective private schools. Even in the public system, wherever possible, parents with more motivation and resources will seek 'selective' public schools that serve higher social class clientele. These same parents, willing to spend on the 'best' (often private) primary and secondary schools for their children, then end up fighting for high quality, essentially free, public universities. In Africa, elites (largely government civil servants) went farther. They tried to maintain a system where university students are *paid* competitive salaries to attend. Although this system is gradually being dismantled, generous student loan programmes still continue for university students and these loans are rarely paid back.

At the same time, rising rates of return to university place pressure on universities to accommodate more students. But financial constraints on increased public spending for education have pushed countries throughout Latin America and Asia to generate such higher education expansions by allowing for the rapid growth of *private* universities, often financed at least partly by Ministry subsidies to students. These private universities compete for students, but, in fact, the number of students wanting a degree is so great, that competition hardly has to be fierce to attract students. Even so, private universities in Malaysia, South Africa, and other countries 'twin' with European and Australian universities to draw students. Most of these students are not 'good enough' to get into the top public universities, so a private one, high fees and all, is their best hope for a professional career. In Brazil, Chile, Colombia, Malaysia, and many other countries, such commercial, private universities tend to be 'diploma mills', serving students from lower rather than higher-income families. The pay-off

to private university students is generally lower than the return to those who attend the more prestigious public universities.

In addition to raising the pay-off to higher levels of education, globalization appears to have raised the rate of return to women's education. In many countries, rates of return to education for women are higher than for men (Ryoo et al., 1993; Psacharopoulos, 1989). The reasons for the increased participation of women in labour markets are complex, but two main factors have been the spread of feminist ideas and values and the increased demand for low-cost semi-skilled labour in developing countries' electronics manufacturing and other assembly industries. The worldwide movement for women's rights has had the effect of legitimizing equal education for women, women's control over their fertility rates, women's increased participation in wage labour markets, and women's right to vote (Castells, 1997; Ramirez et al., 1997). The increased demand for low-cost labour and greater sense by women that they have the same rights as men has brought enormous numbers of married women into wage employment worldwide. This, in turn, has created increased demand for education by women at higher and higher education levels. So globalization is accentuating an already growing trend by women to take as much or more education than men.

This does not mean that women receive wages equal to men's. That is hardly the case. Nor does it mean that women are taking higher education in fields that are most lucrative, such as engineering, business, or computer science. That is also far from true. Women are still vastly under-represented in the most lucrative professions even in the most 'feminized' countries, such as Sweden or the USA. But globalization seems gradually to be changing that, for both positive and negative reasons. The positive reasons are that flexible organization in business enterprise requires flexible labour, and women are as, or more, flexible than men, and that information technology and telecommunications are spreading democratic ideas worldwide. The negative reason is that women are paid much less than men almost everywhere in the world, and it is profitable for firms to hire women and pay them lower wages than men. Yet, both sets of reasons gradually seem to be driving both the education and the price of women's labour

up relative to men's. For example, the percentage of women in science and engineering university faculties is increasing worldwide. Although such increased 'professionalization' of women may contribute to the transformation of family life, it does serve to democratize societies and raises greatly the average level of schooling.

Globalization and the organization of work

Globalization and information technology is transforming work. The transformation has been misinterpreted and mystified by writers, who claim that new information technology means a massive and growing shortage of jobs, particularly of good, high-skilled jobs (for example, Rifkin, 1994). This claim is simply wrong. It deflects attention from the real change that is taking place. As post-industrial economies and governments adjust to new realities, there will be plenty of new jobs in the future, and many of them (most, in the developed countries) will be high-paying. Employment growth worldwide during the period of most rapid adoption of new information technology, the 1980s and 1990s, was positive. In the USA, the economy with the most computers per worker, the number of jobs has increased by almost 40 million since the mid-1970s and 14 million since 1992. Employment growth in South-East Asia was even more rapid until the financial crisis of 1998, and promises to continue as these economies recover (Carnoy and Castells, 1997).[7]

There is no relation between the intensity of use of information technology in countries and their rate of unemployment (Carnoy, 1999). For example, Spain has much lower technology use than France and the unemployment rate in Spain is much higher than in France. Similarly, technology use in southern Italy is much lower than in the North, but unemployment rates are high in the South and low in the North. Increased use of information technology certainly causes displacement of workers, but is not the cause of high levels of

7. Neither has there been a net loss of manufacturing jobs worldwide. To the contrary, Brazil, China, India, and Mexico together have added many more manufacturing jobs than lost in the developed countries between 1970 and 1995. Even though manufacturing job growth has slowed down in the NICs, it is not declining (Carnoy, 1999, Chapter 2).

unemployment in the medium and long run (ILO, 1996). Plain and simple, it would be a fatal mistake for any country to base its economic growth on a low-tech future, on the assumption that this will save jobs.

But that said, a job may not mean the same thing in the future as it does today. More intense competition on a worldwide scale makes firms acutely aware of costs and productivity. The 'solution' they have come to is to reorganize work around decentralized management, work differentiation, and customized products, thereby individualizing work tasks and differentiating individual workers in their relationship to supervisors and employers. This has made subcontracting, part-timing, and hiring temporary labour much easier, since a lot of work can be narrowed down to specific tasks, even as other, 'core', work is conducted in teams and is multi-tasked. Workers are gradually being defined socially less by a particular long-term job they hold than by the knowledge they have acquired by studying and working. This knowledge 'portfolio' allows them to move across firms and even across types of work, as jobs get redefined.

The effect of individualization and differentiation is to separate more and more workers from the 'permanent', full-time jobs in stable businesses that characterized post-World War II development in Europe, Japan, the USA, and other industrialized countries. Just as an earlier factory revolution drove a wedge between workers and products they made, the new transformation is dissolving the identity that workers developed with industrial organizations such as the corporation and the trade union. Workers are being individualized, separated from their 'traditional' identities built over more than a century, and from the social networks that enabled them to find economic security. The 'job' and everything organized around the job – the group of work friends in the company, the after-work hangouts, the trade union, even the car pool – lose their social function. They are as 'permanently temporary' as the work itself.

Some, mainly highly educated, professional and technical workers, are building new networks. Instead of just talking to colleagues in the company where they work, they build electronic mail and informal

information relations *across* companies and across countries. Network technology such as the Internet helps. Information exchanged in after-work, upscale hangouts attracting professionals from a broad range of firms, serves the same purpose. The main question is what happens to the vast majority of workers who do not have easy access to information about other companies or to workers in other companies, or those highly skilled workers who fall 'out of the loop'. They tend to be left in an individualized limbo, 'disaggregated' from traditional networks but not 'integrated' into new ones. New, private networks, such as agencies which arrange temporary employment, are emerging to fill this void. But, except for some striking exceptions, such as construction unions that traditionally allocate temporary jobs to their members, they are not organized for or by workers. They miss satisfying the need for social integration served by stable jobs, unions, and professional associations.

The educational implications of this new organization of work are far reaching. If a worker is likely to change jobs fairly often, then the better his or her general knowledge base, the more likely that the worker will be able to learn the skills needed in diverse jobs. On the other hand, employers have always preferred workers who learn quickly but also have specific skills. Vocational education has never created jobs; yet, in situations where jobs are available, young people with vocational training tend to have an advantage and earn more (Chung, 1996). Flexible work organization means that higher-quality general education that helps individuals to collect and interpret information and enables them to be resourceful and solve problems, gains in value. Yet, it also means that vocational training has to be broad-based and multi-skill oriented. There is evidence as well that co-operation and communications skills become more highly rewarded in a flexible work situation (Cappelli, 1997).

Globalization and wage inequality

Rising relative rates of return to higher education are not just the result of new technology and the increasing demand for higher-order skills. Because globalization is heavily influenced by the rapid movement of financial assets, financial investors wield considerable

political power over economic policy in both the developed and developing countries. Although groups within the financial sector often disagree about specifics, they seem to have settled on a particular ideology of economic development, an ideology that puts financial considerations first. 'Conservative' economic policies without the presence of strong institutional factors favouring labour-business co-operation, such as in Germany, Japan, Scandinavia, and Austria, tend to put the lower educated at increased disadvantage as protections to labour are reduced and protectionist policies dismantled.

Globalization does not necessarily lead to increased wage inequality between the more and less educated. But the pressure on governments to put their economies' financial houses in order, so as to compete in the global economy and to attract financial investments from the huge pool of capital constantly circling the globe, produces policies that tend to hurt the lower educated more than the higher educated. Whatever the 'real' effect on wage distribution of technological change and changing product demand, the dominant ideological packaging surrounding globalization accentuates the bias against raising wages, and adds a bias against social wages and a bias in favour of financial policies that keep unemployment higher than it otherwise might be.

As a result, governments tend to:

- Turn away from welfare-state policies with their corporatist overtones, and towards the private market. Part of this shift results from voters' perception of the declining power of the state to influence markets in an increasingly global economy (Castells, 1997). But part comes from a major effort by corporations to raise the share of private profits in gross national product (Bowles et al., 1983; Carnoy, Shearer and Rumberger, 1983).

- Implement strong anti-union policies, setting a tone for bargaining that favours employers.

- Lower minimum wages as part of policies to 'increase employment', particularly of youth, even though there is considerable evidence that raising or lowering minimum wages has little effect on youth unemployment (for the USA, see Card

and Krueger, 1995). Combined with severe anti-inflation policies that produce high levels of unemployment, declining real minimum wages put increasing pressure on the pay of lower-skilled workers.

Thus, institutional settings and resulting government policies and firms' behaviour can not only affect income distribution, but also the wages of certain groups of workers. The institutional argument is supported by studies that show earnings inequality rising more in the USA, for example, especially at the low end of the earnings distribution, than in countries such as Canada, France, and Germany. Workers in those countries were exposed to similar changes in the relative demand for low-skilled workers as in the USA, but faced more amenable labour legislation and better employer-labour relations (Freeman and Needels, 1991; Freeman and Katz, 1995). These studies conclude that rising minimum wages and the maintenance of more balanced bargaining power between employers and labour were crucial in keeping low-skilled wages from falling significantly.[8]

8. Other economists claim that 'shadow' income inequality is much higher in France and Germany if unemployment rates are taken into account. In other words, the earnings of low-skilled workers would fall if those employed would 'share' the existing set of jobs with the unemployed.

III. Globalization's impact on educational reform strategies

These changes in the world economy have provoked three kinds of responses in the education and training sectors. Reforms that respond to shifting demand for skills in both the domestic and world labour markets and to new ideas about organizing the production of educational achievement and work skills can be called 'competitiveness-driven reforms'. Reforms that respond to cuts in public-sector budgets and private company incomes, reducing public and private resources available for financing education and training can be called 'finance-driven reforms'. Reforms that attempt to improve education's important political role as a source of social mobility and social equalization can be called 'equity-driven reforms'.

Competitiveness-driven reforms

The underlying philosophy of such reforms is best captured in the 1992 report of the OECD's Education Committee to Ministers of Education:

> The 'human factor' is fundamental to economic activity, competitiveness and prosperity, whether manifest as knowledge and skills or in the less tangible forms of flexibility, openness to innovation, and entrepreneurial culture.... Employment patterns and workplace processes evolve rapidly. Together, these changes exercise a profound impact on the topography of relevant knowledge and skills and hence on the capacity of individuals, young and old, men and women, to participate in economic life (OECD, 1992, p. 32).

Competitiveness-driven reforms aim primarily to improve economic productivity by improving the 'quality' of labour. In practice, this philosophy translates into expanding the average level of

educational attainment among young workers and improving learning 'quality' at each level – where quality is measured mainly by student achievement, but also by education's relevance to a changing world of work.

Competitiveness-driven reforms are *productivity-centred*. This means that their goal is to raise the productivity of labour and of educational institutions, *even if this requires additional spending on education*, including higher teacher salaries and major expansions of educational levels. The reforms can be classified into four categories:

Decentralization

Where municipalities and, in some places, schools, are given greater educational autonomy in decision-making. The purpose of such reforms is to increase the control over curriculum and teaching methods of local communities and the teachers and principals of the schools themselves – this on the assumption that increased flexibility and control allows for a better fit between educational methods and the clientele served, as well as greater accountability for educational results. If the local educational authorities see themselves and are seen as responsible for educational delivery, reformers reason, educational quality will improve (Hannaway and Carnoy, 1993).

An extension of such reforms is *school choice* and the *privatization of educational delivery* (UNESCO, 1993, pp. 59-63). Although the reason why parents would want to have school choice is usually the composition of the local (urban) school student body and the resulting 'undesirable' conditions in the school, choice proponents argue that the threat of parent exit would motivate teachers and principals to improve school quality. Similarly, a major argument for privatization is its positive effect on inter-school competition and school accountability, hence school quality (West, 1997).

Standards

In countries as diverse as the USA, Brazil, and Chile, where formal education is highly decentralized, reforms have simultaneously focused on greater 'centralization' *and* school restructuring (greater

control in the hands of school personnel). The main focus of centralization reforms is the quest for higher learning standards, as defined in the narrow sense of "a learning standard that an educational programme aims to help learners attain ... " (UNESCO, 1993, p. 78). In its *Goals 2000* legislation (1994) and in more recent legislation in states such as Texas and North Carolina, the United States Congress and state legislatures moved towards requiring students in the USA to meet certain minimum standards for high-school graduation and to raising average student achievement. In several American states, in Chile, in several Brazilian states, and a number of other countries with more centralized education systems, such as France, Uruguay, Costa Rica, and many African countries, school-by-school national test results are published or schools are informed of results in relation to other schools whose clientele has similar socio-economic background. The point of providing such standards (established by a central authority) is to give clear signals of academic expectations to schools and to parents in the hope that high standards will raise parent demands and school performance.

Improved management of educational resources

Many of the proposals for improving educational outcomes rely on introducing new, *high-yield* resources that can make an especially large difference in student achievement at relatively low cost, and on better management and allocation of existing resources in schools. The introduction of high-yield resources means, for example, universalizing access to schoolbooks in countries where pupils are without texts (Lockheed, Verspoor, et al., 1991), peer tutoring in higher-income countries where school supplies are widely available (Levin et al., 1986), and a 'Third Channel' utilizing the entire range of communications media available to society to reach the "very large number of youth and adults who never had an opportunity to receive formal education of any kind, or who dropped out of the formal system before learning anything of value to themselves or society" (UNESCO, 1993, p. 64).

The main focus of 'better management' – as reflected in the effective schools' literature (see Lockheed and Levin, 1993) – is to

increase teacher effort and innovation, and simultaneously to supply teachers with effective teaching alternatives (Levin, 1993). The aim is to produce high achievement with approximately the same set of physical assets and pupil populations as lower-achieving schools. As part of the case for increased privatization, proponents of vouchers in the USA and elsewhere have argued that privately managed schools are more effective in producing high achievement with the same or fewer resources because they have greater flexibility in the way they can allocate teacher time (Carnoy, 1997; West, 1997).

Finally, there is an argument that public education in developing countries should focus on expanding and improving basic education because the pay-off – the 'social rate of return' – to resources invested at that level is higher than to resources invested at the secondary and higher levels (World Bank, 1995; Lockheed, Verspoor et al., 1991). This implies that economic productivity and the social good (as measured, for example, by improved children's health and nutrition, and lower fertility rates) increases more from public spending on basic education than on higher levels (Carnoy, 1992). It is socially more 'efficient' to invest scarce public resources at the primary level, shifting them away from subsidizing secondary and particularly university education.

Improved teacher recruitment and training

According to the OECD, "... improving educational quality has become a widespread priority and in this the role of teachers is pivotal ... Successful reform is realized by and through them" (OECD, 1992, p. 79). The OECD focuses mainly on reforms that would improve the recruitment of high-quality teachers into schools and universities, pre-service training to make them highly effective knowledge transmitters, and in-service training to maintain their skills and interest through constant upgrading. The "complex components of the profession's attractiveness" (OECD, 1992, pp. 81-83) include not only teachers' relative salaries, but how teachers are regarded by society as a whole, the relative isolation teachers feel in their work, and the degree to which the educational bureaucracy treats them as professionals.

The ILO and UNESCO have argued that these issues are just as relevant in developing countries as in the industrialized economies of the OECD. Those agencies have also placed major emphasis on teachers' working conditions, salaries, and their decision-making role in educational change at the national and local level as central to improving educational quality (ILO/UNESCO, 1994). It is hard to imagine large improvements in the quality of education in any country without improving the mathematics and language knowledge of individuals who enter teaching. Yet, as will be shown below, globalization has had a mixed impact on the 'quality' of individuals becoming teachers, mainly because of the concomitant pressures that the global financial community exerts to reduce public spending.

Finance-driven reforms

Globalization means increased competition among nations in a more closely intertwined international economy, a competition that is continuously enhanced by more rapid communication and computer technology and by a way of business thinking that is increasingly global rather than regional or national. One of the main products of such competition is to make nation-states increasingly aware of their 'business climate'. The conditions of doing business in a country are responsible for attracting foreign capital and for the ability of local businesses to accumulate profit. All national economies (and sub-national regions, industries, and most firms) in the world have had to adjust to this new global economic 'structural' reality. In the broadest terms, this is the meaning of *structural adjustment*. Structural adjustment is normally associated with correcting imbalances in foreign accounts and domestic consumption (including government deficits) and with the deregulation and privatization of the economy.

The International Monetary Fund has played an important role in setting the conditions for nation-states to develop economically in this global context. A major part of the IMF package for countries preparing themselves for 'sound' economic growth is to reduce the size of the public deficits and shifting national resources from government control to the private sector. This, in turn, means the reduction of public spending relative to the private sector. Since educational spending is

such an important fraction of public-sector spending in most countries (about 16 per cent), reducing public spending inevitably means reducing the relative spending on education, at least for a number of years, until the economy begins growing rapidly enough to generate additional government revenues.

Finance-driven reforms are set in this context. Their main goal is *to reduce public spending on education*. Since their *ultimate* objective is the same as in competitiveness-driven reforms – to improve the productivity of labour – they are also concerned with improving the efficiency of resource use and educational quality. Yet since finance-driven reforms seek, first and foremost, to reduce public spending on education, they *must* choose strategies for educational improvement that reduce public resource use.

Among the international agencies, the IMF, World Bank, and regional banks (African Development Bank, Asian Development Bank, and Inter-American Development Bank) are the main advocates for such 'finance-driven' reforms. This should not be surprising. The IMF and the Banks are financial institutions, concerned primarily with reducing the cost of public service delivery. They have settled on three main finance-driven reforms: the shift of public funding for education from higher to lower levels of education; the privatization of secondary and higher education in order to expand those levels; and the reduction of costs per pupil in all levels of education, chiefly by increasing class size in primary and secondary education where student/teacher ratios are less than 40 (World Bank, 1995).

Shifting public funding from higher to lower levels of education

Higher education is a high-cost level of schooling, and basic education is relatively low cost. In addition, in many countries, public university education costs are heavily weighted towards non-teaching and non-research expenditures, such as student subsidies and administrative costs. Classroom space is often underutilized and many faculties operate with small numbers of students and dis-economies of scale. All this raises questions about the efficiency of public universities in many of the countries that spend a high fraction of their

public resources on them. Further, many of these same countries have low-quality basic education with high drop-out rates. The shift of spending, it is argued, would enhance opportunities for large numbers of primary students at the expense of subsidizing a relatively elite group of families who could, in the main, bear the costs of university education privately.

The privatization of secondary and higher education.

The principal argument for privatizing higher levels of education is that many countries simply will not be able to finance the expansion of secondary and higher education with public funds, given future increases in demand. Thus, for education to expand at those levels, developing nations will have to rely on families to finance a high fraction of school costs privately. This can be done in two ways: by allowing the creation of accredited private secondary schools and universities in much larger numbers; and by limiting the public assistance given to all schools, including public institutions, and requiring increased fees to cover the gap between the cost per student and public assistance per student. The argument has also focused on increasing community contributions to schools, in both pecuniary and non-pecuniary forms. Such reforms push for increased financing of schooling through user fees, whether the users are the community or individuals. The more highly privatized a level of schooling, the greater the user fee component. Economists at the World Bank have explicitly argued that for 'efficiency' and 'equity' reasons (see below), user fees should be a much greater proportion of total financing, the higher the level of schooling (World Bank, 1995).

The reduction of cost per student at all schooling levels

One of the key proposals for reducing the public cost of schooling at all levels is to increase class size. Based on the analysis of production function estimates that relate pupil achievement to school inputs and account for pupil socio-economic background, World Bank economists conclude that there is essentially no effect of the pupil/teacher ratio on pupil achievement in the range of 20 to 45 pupils per teacher. In most developed and many developing countries, the average ratio is well below 45, although class sizes may exceed the ratio in the urban

areas of many low-income countries. According to these analysts, countries with fewer than 45 pupils in a class could save significant public resources by increasing class size over time. This would reduce the demand for teachers and allow for much more public spending on 'high-yield, low-cost' resources such as books and other supplies, as well as in-service training that complement and enhance good teaching.

Equity-driven reforms

The main goal of equity-driven reforms in education is to increase equality of economic *opportunity.* Since educational attainment is a crucial factor in determining earnings and social position in most countries, equalizing access to high-quality education can play an important role in 'levelling the playing field'. On the one hand, globalization has put pressure on governments to de-emphasize equity-driven reforms because of the argument that investments in greater equity can reduce economic growth. This would be true, for example, if investment in raising school performance of lower-scoring children reduces the performance increase of children with higher ability. On the other hand, investment in greater access to education for low-income children might yield a higher potential return than additional investment in children from higher-income families. In that case, governments could justify investments that increase competitiveness and also increase equity.

Both the shift of public spending from higher to lower levels of education, as proposed by the World Bank and the regional banks, and many of the competitiveness-driven reforms already discussed, have equity justifications. They have elements that are supposed to improve the possibility of education serving as an instrument of social mobility. Economists have consistently argued, for example, that free public university education is a subsidy for higher-income groups at the expense of the poor (Hansen and Weisbrod, 1969). Some have argued further that social rates of return to investing in lower levels of education are higher than to investing in higher levels (Psacharapoulos, 1985). Thus, shifting public resources from higher levels of education to primary (basic) education not only means favouring low income over higher-income groups in the delivery of educational services, but

may result in more efficient use of resources to increase labour productivity.

The main equity-driven reforms in developing countries are:

- To reach the lowest-income groups with high-quality basic education, especially the large number of youth and adults who presently do not have access to basic skills. The World Conference on Education for All held at Jomtien, Thailand, in 1990 was organized by the UNDP, UNESCO, UNICEF, and the World Bank precisely to focus attention on the equity implications of the challenges faced by the need to expand basic education in developing countries (WCEFA, 1990). Some of the reforms are financial, but many are oriented towards increasing teacher quality, increasing teacher time spent in schools, making school supplies available to low-income children, and improving school curriculum. Some agencies, such as UNESCO, have also recommended special educational programmes such as distance learning and non-formal education (UNESCO, 1993).

- To reach certain groups, such as women and rural populations, that lag behind educationally. There is particular concern about women's education because of the crucial role that women play in economic development, social change, raising children, and decisions about fertility. Both high fertility rates and low life expectancies at birth are associated with high rates of female illiteracy (UNESCO, 1993, p. 29; Carnoy, 1992). Rural populations in developing countries traditionally get much lower quality education and less of it, even though most countries depend on increasing agricultural productivity for their continued economic development.

- In OECD countries, equity-driven reforms are much more targeted towards particular 'at risk' (low-income) and special needs students throughout the education system, and focus on reforms that would increase their success rate in school. These include special programmes aimed at improving retention and student achievement, including special multicultural and bilingual programmes aimed at language minorities and 'head start' early

education programmes, school-to-work in-school curricula combined with apprenticeship programmes, and after-school programmes designed to increase pupil motivation and parent involvement. The reforms often include special training for teachers who work in such programmes.

Globalization tends to *push governments away from equity-driven reforms*, for two main reasons. The first is that globalization increases the pay-off to high-level skills relative to lower-level skills, reducing the complementarity between equity and competitiveness-driven reforms. The second is that in most developing countries and in many developed countries, finance-driven reforms dominate educational change in the new globalized economic environment, and such reforms tend to increase inequity in the delivery of educational services.

However, this does not mean that educational policy cannot pursue equity-driven reforms in the context of a globalized economic environment. The state of Texas in the USA has used a testing system for the past eight years to reward and punish schools, financially based on their students' gains over time. The reward system is specifically tied to the gains by traditionally low-scoring African-American and Latino students. Uruguay applies national tests in primary schools to identify schools that need assistance because their low-income students are performing poorly. Chile and Argentina are investing heavily in low-performing schools, with positive results.

IV. Articulating educational reforms in the global economy

The analysis of these different kinds of educational reforms indicates that governments – at least in theory – can respond to globalization in fundamentally different ways, and how governments respond is crucial to understanding the effect that globalization has on education. In practice, however, the approach governments take in educational reform, hence their educational response to globalization, depends on three key factors: their *objective* financial situation, their *interpretation* of that situation, and their *ideological* position regarding the role of the public sector in education. These three elements are expressed through the way that countries 'structurally adjust' their economies to the new globalized environment.

Interpreting structural adjustment and educational reform

The features of structural adjustment as it has been practised in most high-income (Organisation for Economic Co-operation and Development (OECD)) countries, in many Asian newly industrializing countries (NICs), until the most recent financial crisis, and in some Latin-American countries, such as Chile and Brazil, at least in the 1990s (until the new Brazilian financial crisis of 1999) differ from IMF and World Bank recommendations. In these countries, globalization has stimulated economic policy to focus on increased exports, reduced domestic demand, some constraints on government spending, and some privatization, but, aside from important exceptions such as the USA and the United Kingdom, usually not in ways that sharply *increase* inequality (although income inequality in Chile and Brazil is already among the highest in the world). Rather, many of those economies have focused on 'self-adjusting' mechanisms to rationalize production and the public infrastructure that serves production and other social functions. Their education systems have

not suffered, and, in general, their educational professionals have made income gains and pupil/teacher ratios have *declined*. In the best of cases, education has improved, and teachers have participated in making that improvement happen. This interpretation of structural adjustment has governments focusing on increasing the productivity of labour by allocating *more* resources to education and by increasing direct public intervention to improve educational quality (see, for example, the post-1990 Chilean case in Cox, 1997).

This suggests that there is more than one type of 'structural adjustment'. It also suggests that the common identification of the term 'structural adjustment' with finance-driven reforms refers not to the broader definition of reorganizing the structure of production in response to very significant changes in the world economy, but to a *particular set of structural adjustment policies*. These policies emerged as much from the political and economic conditions in the USA in the 1970s as they did from the underlying economic problems of developing countries. The USA's politics combined with developing-country indebtedness and public-sector inefficiency to foster a 'dominant view' of how economies in crisis *should* reorganize to resume growth. This view, when implemented, did indeed increase economic inequality and poverty, without necessarily improving the possibilities of sustainable development. It also usually resulted in de-emphasizing the role of the public sector in economic growth and in lower spending on public services, including education. This occurred precisely at a time when the shift to a world information economy called for increased public educational investment and for more rational, and probably extensive, public intervention and resource mobilization.

The development of this 'dominant view' came from two sources. The first was from the initial conditions in those countries least able to adjust to the new international economic conditions. The simplest way to understand these conditions is to observe, ex-post, that the countries most able to 'self-adjust' had initial conditions that were consistent with world market competitiveness and the capacity to respond to rapidly changing technology (Amsden, 1989; Castells, 1991; Birdsall and Sabot, 1993). These included the capacity to develop and mobilize knowledge needed to produce new, information-based

goods and services and to adopt new methods to produce traditional industrial and agricultural products more efficiently. They also included a well-organized public service capable of mobilizing private-sector organizational and technological responses to change, public education, worker training, infrastructure investment, and government investment in research and development and a national income distribution that is reasonably equally distributed to provide political stability during a process of change.

Those countries that were less successful had a different set of initial conditions. In Latin America, for example, a long history of import-substitution industrialization based on high levels of protection for domestic industries and other forms of state intervention combined with highly unequal income distribution to make it difficult to sustain corrective economic policies in the 1970s. By the 1980s, as soon as creditor countries raised interest rates sharply to reduce their own inflations and then cut back foreign loans, Latin-American countries were thrown into a debt crisis of enormous proportions (Iglesias, 1992). Most African countries found themselves in a similar situation, heavily in debt and faced by rapidly degenerating terms of trade. Their economies suffered capital drains and negative rates of economic growth in the 1980s, and governments were generally not well organized to improve infrastructure, to support private-sector efforts to export and develop new products and processes, or to attract foreign investment on reasonable terms. The command economies of the Soviet Union, its Eastern European satellites, and of the People's Republic of China also began to flounder in the 1970s as the heavy industry/military basis of economic growth and technological change ran out of energy. Only China was able to promote economic decision-making changes that increased economic growth, mainly in agriculture but also in special industrial zones. The countries in deepest trouble in the early 1980s, therefore, appeared to be those with heavy public indebtedness, the lack of a dynamic, export-oriented private sector, and inefficient public services.

The second source of the dominant view was a distinct economic policy paradigm shift in the developed countries in the early 1980s away from Keynesianism and towards neo-conservative monetarism,

particularly in the USA (Harrison and Bluestone, 1988). This policy thinking led to a drastic increase in real interest rates to reduce inflationary tendencies in developed countries and sharp cuts in foreign loans to developing countries to reduce financial exposure (Iglesias, 1992). At the international level, the monetarist thinking also became the dominant paradigm at the International Monetary Fund (IMF) and, to a lesser extent, the World Bank. When the IMF and the World Bank were called upon to relieve developing country debt problems, they imposed a set of *structural adjustment policies* (SAPs) on developing countries that reflected the neo-conservative paradigm.

Specifically, IMF and World Bank loans required reducing public expenditures, reducing consumer subsidies (both to reduce government spending and to stimulate exports), eliminating price controls and drastically reducing tariffs in order to bring domestic prices in line with world prices. They also required revising other trade policies to encourage exports, revising fiscal, especially tax, policies, to reduce distortions in the private sector and to reduce public deficits, charging users for public services, privatizing public enterprises and social services, and bringing in institutional reforms required to implement those services (Woodhall, 1991).

Many of the elements of this particular array of structural adjustment policies (SAPs) were necessary to adjust developing economies to external shocks, to mobilize the kinds of resources needed to develop under new world economic conditions, and to allocate resources more efficiently. But with their anti-government, anti-public-sector bias, this array of SAPs – as implemented through 'conditionalities' on loan disbursements – also tended to have especially harsh effects on public services/investment and the groups that depended on those services/investment for sustenance and upward mobility.

Their negative impact on education was particularly harmful because improving labour-force skills was so important in the new kinds of goods, services, and production processes needed to compete and grow in the 1980s and 1990s.

Maintaining public-spending growth does not guarantee that poverty will not increase. As recent studies of Latin-American countries in the 1980s show, debt-ridden countries were able to avoid adjustment policies for many years, but could not avoid increased poverty rates or greater income inequality as their economies adjusted to the external shock of the balance-of-payment crisis (Lustig, 1995). Yet, a number of empirical studies, including those done in the World Bank, show that policies recommended by the IMF and the Bank are associated with increased poverty, increased inequality of income and wealth, and slow (or negative) economic growth (see, for example, Cornia et al., 1987; Bello, 1993; and Kakwani et al., 1990). Although it is difficult to separate IMF and Bank recommendations and lending from the internal and external conditions countries faced that led to the need for short- and long-term financing in the first place, the evidence is persuasive that the conditions required by IMF and World Bank loans were not a particularly effective recipe for equitably sharing the burden for restarting economic growth. The recipe took much longer to produce recovery and had a much higher cost than its proponents claimed. Whatever the intentions of these conditions, they were almost certain to distribute income less equally and reduce access to and quality of education for the poor. This has made the production of higher-quality education that much more difficult, and education professionals have borne much of the burden of and blame for this increasing difficulty.

So one way that globalization has had a major impact on education has been through the finance-driven reforms promoted by international financial institutions. Such reforms have been concerned primarily with reducing the cost of public-service delivery. Educational expansion and improved educational quality in this version of structural adjustment are therefore articulated *in the context of limited public resources for education*. To what extent public resources for education in a particular country really cannot be increased, and to what extent the 'shortage' of public funding represents an ideological preference for private investment in education is crucial to educational policy-making in the new global environment. It does make a major difference to educational delivery how the role of the public sector in education expansion and improvement is played out.

There *is* a persuasive case for finance-driven reforms. In many countries, harsh economic reality dictates that public resources are not, and probably will not be, available to provide complete and reasonably high-quality basic education to all children at the same time that secondary and higher education are heavily subsidized by the public sector. Low-income countries undergoing slow economic growth must find private resources for higher levels of schooling if they are to provide the skills needed by their labour force in today's world economy. High-income countries in a slow-growth world economy also have to allocate public resources more effectively if they are to continue to deliver high-quality public services. Further, economists make a good case that freely-provided university and, in some countries, upper-secondary education, unnecessarily subsidize students whose families generally could afford to contribute substantially – this at the expense of poorly funded basic education for the mass of children. Others make a good case that education could be improved by allocating resources more efficiently in the education sector (Lockheed, Verspoor et al., 1991).

That said, finance-driven reforms may contribute to the shortage of public resources for education even when more resources could be made available to education with net gains for economic growth. First, structural adjustment loans require the reduction of public-sector spending, and every government considers educational expenditures as part of that package. This effectively legitimizes policies that reduce public educational effort, even when this may be less than optimal. Second, the major emphasis on reducing public spending in favour of private contributions explicitly makes the public sector less 'responsible' for the delivery of educational services, and reduces pressure on the public sector to improve educational quality. If the free market can do a better job of allocating resources to education than government, then why should government be involved in educational improvement?

Decentralization

It is in this context that we have to assess the impact of decentralization on education in countries going through 'globalization reforms' (McGinn, 1997). The main argument for decentralization is

that if municipalities and, in some places, schools, are given greater educational decision-making autonomy, this will devolve local control over curriculum and teaching methods to local communities and the teachers and principals of the schools themselves. The assumption is that increased flexibility and control allow for a better fit between educational methods and the clientele served, as well as greater accountability for educational results. If the local educational authorities see themselves, and are seen, as responsible for educational delivery, reformers reason, educational quality will improve.

Decentralization is therefore cast as a reform that increases productivity in education and hence contributes significantly to improving the quality of a nation's human resources – largely through bringing educational decision-making closer to parents' needs and giving local authorities greater educational decision-making autonomy. With more local management and financial autonomy in schools, the reasoning goes, parents will increase participation and schoolteachers and administrators will increase quality, both by improving teaching and by using resources more efficiently. The example that is most often used to illustrate this point is private schooling. Such schools, even when subsidized with public funding, can allocate resources and vary their educational delivery with much greater freedom than public schools. Hence, it is argued, by allowing public schools the same kind of autonomy as private, and by allowing private schools to compete with public schools for students by providing government funding to all schools more or less equally per student (vouchers), all schools will have the incentive and the possibility to become as attractive as possible and as cost-effective as possible. But even without the subsidized private school component, public school autonomy should lead to significant improvements in educational delivery. Simply making teachers and school administrators more directly responsible for their pupils' performance and allowing them to implement the changes needed to accomplish this goal, should lead directly to higher-quality education.

Although decentralizing the management and financing of highly bureaucratic, centralized systems of education should lead to more innovativeness and efficiency of educational service delivery, with

more accountability to parents, there is little evidence that educational quality improves as a result. For example, in the USA, where there has been a concerted push to move control of educational decisions down to individual schools, extensive evaluation shows that school autonomy itself has produced no significant student achievement gains (Malen et al., 1989; Hannaway and Carnoy, 1993).

This should not be surprising. Most public schools worldwide are already rather autonomous, and teachers in classrooms already have a great deal of autonomy as long as they cover the prescribed curriculum. Teachers are subject to almost no supervision anywhere. Even in highly centralized education systems, public-school teachers and school administrators could innovate if they wished, and some do, usually with little control from central authorities. Unfortunately, the most prevalent 'innovation' is teacher absence or the decision *not* to teach the prescribed curriculum or the prescribed number of hours per day. In this sense, the main purpose of decentralization would be to provide greater teacher supervision by the community, and teacher accountability directly to parents. In El Salvador, for example, some rural communities have been given control over educational resources so that they can monitor teacher presence.[9] Greater supervision may result in greater productivity but not necessarily in more innovation.

But beyond that fact, that the most important reason for decentralization may not be greater teacher or school autonomy but greater control over what teachers do, many of the decentralization reforms do **not** have their origins in the desire to increase school productivity, but in the need to reduce central government financial and management responsibility for primary and secondary education. The Colombian experience in the late 1980s and early 1990s is a case

9. A principal component of the government's sector strategy has been EDUCO (Educación con Participación de la Comunidad). Management of targeted schools in poor rural areas has been transferred to communities. Funds are transferred by the Education Ministry to ACEs (Associaciones Comunales para la Educación) - local school committees that are held responsible for key school management functions such as hiring and dismissal of teachers, maintenance and supply, negotiation with government and international agency programmes to obtain additional funds for school improvements.

in point (see Carnoy and Castro, 1997). There, municipalities opposed the decentralization reform and rewrote the legislation because they realized that they would have to bear much more of the cost of education than in the past. Similarly, in Argentina (1978 and 1991), Chile (1980) and Mexico (1991), decentralization reforms had strong elements of devolving management and financial responsibility to the provinces, municipalities, and states mainly because the central governments wanted to see these sub-jurisdictions bear a greater share of educational costs. The experience with this finance-driven version of decentralization suggests strongly that decentralization with slower growth in or reduced financial and technical assistance from the central government to local- and state-run schools may achieve financial goals but *tends to increase inequality* in educational performance between the poorer states (municipalities) and the richer ones. Countries that have gone through that experience, such as Chile and, in a certain historical sense, Brazil, are now expanding central and state government help to municipalities and, in Chile's case, re-centralizing educational improvement efforts. At the state level in Brazil as well, new initiatives, such as those in Minas Gerais and Parana, are improving education and reducing educational inequality with a combination of school autonomy and state government evaluation, technical assistance, and increased spending on salaries and materials.[10] In Argentina, until the central Ministry made efforts to assist lower-income schools with its *Plan Social*, student performance differences between low- and high-income provinces and low- and high-income schools within provinces seemed to be widening. Neither are greater absolute federal government contributions to provincial treasuries (the result of rapid economic growth in the past two years) being passed into more provincial spending on education, as provincial governments seem to be using additional funds for public works rather than education, particularly in lower-income provinces.

10. The most interesting feature of the Minas Gerais reform is its multi-pronged approach. It simultaneously tried to: increase the autonomy of the schools; transfer financial resources directly to the control of school principals; create school boards with active parent participation; have principals chosen by school boards, among candidates pre-screened through an examination; create teacher-training programmes managed by the schools; and establish a state-wide evaluation of schools via a student-testing programme.

The Latin-American experience suggests that decentralization and school autonomy may evoke educational improvement at the local level, but generally only under conditions where educational spending and central (or state, in those states that have such expertise) government technical expertise are increased, especially to poor localities and low-income schools that have less of their own financial and technical/human resources to undertake educational improvements. The widely held assumption that more autonomy will spontaneously produce improvement is not borne out in practice. In every country and province there exist schools that excel on their own. But the more generally successful cases of educational improvement, such as in Chile in the 1990s and Minas Gerais in the past five years, show that educational improvement is the result of systemic efforts 'led' by a central authority. These efforts combine educational evaluation, more and better materials, investments in teacher training, more local supervision to assure that teachers actually implement change, and increased parent participation and investment in improving school management. Otherwise, cases of school success tend to be historically spurious, the result of a school leader or a group of teachers with a clear vision of educational excellence and the organizational abilities to put the vision into practice.

Privatization

For many, an extension of such reforms is full public financing of privately managed schools through voucher plans. Although World Bank analysts claim that private schools are much more cost-effective than public (Jimenez et al., 1988; Lockheed and Jimenez, 1996), the evidence supporting this claim is controversial (see Riddell, 1993) and probably varies among types of private education (McEwan and Carnoy, 1999). But beyond such cost-effectiveness studies, the experience with privatizing education through vouchers suggests that privatization tends to increase inequality of educational outcomes and does not in itself improve student performance. Under the Chilean voucher reform, the proportion of pupils in Chilean basic education attending private schools (both paid and subsidized) increased from 20 to 43 per cent between 1980, the year of the reform, to 1996. But test results for 1982-1996 show that before 1990 (when the new

democratic government began a series of well-financed programmes to improve learning in the lowest-performing schools), pupil performance in low-income municipal schools declined relative to both private schools and higher-income public schools (Prawda, 1993; Carnoy and McEwan, 1997). Recent research shows that although older, established, and mainly religious private subsidized schools continue to be more effective in producing achievement than public (municipally-run) schools, most of the expansion of privately-run education has been in for-profit voucher schools, which turn out to be, in the 1990s, less effective than public schools once the socio-economic background of students attending schools is accounted for. Private schools that cater to students from less-educated families are *least* likely to do better than their public school counterparts. Even from a cost-effectiveness standpoint, private schools do only somewhat better than public ones in Chile, mainly because private schools have higher pupil/teacher ratios (Carnoy and McEwan, 1997). Further, in most countries, including Chile, private schools lower their costs partly through selecting out 'higher cost' students and by 'free-riding' on the system of public education, i.e. by hiring a higher proportion of part-time teachers (many who also work in public schools).

This does not mean that in every country, public schools are as cost-effective as private even when we account for differences in student characteristics in different types of schools. A relatively careful study of urban students in Uttar Pradesh, India, for example, shows large differences in cost-effectiveness favouring unaided private schools, mainly because teachers are paid much less than in public schools and, again, because paid private school class size is much larger (Kingdon, 1996). But were the government of Uttar Pradesh to issue vouchers, would teacher salaries decline sharply to the level now observed in private schools? Would average pupil/teacher ratios also rise significantly? When economists use comparisons between existing private and public schools to argue for privatization, they assume that large shifts in students from public education will have a minimal effect on the nature of privately managed schools. This is unrealistic. To estimate the 'true' cost-effectiveness of private education, we would need to cost out private educational delivery under conditions of private management of a large fraction of or even

the entire education system. In that sense, the Chilean case reflects much more accurately public-private differences than cases where private schools operate in a rarified, selective atmosphere at the margins of public education. In Chile, many private schools are well administered and many are truly more cost-effective than public schools, but many public schools are also just as well administered and more cost-effective than the average private school. A broad and systematic privatization of school management such as in Chile suggests that large-scale private management of schools produces a breed of private school that contributes little or nothing to school improvement.

Finally, the Chilean data do not bear out the oft-mentioned claim that competition between private and public schools results in improved public school performance. Using panel analysis, we found that although competition per se may have had some positive effect on average public school performance, this was swamped by the opposite influence of 'cream skimming', where private schools skim off the better-performing students from public schools (McEwan and Carnoy, 1999; see also Rounds Parry, 1996). To the contrary, the one significant positive effect on Chilean public school performance over time has been central Ministry intervention through providing new materials and teacher training to the lowest-performing schools (McEwan and Carnoy, 1999).

The articulation of reforms and its impact on knowledge production

The decentralization reforms we observe as part of the globalization process are therefore couched in the *rhetoric* of increasing productivity by giving more control to local actors over educational decision-making. But in truth the reforms are inexorably entwined with reducing the central government contribution to public education. This difference between rhetoric and reality is important. In narrow economic terms, globalization does produce greater efficiency, since it enables capital to seek out high returns and to employ productive forces and knowledge wherever they might exist. The decentralization rhetoric reflects that possibility for education.

Decentralization can conceivably improve educational productivity. It may also be justified on political grounds, as globalization reduces the legitimacy of nation-states and regions or localities demand more control over management of public services. But in the present historical context, globalization is usually accompanied by an ideology that makes public-sector financial austerity a condition of economic progress. Free-market ideology also dominates the educational thinking of those spreading decentralization reforms, who, in turn, are largely representatives of financial institutions that are willing to put resources behind their beliefs. Free-market ideology is not just concerned with economic efficiency or even local or regional *public* control. It is inherently opposed to government activism, on the grounds that government bureaucracies are inescapably inefficient. Since decentralization reform is dominated by these ideological considerations, not by the imperative of raising educational productivity, globalization shapes education in terms of goals that are at best tangential to achieving educational improvement and certainly outside the everyday world of educational practice. In a nutshell, globalization enters the education sector on an ideological horse, and its effects on education and the production of knowledge are largely a product of that financially-driven, free-market ideology, not of a clear conception for improving education.

Financially-driven decentralization reform is also likely to put increased pressure on teacher salaries, especially in the lowest-income regions, thus creating resistance among the very educational actors needed to improve the quality of education. Especially because teachers continue to work largely unsupervised behind the closed doors of classrooms, focusing so heavily on top-down cost-saving deflects attention from a second fundamental reality: if nations hope to increase the cognitive skills of their young populations through schooling, they will have to rely on autonomous, motivated, and skilled professional teachers to do so. How these teachers regard themselves, how well they are prepared to do their job, and how committed they are made to feel to their pupils' academic success, are keys to producing both basic and advanced learning in any society. This requires a heavy dose of public-sector involvement, and not just at the basic education level. Teacher recruitment, teacher education, and teacher technical

assistance through in-service training are almost universally public-sector financed *and* managed. If they are to be improved, it is the public sector that will be responsible.

Since globalization in most developing countries is mainly articulated in the form of finance-driven decentralization reforms, its primary effect on their education systems is to increase inequality of access and quality. By pressuring regions and municipalities to reduce teacher salaries in order to reduce costs, it creates conflict between the state and the very group needed to produce favourable educational change. Many of the reforms implicit in structural adjustment are actually needed, but their form of implementation results in a series of negative impacts that could be avoided by more coherent focus on school improvement rather than on simple financial objectives. As the author shall argue below, this requires nation-state interpretations of how to improve educational process and practice *within the context of globalization* rather than on globalization's financial imperatives themselves.

V. The impact of globalization on educational practices

Globalization and the culture of educational measurement

This book has emphasized that the effects of globalization on education depend greatly on how countries adjust the structure of their economies to the new globalized environment and how they interpret the role of the public sector in reforming education to meet the needs of that new environment. In most developing countries, educational response to globalization is dominated by finance-driven reforms. But the discussion has also made clear that globalization can promote competitiveness-driven reforms. Such reforms attempt to improve the quantity and quality of skills in the labour force, including an increased emphasis on teaching science and mathematics, and on educational measurement to monitor and stimulate educational improvement.

Yet, even what seems to be a competitiveness-driven reform, such as measuring educational quality, can be drastically altered when situated in the context of a financially-driven structural adjustment. For example, student performance measures can be used to justify reductions in teacher salaries and reductions in overall public spending on education in favour of mobilizing more private resources, as it was in Chile in the 1980s. In that case, student test scores were part of an overall strategy to show that public educational delivery is inefficient, to give parents incentives to move their children to privately managed schools, and to reduce public spending on education (Benveniste, 1999). Because this use of testing is written into Chilean law as passed under the military government, even in a different political context after democratization in 1990, tests continue to be used to foment competition among schools. But the Ministry has also used test scores in the 1990s to assist the lowest-performing schools to improve performance, and the Ministry has become increasingly interventionist,

guiding reform from above. Thus, student evaluations can serve many purposes. As much as the form of the test itself, the political context of testing is crucial to their ultimate effect on educational improvement.

Students in every country are evaluated annually or more often by their teachers (and their school). These evaluations measure, on the basis of teacher- or school-designed examinations, whether a student has 'learned' the prescribed curriculum. Except in those countries where there is automatic promotion, they determine whether students repeat the grade or move on to the next one. In addition to such 'in-house' evaluations, some countries also have 'life-chances' tests, usually at the end of secondary school (O- and A-levels in Africa, the English Caribbean, Malaysia; the *baccalaureat* in former French colonies), and others, examinations that 'rank' students for entry into different kinds of universities and university departments (for example, the *vestibular* in Brazil).

Although all these examinations measure student competences in terms of curricular goals (computation, basic reading and writing skills), they are designed primarily to compare individual students with other students for the purpose of 'sorting'. For example, teacher-examination evaluations are often characterized as *minimum standards* that deny promotion to students who perform inadequately. But such standards vary widely from school to school, and the fact that they are usually a function of the number of places available at the next level of schooling suggests that they act more as a sorter than as a standard. The more places available in secondary school, for example, the lower the percentage of failures in primary school.

An increasing number of developing and developed countries are moving from what is now almost universal in-school individual student evaluation and end-of-school-level examinations with almost no diagnostic implications, towards system/school assessment examinations. These are intended to identify poorly performing municipalities/schools and either 'shame' such schools into doing better, or to suggest directions for school improvement, depending on how government conceives using evaluation. The test is given to a sample or an entire population of students at a given level of schooling in a

nation, state, province, or municipality to assess the amount of learning (against some absolute standard) taking place in schools, municipalities, states, or nations, and to compare the level of student performance in a particular grade *among schools.* Chile, which has the longest history of such examinations, originally tested a national sample of schools in 1958, again in the late 1960s and early 1970s; and, beginning in 1982, with the PER examination, and then the SIMCE in 1988, has tested students in the fourth and eighth grades for the past 15 years. Other Latin-American countries, France, Australia, and England have also implemented such tests.

They enable countries or regions to assess how much of the prescribed curriculum students are learning on a school-by-school, region-by-region, and socio-economic group by socio-economic group basis. When applied over a period of time, they also give an indication whether improvement is taking place or not, and whether certain policies are working or not. For example, the effects of Chile's P-900 project, begun in May, 1990, in which the Ministry of Education provided educational materials, teacher training, and other student interventions to the lowest-performing schools in the country, could be charted by comparing the test scores of the schools that were involved in the project with other schools.

The tests also make teachers, administrators, and parents much more aware of student performance and more sensitive to the need to raise performance, especially if the scores on the tests are systematically publicized. Interviews in Chilean schools, for example, suggest that all these groups know how their school is performing on the SIMCE test, and how performance changes from test to test. Since (urban) parents in every Latin-American country have some degree of choice in their children's school, publicizing test scores could influence school choice and competition among schools even in a largely public system.

Furthermore, there is a much greater focus in many countries on comparing performance in these subjects with student performance in other countries. With the expansion of economic competition and the increased availability of information technology, data take on increased value and increased use. Performance in real time is enhanced

as an outcome, quantitative measurement appears easier, and its results become increasingly the means of communication about performance. An important element of such performance is linked to 'efficiency'. The application of this thinking, part and parcel of globalized thinking, to education takes the form of tracking the quantity and quality of education through data collection. The notion has been stimulated by the spread of a science and mathematics culture (Schofer et al., 1997), and also the strong effort by many countries to attract foreign high-tech investment and to build up domestic high-tech industries (Carnoy, 1998).

The new emphasis on measuring and comparing school outcomes across countries and within countries has not occurred spontaneously. Rather, it has been pushed by international organizations such as the International Educational Assessment (IEA), the American National Center of Educational Statistics (NCES), the OECD, and the World Bank. All these organizations share a globalized view of education and efficiency, which includes a highly quantitative view of progress. They also share an explicit understanding that 'better' education can be measured and that better education translates directly into higher economic and social productivity. With more intensive economic competition among nation-states, the urgency of improving productivity is translated by these organizations into spreading the acceptance of inter- and intra-national comparisons on standardized tests of student knowledge.

The great advantage of international comparisons is that they, more than national tests, provide a benchmark for educators in setting national learning goals. Most regional tests, such as those recently applied to third- and fourth-grade students in 13 Latin-American countries by UNESCO's regional office (OREALC), measure only basic skills. International tests like TIMSS allow countries to compare the effectiveness of national and local curricula in developing problem-solving skills and higher-order thinking, in addition to basic skills, and to compare local educational standards with other countries'.

Yet, comparative testing, whether national or international, does raise the issue of how the results should be employed beyond making

them available to analysts in central ministries or in international agencies. In Chile, Costa Rica, and in Minas Gerais (Brazil), test results by school are circulated both publicly and in individual schools. In Chile, as mentioned, the test was originally intended to stimulate parents to move their children into private schools, and still remains in part an evaluation system aimed at 'informing' consumers (parents) about the effectiveness of various schools so they can better 'choose' among schools. In Argentina, from 1995 to 1998, evaluations were published for the national level divided into socio-economic-class groups, but not for individual schools. **The Ministry also collected data on schools, teachers, and parent background, as well as the student results, and was able to analyze these data using input-output models, but never published the results.** The test was intended to maintain some political control for the Ministry of Education over provincial education systems by testing the 'quality' of education in different provinces. Since the federal government was distributing bloc grants to provinces, it felt that it should maintain some regulatory power over the provincial education systems. Some provinces responded by developing their own tests. Beginning in 1999, schools in Argentina began to be informed of their results. ??? Yet, the struggle over the testing and evaluation of students continues. Many provinces do not consider federal tests legitimate. The teachers' unions are also opposed to testing in many provinces because the results are used to point fingers rather than to provide more resources or technical assistance. In Texas and Kentucky school results are also widely publicized, but there seems to be rather widespread acceptance by teachers and administrators that the tests are generally useful. Even so, there is a tendency to teach to the test in order to improve school results. Yet, in Uruguay, results are released to schools, but not released publicly. The Uruguayan system is highly centralized and the tests are intended to identify low-performing schools specifically to determine how to improve their performance, not to stimulate school choice. In France, the *baccalaureat* (high-school graduation) test results by school, corrected for social-class clientele, are published nationally, but tests taken at the start of the third, sixth, and eighth grades are not published by school. Tests are corrected by teachers at the school and the schools use them to take corrective measures; regional and

national averages are communicated to the teacher and to the parents, but, as in Uruguay, school results are not published.

As a rule, for tests to play a useful role in improving education, teachers, parents, and school administrators have to consider the test instrument used as a legitimate evaluator of student learning and (by implication) teacher and school performance. There is little evidence that knowledge of test results alone has very much effect in improving teacher and school practices, although some analysts have stressed that schools can be 'shamed' into doing better by having their poor performance publicized in their communities. Teachers and administrators generally have to be provided opportunities to acquire more effective practices and schools need access to materials that can improve student learning. Test results need to be seen as directly linked to the application of more effective practice and teachers and administrators need to be made accountable for implementing such practices. In the best of cases, school personnel participate in designing and applying the tests, and the tests are directly linked to knowledge-transmission goals set either at the national or regional level. At the least, as in Uruguay, teachers' organizations are consulted and courted to 'buy in' to the tests.

Important aspects of school efficiency can certainly be understood through such tests, but efficiency here is less concerned with resource allocation per se, as with process and use of resources. In Chile, for example, available evidence suggests that the use of tests to stimulate competition among private and public schools competing for students had no positive effect on student achievement, and may have reduced performance of schools catering to low-income clientele. However, in the 1990s, the use of national testing linked to central government school improvement programmes did apparently increase test scores in lower-scoring schools to low-income students (McEwan and Carnoy, 1999).

With globalization, governments seem to pay much more attention to how well their students are doing compared to students in other countries. Increased economic competition has been transposed into competition for indicators of high productivity, student test scores

among them. Although the large amount of data collected as part of international testing since the 1970s has not been used systematically to improve education in the participant countries, the use of national and international tests in a comparative way does seem to put needed pressure on schools and countries to be accountable for educational quality. The Latin-American office of UNESCO, OREALC, tested third and fourth graders in 13 Latin-American countries in 1998, comparing their mathematics and Spanish scores. Surprisingly (or perhaps not surprisingly), Cuban pupils score almost two standard deviations higher than those in Brazil, Chile, and Argentina, countries with higher per capita income (UNESCO/OREALC, 1998). Although there are always questions about student sampling in any such survey, Cuban schools do appear to be much better supplied and teaching better than in Chile or Argentina. In any case, not many in the international banks are planning to begin visiting Cuba to see how a highly centralized education system in an authoritarian socialist state produces such high test scores. Yet, they probably should consider seriously why Cuba does so well, while students in Chile, a country that has followed all the policy recommendations of the new global thinking, do no better than students in Brazil or Argentina. The OREALC results also present an interesting dilemma: even if careful analysis would reveal the Cuban formula for such high test scores, what is the likelihood that politicians from Chile and Argentina would be able to duplicate it? As interesting is that Cuba probably developed such a high-quality primary public education system without competition from private schools or decentralized decision-making or, for that matter, many of the other reforms recommended by the World Bank in its structural adjustment loans. Although Cuban education has always been test-conscious, they have used tests as an incentive to invest more, not less, in education (Carnoy and Werthein, 1980; Carnoy and Torres, 1989). In Chile, national testing has gone on for at least 17 years, but it is only in the past 8 years, with the new global emphasis on efficiency and measurement, that the testing has started to define the 'meaning' of education and educational change, with schools consciously aware of their test results and organizing themselves around improving scores.

Global notions of efficiency and measurement can therefore have a positive effect on educational output. For this to happen, however, these notions must be passed through local filters and have as their specific purpose school improvement, even if school improvement requires *more resources*, which is likely to be the case in most developing societies. The distinction between this type of application of measurement to raising efficiency, and the use of testing to develop national policies for resource use with the intention of decreasing per-student public resources available for education, is subtle and is mainly rooted in how the state, rather than international organizations, interprets the role of measurement in conditioning educational change. Tests are just the tip of the school-improvement iceberg. Without support systems that allow schools to learn how to improve teaching and learning, tests will rarely elicit systematic efforts to make improvements. Educational policy-makers (and economists) cannot assume that test scores are low mainly because teachers are not trying hard enough or because schools are local 'monopolies'. In most countries, good school materials and knowledge about good teaching and good school management are very scarce commodities. Although in some countries teacher absenteeism and effort are important issues, and widely publicized test results might promote greater teacher responsibility and effort, **the main obstacles to school improvement in most countries are knowledge of what constitutes better classroom practice and the materials needed to implement such practice. So for testing to have a significant effect on student performance in those countries, it has to be part of a more systematic effort to assist teachers (and schools) to improve classroom practice.**

Globalization and its effect on classroom teachers

Especially troubling for the possibility of raising student achievement is that the ideology associated with globalization usually places implicit and often explicit emphasis on reducing public spending on teachers. From a finance-reform perspective, this is logical, since salaries represent such a high fraction of total public education expenditures. International bank policy has retreated from an earlier position that reducing teacher salaries is the *sina qua non* of its finance-based reforms. Recent World Bank

documents, for example, seem to reflect a strong commitment to improving teaching through improved recruitment and training (Lockheed, Verspoor, et al., 1991; Farrell and Oliveira, 1993; World Bank, 1995). But overall, World Bank financed-based reforms, and much of the ideological rhetoric surrounding globalization, inescapably make teachers the villains of the increasing difficulties faced by most countries' schools and, coincidentally, the brunt of government attempts to reduce costs. The World Bank's present focus on privatizing teacher markets and increasing class size continues to send a signal to governments that there is room for increasing teachers' workload and reducing their pay without adversely affecting pupil performance. When teachers resist externally imposed reforms that worsen their teaching conditions, their associations are characterized as the major obstacle to educational improvement.

Finance ministries and international agencies associated with finance capital (World Bank, Inter-American Development Bank, African Development Bank, Asian Development Bank, and the OECD, for example) are convinced that their cost-saving reforms will work because they are justified by empirical estimates of educational 'production functions'. These estimates show that teachers' pre-service training and class size are much less important in explaining variation in student achievement than in-service training, teacher knowledge of subject content, and school materials. These claims could be correct under certain conditions. With the lecture-type teaching technology typical to many developing countries' classrooms, it could well be true that variation in class size between 20 and 45 students has no effect on pupil achievement, and that the main ingredient in improving pupil learning is the availability of books to study at home. Anyone who has seen children trying to learn without books is quickly convinced that the first help a teacher needs is adequate learning materials for students, not necessarily a smaller class size.

But the estimates could be incorrect because the production functions for schooling on which they are based do not specify an underlying learning technology. Even were policy-makers to attempt to evaluate which are the most effective inputs in producing higher achievement in a particular country, they would have to understand and be able to model the process by which children in classrooms

learn (Levin, 1980). Levin has argued that the time the teacher spends teaching, the effort the teacher puts into teaching, and the quality of the teaching method used are all fundamental to explaining variation in student achievement among classrooms and schools – yet none of these enter into traditional production-function estimates. It is precisely these mis-specified functions that serve as the basis for all the Bank's policy conclusions on how to make schools more effective.

The policy direction suggested by such production-function estimates may be misleading in other ways. First, increasing class size up to 40-45 pupils per teacher, which World Bank researchers argue would save resources without affecting pupil achievement, may be inimical to recruiting better educated and more talented individuals into the teaching profession, since a larger class size makes teaching more difficult and less rewarding. Second, the estimates implicitly assume an existing teaching technology – lecture/note-taking – prevalent to most developing-country classrooms. But if disadvantaged children are to make significant gains in achievement, the teaching technology required may have to be very different to straight lecture-copy. This new technology may be impossible to implement with large numbers of pupils in the class. Viewed another way, if government is confronted by falling pupil/teacher ratios, as is the case in most regions of the world (UNESCO, 1995), it might consider developing an alternative teaching technology that capitalizes on smaller class sizes to produce much higher achievement rather than trying to increase class size. And in return for smaller class sizes, it might also ask teachers to volunteer longer hours in school, where such additional hours do not eliminate other vital tasks such as lesson preparation. Alternative policies also include capitalizing on more favourable pupil/teacher ratios to upgrade teachers' professional qualifications to meet the demands of new teaching technologies. A number of OECD countries have relied on this option in the course of adjusting resources to demands (ILO, 1991a; OECD, 1998).

Most important, however, globalization ideology and its concomitant international lending agency policies that deprecate public education and public-school teachers, ignore fundamental 'political' realities of improving educational quality, and may act to contradict

the fundamental need for a more educated labour force in an ever more competitive world economy. Teachers in most countries are rarely supervised on the job; they work alone in classrooms, and how much and how well they teach is mainly a question of individual responsibility and skill. **If nations hope to increase the cognitive skills of their young populations through schooling, they will have to rely on autonomous, motivated, and skilled professional teachers trained in public institutions to do so. How these teachers regard themselves, how committed they feel to their pupils' academic success, how willing they are to learn to do their job better, and how *able* they are to teach well are keys to producing both basic and advanced learning in any society. Teacher commitment and involvement implies a management system that takes teacher needs into account and involves their participation in improving the quality of education.**

Educational technology

Globalization is intimately associated with information and communication technology. The advent of the Internet has globalized information in real time for mass use. Many view such interactive access to information as having vast potential for education. They see computers, with their ability to process information quickly in an interactive fashion, as part of a cure for poor education. If globalization is to have any direct impact in the classroom, computers and the Internet would surely be part of that educational change.

Yet, the history of technology in schools, beyond simple aids, such as blackboards and overhead projectors, suggests that fancier equipment, such as television and computers, have a difficult time impacting teaching and learning to the extent their advocates suggest (Cuban, 1986). And despite a vast literature promoting more expensive and complex technologies, there is little evidence that they are cost-effective in improving student performance in a school setting (Carnoy and Levin, 1975; Levin et al., 1986). There is yet less evidence that computers, even when available in classrooms, are widely implemented effectively to produce increased learning (Klees, 1996). Thus, globalization has increased the pressure to adopt computer technology

for classroom use, but this is usually limited to installing machines and some software without the necessary immersion training, support systems and changes in teaching methods and curriculum required for total integration of this technology as a *learning system.*

Few doubt that technology can play an important role in education and training. Radio and television have long been used for educational purposes. Entertaining children's programmes such as *Sesame Street* appear to impact reading and numeracy skills. Even more formal educational radio and television have been shown to be effective in classroom settings *when used properly* by school staff (Klees, 1996; Carnoy, 1975). Computers introduce new ways to process and store information and impact the speed of communication among individuals at great distance. They also present alternative systems for learning. Drill and practice programmes, tutorial programmes, a host of commercially available learning games, LOGO, and computer simulations and animations used to explain scientific principles, and even word processing, with its built-in spell check and thesaurus programmes, can all be shown effective in improving student learning. The advent of the Internet provides another popular form of data gathering for research and access to a wealth of information. So the possibilities seem great for computers as a new tool for learning.

The main problem lies in the explicit and implicit costs of this technology, not just for developing-country educational budgets, but also in the USA, Europe, and the high-income countries of Asia. Educational television was pushed in the 1970s as a way to improve classroom learning, using lectures by expert teachers broadcast from central facilities to supplement teaching at the school. But this proved to be an expensive add-on. The TVs were often used sporadically, or broke down and were not fixed for lack of parts and maintenance personnel. Computers themselves are no longer especially expensive. By the time other fixed costs, such as rewiring, peripherals, and initial software, are included, a computer package for a school that allows students adequate time during the week to use it (approximately one computer per five or six students) is expensive. It could initially cost a school with 400 students about $100,000-$150,000, or about $300 per student. This includes neither teacher training to make all teachers in the school familiar enough with computer technology to integrate

computer use into their teaching, nor the variable costs associated with computers, such as a full-time computer teacher, computer maintenance, and annual spending on software. In the USA, these costs represent a high percentage of the total (Levin et al., 1986). In developing countries, where computer specialists, maintenance personnel, and educational software in local languages are relatively expensive, omitting their cost seriously underestimates the total expense for an effective computer education add-on in a school. As important, the potential of computers to develop higher-order cognitive skills requires the kind of teachers who know how to develop those skills in pupils without the use of computers, and these are precisely the teachers that are relatively scarce in most countries.

No wonder, then, that in almost all primary schools that have computers, the technology is largely symbolic. It is just too expensive to do more. Students have access to relatively few machines with text-editing or some educational software for less than one-half hour per week. The teacher trained to teach children cognitive skills has limited familiarity with computer possibilities. The computers break down and take weeks to fix. The other teachers in the school do not integrate computer use into their own teaching because they have not been trained to do it. At best, therefore, the main effect is to familiarize students with the technology itself. Indeed, that is what most parents expect from putting computers in schools.

So until now, **it is unclear how television and computers can be used to teach mathematics and language more *cost-effectively* in schools than better traditional written materials, better pedagogy, or other alternatives such as peer-tutoring. Until these technologies can be integrated into the life of the classroom to complement and improve teaching at a relatively low cost, they will simply be expensive add-ons, and despite globalization, we will not see massive shifts to integrated computer-aided instruction for many years to come.**[11]

11. IBM has invested in model computerized schools in the United States where all teaching is organized around computers, and in LOGO-based primary school computer labs in countries such as Costa Rica, which are not generally integrated into the classroom life of their schools. Neither of these possible arrangements has been subject to objective cost-effectiveness evaluation.

The clearer manifestation of globalization in the form of educational technology is its increasing use for distance learning. Distance learning means *extending* schooling to more difficult-to-reach communities or post-school, working populations through media, computers, and the Internet (at a lower unit cost per pupil than trying to reach such students with conventional schooling). It also means training young people and established workers in specific skills at a 'distance', including much sought-after computer skills. Evaluations of experiments with interactive radio in Nicaragua and Bolivia demonstrate it to be highly cost-effective. Mexico has been operating its *Telesecundaria* for many years, with many million graduates. For these mainly rural students, *Telesecundaria* was the only way to attend secondary school. The *Tecnologico de Monterey*, Mexico, has had great success beaming technical and management courses through television and interactive hook-ups to students in many Mexican states. Brazil's *Globo* Network and its predecessor, *Telecurso*, has millions of the country's poor, who otherwise would not have access to secondary education. *Telecurso 2000* now offers a GED-type programme for young adults, using commercial television-style programming and supplemental written materials. And in all countries, computers have been used successfully at all levels of education to teach individuals computer skills. The Internet may end up being one of the most important educational tools of the next century, but perhaps mainly in people's homes as a way of increasing access to educational resources for people with little access to local books and other materials. But policy-makers still need to keep in mind that distance education and direct skill training require legitimating instruments, such as competency or equivalency examinations, as now used in Brazil, to translate the cognitive and production skills acquired in these courses into higher income for graduates. Otherwise, the gains have been shown to be relatively low.[12]

The possibilities of applying computer technology and the Internet to adult, lifelong education turn out to be much greater than using

12. Even in the case of the USA's GED (an examination that serves as a high-school graduation equivalence), the gains appear to be negligible, raising doubts that equivalency examinations have very high value in countries where a secondary degree is already common (Camerone and Heckman, 1993).

them in traditional schools, particularly at the lower grades. For adults, access to work-related information and specific knowledge applicable to work has real relevance for their everyday lives. Such information and knowledge can be collected and transmitted on a worldwide scale. This is precisely the kind of application to which media and computers can respond well. Thus, **the new technology has enormous implications for lifelong education, and educational policy-makers can play an important role in fomenting such education through the spread of technology to community centres and adult education centres even before it becomes ubiquitous.**

VI. Globalization and cultural identity

Education does much more than to impart skills needed for work. Schools are transmitters of modern culture. The meaning of modern culture as interpreted by the state is a crucial issue for educators and is contested in every society. Globalization redefines culture because it stretches boundaries of time and space and individuals' relationship to them. It reduces the legitimacy of national political institutions to define modernity.

So globalization necessarily changes the conditions of identity formation. Individuals in any society have multiple identities. Today, their *globalized identity* is defined in terms of the way that global markets value individuals traits and behaviour. It is knowledge-centred, but global markets value certain kinds of knowledge much more than others. As noted in the discussion of the changing market for skills, one major feature of global markets is that they place high value on scientific and technical knowledge and less on the kinds of local, artisan skills which serve more basic needs. The global market does not work well as a source of identity for everyone. Markets also increase material differences among individuals. So that even if the market creates a sense of community among those who share the same professional networks, it also continuously destroys communities, isolating individuals until they are able to find new networks and new sources of social worth. With the individualization of workers and their separation from 'permanent' jobs, even the identity individuals have with work-places becomes more tenuous and subject to more frequent change (Carnoy, 1999). Today's co-workers are not necessarily tomorrow's friends.

Globalization is not the only force changing modern culture. Important social movements have challenged globalization in favour of cultural singularity and local control over people's lives and their environment. Caught in between are the traditional mainstays of culture:

religion, nationalism, gender relations, and the power relations rooted in historical place. In Manuel Castells' words:

> They include pro-active movements, aiming at transforming human relationships at their most fundamental level, such as feminism and environmentalism. But they also include a whole array of reactive movements that build trenches of resistance on behalf of God, nation, ethnicity, family, locality, that is, the fundamental categories of millennial existence now threatened under the combined, contradictory forces assault of techno-economic forces and transformative social movements (Castells, 1997, p 2).

For those less successful in the global market place, the search for identity *turns in other directions, and does so more intensely than in the past*. When the search for other identities does not coincide with existing national territories, they also seek to redefine nationality. Ethnic identity is certainly one option. In sociologist Gören Therborn's words, "Affirming an ethnic identity amounts to discounting the present and the future for the past, to thinking and saying that the past is more important than the present ... Who your parents were is more important than what you do, think, or might become ... So, the less value the present appears to provide, the more important ethnicity, other things being equal" (Therborn, 1995).

Religious identity is another direction to which the less globally successful turn. Religious fundamentalism is on the rise worldwide. It rejects the market as authority, and although fundamentalist groups have targeted the nation-state as a power base, there is an inherent contradiction between religious fundamentalism and a territorially-defined nation. The same contradiction does not exist when it comes to local communities or to globalized movements for religious identity. But religious localism necessarily means communities based on exclusion. Even ethnic movements move away from their inclusionary focus. Rather than centring on nation-state legislative and financial intervention that *includes* the particular ethnic or race group in the *national* project, they now focus on cultural identities independent from the national project or seek recognition in global terms, *above*

nationality. The fastest growing self-identity group of the world's economically marginalized peoples is Muslim fundamentalists. Christian fundamentalism is an increasingly important movement, not only in the USA, where it appeals to working-class whites, but also in Latin America, particularly among the rural poor. Hindu fundamentalism is also mobilizing similar groups in South Asia. Such fundamentalism provides a new 'self-knowledge' that stands above market success. All the information you need to lead a fulfilling life is in the Koran or the Bible or the Torah. Fundamentalist beliefs do not exclude being successful in the market. But the appeal to fundamentalism is strongest for those who feel simultaneously threatened by the 'inclusiveness' of a multiculturalist version of welfare democracy (or even the authoritarianism of single-party state) that offers a bureaucratic vision of nationality, and the 'inclusiveness' of the global market that serves the power of money and complex information systems.

Cultural identity, whether religious, ethnic, racial, or gender, and whether local, regional or more global, is an antidote to the complexity and harshness of the global market as the judge of a person's worth. For nationalists, they are also an antidote to the globalized bureaucratic state. But such a trend could mean increased social conflict. If some localities/ethnicities/religious groupings feel increasingly excluded from the high end of the market, a weakened nation-state incapable of reincorporating them socially could mean less stability. Even though the political positions of various nationalist movements may differ considerably, they all tend to play to the sense for many of exclusion from participating in the fruits of globalizing national economies.

The market in itself has never been sufficiently inclusive. Strong undemocratic, non-egalitarian nation-states existed before the free market dominated economic systems, so many believe that states are no guarantee of inclusion. But the modern capitalist state developed into a successful market 'softener'. The decline of that role in the face of powerful global marketization of national economies pushes the 'dispossessed' to seek refuge in new and more *exclusive* collectives. These collectives generally do not have the power or the funds to help the dispossessed financially nor to develop the skills and knowledge valued by global markets. They can help develop self-

knowledge and therefore self-confidence. They can provide community and therefore a sense of belonging. They often do so by defining others as 'outsiders' without the 'true' self-knowledge or the 'right' ancestors. At the extreme end, the communities are often highly undemocratic. If the nation-state does not have the financial capability or the political legitimacy to dissipate such movements by incorporating its members into much broader notions of community and values, societies unable to maintain market success may face serious, unresolvable divisions.

Cultural identity movements do not only thrive among those dispossessed by globalization. Some cultural identity movements develop around a particularly *positive* relationship between globalization and the particular ethnic or regional group. The Catalans' push for greater autonomy from Spain, or the Lega's (northern Italians) demands for separation from Italy, or Slovenia's independence from Yugoslavia, emerge partly from these regions' (and their people's) sense that they are better global marketeers than those in the rest of the country. They want less financial and political responsibility for their less capable compatriots. The three regions mentioned feel closer to the economies of northern Europe and the new global economy than the rest of the country to which they are (were) attached. The fact that they also have a different 'culture' is the political basis for greater autonomy, but not necessarily the underlying reason. Globalization gives a new space to such movements because the locus of economic power and identity shifts away from the nation-state to regional and global economies. This allows for the re-emergence of cultural identities that are simultaneously ancient-local, rooted in tribal affiliations, and post-modern global.

The conflicts in identity formation necessarily affect education. The distribution of access to schools and universities, as well as educational reforms aimed at improving its quality, are all headed towards forming labour for a market conditioned by globalization. But, as argued above, education, through decentralization, privatization, and testing and evaluation, can become more inequitable rather then more inclusive. Thus, in any decentralization strategy, central governments must still assume responsibility for levelling the playing

field for all groups, or else the logic of decentralization (increased inclusiveness) will be undermined. This is particularly true because left-out groups see the education system as both crucial to knowledge acquisition, yet not serving the needs of their 'community'. Schools and the education system become primary targets for social movements organized around 'self-knowledge', such as religious or ethnic identity. The education system has enormous resources devoted to knowledge formation for dominant groups. Why should not education in a democratic society serve all groups, even those that differ markedly from the ideal of the new, competitive, globally sensitive worker? It is no accident that much of the struggle, for example, between religious fundamentalists and the secular, rational state, is over state education. The public sector has the funds to place children in an educational institution, but not the commitment to create a moral community. Instead, the state has succumbed to crass materialism on a global scale. Fundamentalists want to attract those who are not happy with their value in a world economy, and to educate them and their children in a way that will strengthen religious affiliation, not economic productivity. The more they succeed, the less the education system will be able to develop global-economy workers. Yet, at the same time that schools are the site of intense struggles over the definition of culture, they represent to those who are not included in the global economy the single most important route to access global culture. Minority groups may try to control the cultural norms purveyed by schools, but they often engage in such battles believing that their children should have a chance to learn skills valued by the global economy.

Decentralization of educational management to meet the goal of empowering regional and local social movements makes eminent sense when it is these movements that seek to gain control of the educational institutions that affect their children. In the case of Catalan and other regional movements to transfer control of Spanish education to regional governments, there was little choice for Madrid in the context of post-Franco Spain, but to move to a decentralized education system. Educational democratization movements in Brazil have pushed for more power for parents and teachers at the school. Again, decentralization of control could promote greater educational

productivity and a greater sense of community when it is communities themselves that want that control. It might also effectively assuage groups seeking greater self-identity through influencing the production of knowledge in schools. Whether or not this contributes to a multicultural alternative to globalized individualism remains to be seen.

In addition, pro-active movements, such as feminism and environmentalism, post-modern in their outlook and in direct conflict with globalization, are attempting to redefine the conception of 'global' in schools. For example, feminism is gradually shaping global culture to include gender equality and equity, first in education, then in labour markets. Environmentalism has had an enormous impact on global culture through environmental programmes in schools worldwide. These pro-active movements are having a major impact on how schools define new global culture and, in that sense, are most closely associated with challenges to the techno-economic definition of globalized culture. Schools are playing and will continue to play a fundamental role in this struggle. The inroads that the women's movement has made into the education system even in traditional Muslim countries reflect its power over the past generation to shape knowledge institutions at the heart of the globalization process. Even so, as the continued subordination of women in societies such as Pakistan and Afghanistan suggest, other anti-global movements rooted in male-dominated traditional culture see women's equality as a *global* notion, and oppose it as part of their resistance to globalization.

VII. Educational strategies for a global economy

Taking stock of almost 20 years of accelerated globalization and the impact it is having on education, this book attempts to distinguish the effects that stem from the 'objective' conditions of the new global, information economy from those associated with a particular ideology that stresses, in the globalized context, reduced public spending on, and management of, social services.

This analysis suggests that a major 'real' impact of globalization is to change the role of nation-states. Nation-states are becoming limited as direct *economic* actors and, as a result, are losing political legitimacy. But at the same time, nation-states, and regional and local governments, will depend increasingly for their legitimacy on their ability to **create the conditions for economic and social development**. In the new global economy, these conditions will depend increasingly on the way the state organizes the education system. **Because knowledge is the most highly valued commodity in the global economy, nations have little choice but to increase their investment in education.** Indeed, it is likely that in the next generation, knowledge formation will become the new locus of community formation, and schools will become the new community centres.

Obviously, every country faces a different set of initial economic and political conditions as it confronts the global economy in the information age. Some economies are mainly agricultural, and others industrialized, already transitioning to a service economy. Some countries have highly developed civil societies; others do not. So each situation demands its own particular strategy for educational expansion and improvement. But planners can draw a number of lessons from what we have discussed. The experience of the 1980s and 1990s provides four major guideposts for educational strategies.

- The state, whether it be national, regional, or local, will continue to be responsible for educational improvement and expansion.

This does not mean that government will manage all schools. But it does mean that education will continue to be largely financed publicly and that the public sector will continue to regulate education, set standards, decide how to allocate resources among levels of education, and initiate and guide educational improvement programmes. To the degree that it does so successfully, it will enhance the legitimacy of the state, whether central, regional, or local; to the degree that it fails to deliver higher-quality education in an equitable fashion, the state will lose even more power.

- There exists much more political and even financial space for governments to condition the way globalization is brought into education than is usually admitted. Testing and standards are a good example of this space, and decentralization and school autonomy, are others. States can provide schooling access more equally, improve the quality of education for the poor, and produce knowledge more effectively and more equally for all students within a globalized economy. Pro-active social movements are often supportive of such reforms. That states generally choose not to be responsive to more equitable versions of knowledge production is at least partly the result of ideological preference rather than helplessness in the face of new competitive pressures and new, globalized thinking. Although it is difficult to counter strong, worldwide ideological trends, and, indeed, the objective reality of financial globalization, a number of countries have produced positive educational results without reverting to greater inequality of access or devolution of public responsibility for quality educational delivery.

- A well-organized public administration will therefore be the key to educational improvement in the globalized economy. Economic growth and effective education in the global environment require physical capital investment, innovativeness, and technical capacity, but also ultimately depend on efficient, honest government.

- Teachers will continue to be fundamental to educational delivery, and the quality of education will depend largely on the quality of teaching and teacher effort. Just as in the rest of the global

economy, where knowledgeable workers are increasingly the key to the production of value, the knowledge industry (education) logically also will depend increasingly on the quality of its human capital (teachers). Obviously, parents are also important in any educational strategy, but most parents expect teachers to teach their children. If teachers are crucial, educational policy-makers will need to get a much clearer picture of who their teachers are, how they view their role in the system, and the type of incentives, regulations, and training that will increase their effort and improve their capacity to transmit knowledge to students.

Taking these four guideposts as the framework for educational strategies in the future, there are many choices to be made. *There is no one 'right way' to organize an education system in the next two or three decades, but there are certain objective realities that educational policy-makers should keep in mind as they move forward.* These points do not fall into the same category as the previous set because they vary across particular situations.

- Globalization increases returns to higher levels of education, hence pressure for more education and for more rapid expansion of higher-secondary and university education. Of course, in many countries with large rural populations, expanding and reducing drop-outs in primary education will remain a major concern. But even there, the pressure for expanding secondary education will increase. Two of the main issues for planners will be how to expand these more expensive types of schooling effectively and how to assure that access to higher levels is not limited to the already most advantaged groups in society. Privatization of the costs of higher education with well-run and ample scholarship programmes may be the most equitable way to achieve such expansion. Building two-tier systems of private and public schools, even when private higher education is for lower–income students, has had mixed results, at best.

- Because work will increasingly be organized around multi-tasking and workers will hold a number of different jobs during their work careers, planners should reconsider long-held views about

the balance between vocational and general education. As education expands to ever higher levels, the nature of different levels, particularly secondary, changes as well, becoming increasingly preparatory for post-secondary, and vocational education moves out of the secondary to post-secondary level. Both these shifts should alter the organization and objectives of secondary schooling.

- More job and even occupational changes for workers – increased flexibility – means that the education system will also need to become more flexible. The system will have to be able to accept more adults returning to take additional schooling in existing institutions or develop 'worker universities' that help prepare adults for new careers and provide them the skills for rapid changes in labour markets.

- Pressure will also mount for improving the *quality* of education at all levels. There is no evidence that decentralization or privatizing the management of education per se will produce significant improvements in the quality of schooling. Increased parent involvement can be important for better education, but, that said, devolution of control to parents or schools does not appear to bring forth significant new effort, technology, or resources that alter the way education is delivered. Rather, even if strategists decide to rely increasingly on privately managed schools, or decentralized public management (even to the school level), the public sector must take responsibility for reforms that will improve the capacity of teachers to teach effectively and administrators to manage effectively. These include better nutrition for children who go to school, evaluation systems that monitor student and teacher performance, teacher education reforms, increased and improved materials and low-cost textbooks available for all students, and clear curricular and performance standards that raise the bar on learning expectations. Thus, the wave of testing and evaluation brought on by globalization can have an important positive effect on educational quality when combined with an *activist* and well-organized public-sector effort to improve capacity for teaching and learning.

- Decentralization and local autonomy can be productive in response to local and regional movements for preserving identity and culture. But many of these movements are a direct response to *exclusion* from the global economy, and in those cases, the question will be whether local educational control will create increased social divisions or produce new, effective forms of educational and social inclusion. A flexible and generally inclusive education would allow for educational variation. Groups seeking self-identity organized around knowledge institutions may, in the longer run, redefine the meaning of globalization locally.

- Although there is little evidence that new information technology in schools increases school effectiveness or overall student learning, the technological revolution is still in its early stages, and the potential of computers and the Internet cannot be underestimated, particularly for connecting students to vast amounts of information. In the short run, technology makes distance learning possible at ever-decreasing cost. This has important implications, especially for secondary and higher education and teacher and worker training.

In sum, education will play an even more important role in economic and social development in the future than it played in the past. Despite urging from some quarters that decentralizing or marketizing education – that is, making education more accountable to parent-consumers – is the most effective strategy available to nations and regions in a globalized economy, the evidence suggests something quite different. National governments may decide to decentralize education to respond to ethnic, regional, or social movements demanding 'political' reform. But improving student learning or expanding educational opportunity requires coherent and systemic effort by the public sector. This usually means more, as well as more effective, public spending. Those nations and regions that can achieve such coherence are most likely to harvest the fruits of the information age.

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