

# PROSPECTS

quarterly review of  
comparative education

NUMBER ONE HUNDRED AND SEVENTEEN

## OPEN FILE



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INTERNATIONAL BUREAU OF EDUCATION

Vol. XXXI, no. 1, March 2001

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quarterly review of comparative education

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## EDITORIAL

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# BASIC EDUCATION IN THE TWENTY-FIRST CENTURY AND THE CHALLENGES FOR SECONDARY EDUCATION

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*Cecilia Braslavsky*

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It is usually agreed that enjoying the benefits of technical progress, avoiding its paradoxes and strengthening and modernizing ethics and politics in the context of globalization require skills such as learning how to learn, to be, to do and to live together (Delors et al., 1996). It is also commonly recognized that those who do not possess these skills will be doomed to lead a life of extreme poverty (Reich, 1991; Rifkin, 1996; Gorz, 1998).

Imparting these skills, however, requires more years and a higher standard of basic education than in the past.

Conceptually speaking, basic education is not in fact the same as primary education. It refers to the type of education needed for a better quality of life and for life-long learning in an increasingly complex and challenging world. Basic education conveys the notion of a 'base', a 'foundation', a 'construction and take-off platform'.

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*Original language: English*

*Cecilia Braslavsky (Argentina)*

Director of the International Bureau of Education. Graduate of the University of Buenos Aires; Doctorate in Philosophy, University of Leipzig (1979). Joined the Latin American Faculty of Social Sciences in 1982. Began lecturing at the University of Buenos Aires in 1986. Director of Educational Research and Development at the Ministry of Education and Culture in Argentina from 1994 to 1999. Began collaboration with UNESCO in 1982, taking part in several seminars in Latin America, Africa and Asia. Author of many books and articles on the quality of education, educational problems for girls and women, education in relation to politics and government, teacher training, young people, discrimination in education, the administration of education, multicultural education and languages.

If so, the number of years available in old-fashioned primary schooling is not sufficient to build this base.

On the other hand, improving the quality of basic education in this century implies aiming for a new type of education altogether, rather than an improved version of the education provided in former centuries. The theory that the extra time needed for basic education may be gained just by expanding the secondary education inherited in the twenty-first century is debatable.

Schools with rigid timetables, overloaded curricula with thirteen or fourteen subjects a year centred on information that students have to learn by rote, forty-minute lessons and uniform content for many different personalities do not offer suitable conditions, for instance, for learning to learn. If, in addition, the physical and didactic infrastructure of the education system is inadequate or poor, the situation will be even worse.

Families and the young people themselves are aware of both aspects. In order to obtain more time for basic training, they tend to opt to stay on in the education system, making a great effort in many parts of the world, with considerable success, to take advantage of the type of education that is on offer nowadays, namely secondary education. This effort is unsuccessful only in places where the process of deinstitutionalization (Castells, 1997) is extremely serious and affects the education system as well. In those situations, the youngsters tend to go for education provided by families or by parallel community networks of public and private schools.

However, the same families and youngsters, who are aware that a different type of education is needed—not the same as before or a ‘warmed up’ version—and who participate in secondary education where it is most developed, are showing growing dissatisfaction, which expresses itself in different ways. One of these is the violence of young people among themselves or directed against the principals and teaching staff of secondary schools. This violence is often met with increased supervision and even armed control.

A look back at the origins and main milestones in the expansion of secondary education may help us to understand this apparent paradox: access to secondary education is sought where it is not certain to be available and it is criticized everywhere, but more so where it is already well established.

The secondary education that has been passed down to the twenty-first century appeared in Europe after a long process that started in the twelfth century. Its great expansion, which began in Europe and continued in the United States and in the progressive countries of Latin America and Asia after the Second World War, has now spread to the whole world.

Seeking access to secondary education is a way of trying to obtain more years of basic education and to become part of the virtuous circle of social and economic development. It is a response to the perception of a world developing at two speeds and to the risk that those who fail to obtain more and better education will fall by the wayside.

The expansion of secondary education is, in turn, a response to this search for access and belonging, and very often—although not always—it amounts to a reflex response or the outcome of unsatisfactory bargaining with acquired rights.

It is a reflex response whenever it fails to challenge the institutional pedagogic model of secondary education. It tends to be forgotten that, as a form of education, it was developed in Europe on the basis of medieval institutions to meet the requirements of the modern industrial world. No thought is given to the fact that it expanded in conservative societies full of certainties and governed by powerful nation States.

It is an unsatisfactory response insofar as it does not give pride of place to a vision of the future and of the common good. In these cases, sectors with acquired rights linked to the current model will succeed in impeding its transformation (Meirieu, 2000).

But the modern industrial world was replaced by the dynamic of the knowledge society, and the certainties of the post-war generations gave way to feelings of uncertainty and risk (Beck, 1999). Also, the power of the regulating nation States has had to absorb the rise of local authorities and the weight of supranational organizations. In this new context, secondary education is losing its meaning.

In this new situation, the question arises as to whether the young people who are fighting so hard to prolong their years of basic education in places where there is still no secondary education should really be offered the same old model.

The origins of the different types of secondary school lie in the arts faculties of medieval universities. Those faculties were set up to prepare entrance to other faculties, particularly law and theology (Durkheim, 1992). Entry to the art faculties was an alternative and not a sequel to parish schools or—at a later stage municipal schools—which then turned into primary schools. Technical schools and certain aspects of vocational training in some European countries originated in the medieval system of apprenticeships. Entry to that system as well was an alternative and not a sequel to popular educational establishments for poor children.

The present system of secondary education, with its variations in different countries (such as *liceos* or technical schools) took shape partly alongside the tripartite economy (with its primary, secondary and tertiary sectors) of the first half of the twentieth century, and partly as a result of later reforms aimed at improving the quality of basic education against a background of economic growth, social redistribution of wealth, democratization and a concern for social integration and cohesion.

After the end of the Second World War, secondary education underwent considerable changes in Europe, the United States and other progressive countries, as a result of either public policies or institutional innovations or a combination of the two. For some analysts, those changes were a success, but not for most.

The thought then comes to mind—somewhat provocatively—that perhaps it might be time to ‘abolish’ secondary education altogether as a model, and to set up instead a new type of education system for young people, which would be better suited to their need for more years of basic education to impart the key skills required in the twenty-first century. If that case, the countries furthest behind in their ability to cater for the educational needs of their young people could find themselves before a unique opportunity.

In countries that lack secondary education there are clearly not the same barriers to the transformation of the old established form. Those countries can think in

terms of horizons, prospects, openings and opportunities for innovation. Of course, inventing such a new model would be no easy task. But if it comes about, we might witness unexpected advances in the processes of economic and social development and ethical and political progress.

The articles that make up the Open File on Secondary Education Reform in this issue of *Prospects* alternatively highlight current trends in the expansion or regression of secondary education, their interpretation in the light of the processes of economic and social development, and efforts to introduce change.

We have to go on exploring all innovations that may open the way to new models and the policies that go with them. In societies where work at home assisted by the new technologies has been spreading just as much as in those suffering from a shortage of job opportunities for young people, it is essential to create new models of educational care and social integration for those youngsters. Probably all that can be said for sure about such models is that they must exclude no one, that they must give due attention to every individual and that they must be served by adult professionals who are prepared to assume educational responsibility.

The sources that could be used for these innovations could include the critical appraisals and processes of reform and transformation of secondary education occurring in many of the countries where it was first developed, experiments with non-formal youth training, labour training schemes for beginners joining co-operatives and enterprises, and the dynamics of self-learning for young people using television and the new communication and information technologies.

The articles in other sections of this issue offer some analytical and forward-looking views that confirm the need to create new educational models not only for young people but for others as well

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EDUCATION IN THE

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CHANGING CONTEXT:

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NEW SOCIAL FUNCTIONS

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*Yogesh Atal*

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**The changing development scene**

More than half a century's development experience has occasioned critical scrutiny of development goals and the means used to attain them. The conferences held under the auspices of the United Nations in the last decade of the last century focused on assessment of the achievements and failures of the prevailing development paradigms. In particular, the World Summit for Social Development, held in Copenhagen in 1995, was a universal recognition of the world-wide crisis in social development. The gains in economic development, and even marked improvement in various indicators of modernization, did not resolve the crisis caused by the poverty, population and environment (PPE) spiral. In the report entitled *The state of the world's children 1994*, the United Nations Children's Fund (UNICEF) warned: 'There is a clear and growing danger that both present potential and past achievements may be overwhelmed, in the years ahead, by the growing crises of absolute poverty, rapid population growth, and increasing environmental pressures'.

The post-Second World War period was characterized by the twin processes of development and decolonization, fifty years of which have certainly led to remark-

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*Original language: English*

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able achievements. World-wide illiteracy figures have decreased; urbanization has spread; there is greater electrification; industrial growth has been stupendous; great advances have been made in science and technology; and the processes of globalization have changed the political and economic geography of the world. The decolonization process has created an indigenous elite, and encouraged people to assert their cultural identities. Development and decolonization have thus helped to link national societies to the wider world on the one hand, and generated in them a new sense of belonging to their own culture on the other hand. However, the modernization brought about by the operation of these two processes has been a mixed blessing, creating ambivalence between the global and the local. The homogeneous world dreamt of by the propagators of modernization has not come to pass. No doubt, we live today in One World, but it continues to have many voices and a multitude of cultures. All societies are increasingly becoming plural, and are facing the difficult task of managing multiplicity.

Such changes have made the world of 2000 different from the world of the 1940s. The beginning of the era of development gave rise to hopes for a global village that would eliminate social and cultural distance, and overcome geographical obstacles to make all destinations reachable with greater speed. To a certain extent, the present era of globalization—albeit spoken of more in economic terms with growing liberalization—can be viewed as a major indicator of the realization of that noble dream. But *only* to a certain extent. Knowledge has opened gateways of information, it has expanded cognitive horizons, and ideas and values are arriving in each cultural context along with material goods (including technology) from different sources. But these continue to be culturally screened, politically censored and suitably accommodated. Through a process of attrition and accretion, cultural maps of individual countries are becoming differently contoured. Not only has development influenced cultures, but also cultures themselves have actively played their role in determining development.

When the Third World entered the development phase, it was guided by external orientation. Men, materials, money, and even management of the polity—the four Ms of the development paradigm—had to be imported from outside to guide development. That situation, however, has changed radically. Thanks to the expansion of education, developing world countries now have trained manpower to replace outside expertise, and their resource base is growing larger; rather than being mere suppliers of raw materials, they have become producers of exportable materials. Financially, they are moving towards self-sufficiency, while still being dependent on official development assistance. Also, different models of managing the polity have emerged; however, although they all claim to be ‘democratic’, no single definition of democracy can be applied to the differing political systems. Even the earlier emphasis on economic development as the key to all other development is being questioned. It is now agreed that economic development should serve the cause of social development rather than be an end in itself. In other words, the hitherto practised paradigm of development has been rendered unworkable, and countries are now in search of alternatives.

The growing disenchantment with the outcome of development in the past five decades has initiated a process of rethinking. The collapse of the communist States has sent out the message that the socialist path is seriously flawed. Similarly, the crisis in social development in the non-communist developed world has shown that all is not well with that model. The Third World is caught up in a web of ideologies and is hard pressed to find a path for the future. Set recipes have failed. The world community is somehow coming to the view that while countries have common problems, there are no—and there can be no—common solutions. The slogan ‘Think globally, act locally’ was fashioned to suggest that societies will have to come up with culturally rooted and locally appropriate solutions to the problems they confront, and that it is in this task that areas of international collaboration will have to be identified. This is the changing context in which the role of education will have to be redefined.

## Education in the changing context

Education has undoubtedly played a major role in bringing about the momentous changes in world culture. The literacy profile of the globe has radically changed over the years. Currently, there are only seventeen countries—twelve in Africa and five in Asia—where adult literacy rates remain below 50%, and global literacy is approaching 80%. There are, however, still about 850 million adults in a world of 5 billion who live in the dark corridors of illiteracy, and most of these are in nine ‘giant’ countries. While the number of illiterates is enormous, their declining percentage is testimony to the success of our development effort. The Delhi Summit agreed to give priority to the eradication of illiteracy.

It is interesting to note, however, that despite the recognition of education as an important indicator of social development, the Preparatory Committee for the World Summit for Social Development did not originally include any specific commitment relating to education in the draft document to be adopted at the Summit. Not that it did not recognize the importance of education; but it was keen to propose a holistic approach to development to replace the sectoral approach hitherto used. The reference to education which it finally included was in a commitment that also dealt with health, culture and other related aspects. This was a reminder that education would have to develop new roles for itself in the changing environment. The Summit bade farewell to sectoral approaches and called for an inter-agency, inter-sectoral strategy for social development.

There is a clear recognition of the need for such an approach. But much remains to be done to ensure movement in that direction. Jacques Delors, Chairman of the International Commission on Education set up by UNESCO, was forthright in suggesting a sober approach so as not to oversell education. He wrote:

In confronting the many challenges that the future holds in store, humankind sees in education an indispensable asset in its attempt to attain the ideals of peace, freedom and social justice...[However] The Commission does not see education as a miracle cure or a magic

formula opening the door to a world in which all ideals will be attained, but as one of the principal means available to foster a deeper and more harmonious form of human development and thereby reduce poverty, exclusion, ignorance, oppression and war.<sup>2</sup>

Education must therefore rethink its strategies. It has become an ever-growing enterprise, not because of increasing enrolment ratios, but because of new demands being made on it by those already educated for re-entry into the system in order to learn new skills and for the continuous updating of skills and information. Education has moved from the classes to the masses, involving students from different socio-cultural backgrounds, whose parents differ in terms of their own schooling. The school system has to deal without delay with the twin problems of the fast-growing student population and the exploding frontiers of knowledge. Educationists must think of the future of education and of education for the future.

In today's world it is not enough to eradicate illiteracy. Education has equally to be concerned with those who are now classed as literate and who constitute 80% of the world's population. On the one hand, societies will have to halt the entry of people into the category of adult illiterates by ensuring the enrolment of the whole school-age population, and on the other hand, they will have to meet the demands of the literate population for more and higher education. Also, this education has to be relevant, provide employment and be socially productive.

Education today has assumed a broader meaning. The concept of education in the primitive world was virtually non-existent. It was merely the other name for socialization and enculturation. The family and the local community performed the function of the school for the new arrivals by inducting them into the culture. Basically, it was a transmission function—passing on culturally learnt behaviour to the younger generation. The home was at once the place for child care, learning and work. Socialization prepared children for entering the culture and the world of work. The *Weltanschauung* of primitive people was limited to their immediate cultural environs. It was with the growing differentiation of society that the family and the place of work became separated. In the more advanced oriental societies such as India, the *ashramas*—hermitages where the sages resided in order to meditate—performed the functions of the school. Learning there was basically cultural and religious, or in the art of warfare for princes. The concept of the school, in the present sense of the term, was introduced only after contact with the West, which is now called the North. The colonizers established schools to train people in non-traditional knowledge. It is this knowledge that formed part of modern education. The primitive societies of the unlettered thus came to be described as illiterate, which signified their closed world-views and ignorance about things modern, i.e. Western. While socialization meant transmission of traditional knowledge, education became a vehicle for transmission of knowledge from abroad. Of the three functions of education now universally acknowledged, the non-Western world was exposed only to knowledge dissemination; very little was done to involve the indigenous population in the generation of new knowledge (i.e. research) and in the use of knowledge. The purpose of modern education, provided by the colonizers, is best expressed in

an oft-quoted passage from Lord Macaulay, who said that the goal of modern education in *India* was 'to form a class who interprets between us and the millions we govern; a class of persons, Indian in blood and colour, but English in taste, in opinions, in morals and in intellect'. In that transitional phase, both the illiterate and those who learnt in traditional centres of learning were relegated to the ranks of the 'uneducated', and those who received a modern education through the new institution of the school became the *litterati* and came to be identified as the intelligentsia. So small was their number, and so limited were their skills, that no distinction was possible between intellectuals and the intelligentsia. It was with the growth of schooling and the introduction of higher education that such a distinction became meaningful.

When the colonies started to become new nations, with the withdrawal of the colonialists after the Second World War, they enthusiastically adopted strategies to hasten the process of development, treating the North as the positive reference group. This was the time when the North itself had to rebuild itself from the ruins of the war. It was thus a period of reconstruction of the North, and of development of the South. In both situations, education had primacy: as a programme of cultural reconstruction, the North had to rebuild its educational institutions that had been destroyed by the ravages of war; and as a development goal, the South had to improve its literacy profile by learning the three Rs—reading, writing and arithmetic. This dual task was entrusted to UNESCO, and it guided UNESCO's programmes and activities in subsequent years.

Long years of sustained work by this lead agency have changed the education profile of the globe. No longer is there a need for a programme of reconstruction for the North, and increasingly only a smaller percentage of illiterates will have to be made literate in the countries of the South. The problem now is how to handle the new sets of demands being generated by rising literacy rates, and to equip our institutions of higher learning to respond to the challenges of the future.

In the field of education, we thus have a more varied agenda: to attend to the unfinished tasks of eradication of illiteracy and universalization of primary education; to respond to the new demands being made on the education system in individual countries and world-wide for secondary and higher education, vocational education, and research in a number of areas—not only science and technology but also the social sciences; and to anticipate future demands and prepare our education structures to meet them.

## **Educational development: net balance of consequences**

In deciding the future social roles of education, it is necessary to see what expectations education has been able to meet and what unintended consequences have resulted that are a cause of concern for society.

One major failure of our effort has been the continuing existence of illiteracy in the world. While the percentage of illiterates has declined significantly, their actual numbers have increased. The world total of adult illiterates, and of school-age chil-

dren not yet enrolled in schools, is as large as the total population of present-day India. Making them literate is in itself a stupendous task. But a more difficult task is to contain the growing revolution in expectations among the literate and the educated. Existing systems have failed to provide the necessary space for the burgeoning number of students who wish to pursue their education beyond the primary and secondary levels. Having generated a desire for learning, and assigning high values to education, the existing infrastructure of education finds itself unable to accommodate all aspirants. Despite securing high grades in examinations, a number of students are denied access to the higher levels of learning. Nor are there enough jobs in the market to absorb them. Education has thus transformed the 'uneducated unemployed' into the 'educated unemployed'; in fact, many employed persons among the 'uneducated' turned to education in the hope of finding more dignified and better-paid jobs, and in the process were rendered jobless.

While extravagant claims are being made with regard to the role of education in eradicating poverty, empirical data from a wide variety of societal settings suggest that the relationship between poverty and education is much more complex. For example, world statistics indicate that the number of people below the poverty line stands at 1.3 billion—and is continuously rising—while the number of adult illiterates is around 850 million. Thus, even if all illiterates are classed as poor, there is still a sizeable number of the poor among the literates. More disturbing is the fact that in the Eastern European countries, which during the communist era denied the existence of poverty, there is an open acknowledgement of the scourge of poverty. These are the countries with almost 100% literacy, which had boasted of total employment in the previous era.<sup>3</sup> Poverty is also prevalent in the countries of the developed world. Both these instances suggest that *in spite of* (perhaps not *because of*) education, a person can fall into poverty.

It is may be noted that together with the increasing levels of literacy and education, the past decades have witnessed the phenomenal growth of religious fundamentalism, corruption in high places, drug addiction, and even AIDS in highly educated societies, as well as the simultaneous growth of both feminism and prostitution. Education has nurtured revivalist tendencies and fostered the 'return to roots' movement, and cultural and ethnic identities are being created at sub-national levels, thus giving rise to social disharmony.

Changes brought about by scientific and technological advances have also created newer crises. Advances in medical sciences have reduced death rates and increased longevity but failed to curb birth rates, and have thus contributed to the population explosion; while industrialization has caused environmental pollution, the depletion of renewable sources of energy and global warming. The industrial systems have encouraged the centralization of populations in urban areas, which has led to the growth of mega cities and the relative neglect of rural areas. Advances in transportation and communications have increased mobility and encouraged migrations not only from the rural hinterland to metropolitan centres but also from developing countries to the developed countries. These large-scale international migrations have made all societies multicultural. They have created what I have

called elsewhere *sandwich cultures*<sup>4</sup>—migrant cultures sandwiched between the twin pressures of the parent culture and the host culture.

Education systems are being challenged by their clientele. Dissatisfaction is expressed by both students and potential employers. In an ever-changing economic situation, where the private sector is increasingly becoming the key employer of talent, the kind of education that is still imparted in schools and colleges is regarded as not very relevant. When the degrees awarded by the universities do not secure jobs, students rightly feel disillusioned. One consequence of this in India, for example, has been the suspension of convocation ceremonies. Convocations had become occasions for students to demonstrate their anger about the futility of degrees in the face of growing unemployment. With convocations gone, graduates now receive their degrees through the post. Universities have become hotbeds of politics where there are more political protests and strikes than classroom teaching or lively academic seminars and discussions. Even research-minded academic staff have started leaving the campus to join off-campus research institutes. This is not to suggest, however, that there is no longer a desire for learning. While formal institutions of learning have a deserted look, students crowd the surrogate institutions created in the private and informal sector to provide job-related training in specially designed sandwich courses. Such institutions charge heavily and yet operate at full capacity in several shifts without the politics that characterize the universities.

The following comment made by the Government of the Republic of Korea at the Asia-Pacific Economic Cooperation (APEC) meeting held in Seoul in 1997 is very relevant in this regard:

The emphasis on education for itself or on education for good members of a community without a large emphasis on preparation for future work is no longer appropriate. Such a view of education and work cannot be justified in a world where economic development is emphasised. [...] At present, in many economies, the education systems do not sufficiently reflect labour market conditions. Their inflexible and inefficient education systems could not meet the new economic environmental challenges.

There is a definite need to reorient our education. And this reorientation should be guided by two related factors: preparing the young for the future, and preparing the education systems to meet the demands of the future. The existing base for launching such an exercise is outlined below.

1. *The emerging educational profile.* The base of the literate and the educated today is much broader. Although differences exist in the literacy and educational profiles of different countries, what is common to them is the fact that each country has substantially improved its educational profile in the last fifty years with the result that today there are more literate and educated people in each society. There has been a visible growth in the indigenous intelligentsia and skilled personnel in almost all societies. The implication is that the demand for outside expertise is declining more and more. This is clearly reflected in the changing orientation of various projects funded by the United Nations, where

the foreign manpower component is being reduced as governments opt to implement them with their indigenous expertise.

2. *Migration of talent.* There is a noticeable trend, generally referred to as the 'brain drain', for skilled workers from the developing countries to move to other countries—not only to the developed countries of the West but also to other countries, particularly in the Middle East. Large-scale migrations from the developing Third World have made the societies of the North multicultural. The children of migrant families living simultaneously in two worlds—of a sandwich culture—pose different schooling problems.
3. *Growing inability of schools to accommodate growing numbers of students, and inadequate state support for education.* While there is concern at illiteracy rates and poor enrolment in schools, there is also a developing crisis of the failure of institutions of learning to accommodate ever-increasing numbers of students. Inadequacy of buildings, shortage of teachers, non-availability of teaching materials and equipment for classrooms and laboratories, and inefficient educational administration, now characterize education in most countries. Associated with this is the fact that most governments allocate less than 4% of their gross domestic product to education despite the rising demand and the recognition of the role of education in modernization and development. Much more disturbing is the fact that while the demand for higher education is growing, thanks to the success of literacy programmes and primary education, governments allocate a very small percentage of their paltry education budget to higher education.
4. *Rise of surrogate institutions.* To fill the void, surrogate institutions have come into being outside the formal education system. They provide short-term courses, and sandwich courses, and prepare students for various admission tests and competitive examinations. Charging enormous fees, these institutions are making profits and highlighting the redundancies of the conventional system of education. To quote Hirtt:

Because of the dearth of public spending, students are increasingly looking to private education. In the US, there is a trend toward 'home schooling'—children no longer attend school and are taught at home. Traditional public education is also coming in for strong criticism. Employers complain it is not geared to their needs and is not flexible enough. Schools in Europe are integrated into a centralized public system run by a bureaucracy that slows down the process of change or makes them impervious to demands for change from outside.<sup>5</sup>

5. *Alternative sources of funding.* Hirtt believes that under pressure from economic interests, a process of 'deregulating' education systems has begun. He thinks that 'the time for out-of-school education has come [...] the liberalization of the educational process thereby made possible will lead to control by education service providers who are more innovative than the traditional structures'.<sup>6</sup>



All this should be seen in the context of recent advances in science and technology, particularly the revolution brought about by information technology. This revolution has seriously challenged the *definition of literacy*. On the one hand, it has made the conventional definition of literacy redundant: it has made it possible for people to learn many things without knowing the alphabet, or even the language.<sup>7</sup> At the same time, the new technology has created new forms of illiteracy. Today's literates will be tomorrow's illiterates if they do not become 'computerate'.<sup>8</sup> *Incomputeracy* has already become a new form of illiteracy. In this sense, it is important to recognize that illiteracy, understood in the conventional sense, may no longer be an impediment to learning. We might also have to take measures to eradicate the new forms of illiteracy among the literates.

Education, which performed the socialization function in the past, has assumed the new responsibility of socializing people for the future. The role played in the primitive world by the family and the larger kinship group was taken over by the formal school in non-primitive societies. But today this role is increasingly being shared by several other agencies in both the formal and the informal sector, and by governmental and non-governmental organizations outside the conventional education systems. In such a situation, the monopoly of the ruling elite in determining the goals and content of education has been severely curtailed. The role set of a learner is greatly enlarged. There are persons other than teachers who have joined the ranks of the tutors; there are spaces other than the school and the classroom that provide the arena of interaction between the teacher and the learner; and there are sources other than the officially produced textbooks that offer opportunities for widening the knowledge base. Geographical distances between the teacher and the taught no longer obstruct their empathic proximity.

## New functions for education

Social development strategies require accelerated efforts in order to complete the unfinished tasks and also to take corrective measures to deal with the negative consequences of past development strategies. If some of those consequences are attributable to the prevailing education system, that system cannot be expected to undo them. The cause of a crisis cannot be its solution. This is not to deny the importance of education; what is being emphasized is that the *kind of education* that has been imparted so far has contributed to the continuation and to the emergence of social crises. Thus, what is needed is to change the *kind of education*—its content, its emphases, its functions and the modalities by which it is imparted. To develop such a strategy, which has to be country-specific, it will be necessary to take into consideration changes occurring in both in society and education nationally and internationally. The intermeshing of these two variables is shown in Figure 1.

The changes/developments in society may be located in terms of (i) changes in social demography; (ii) changes in the knowledge base; (iii) changes in the economy; (iv) environmental changes; (v) political development; (vi) changes in cultural values and attitudes; (vii) social reforms and revolution; (viii) changes in the world order,

FIGURE 1. Matrix of changes occurring in education

Educational dimension [E] $\Psi$	Societal dimension [S]	
	National [N]	International [I]
National [N]	EN/SN	EN/SI
International [I]	EI/SN	EI/SI

such as globalization and liberalization, and the collapse of the Soviet Union; and (ix) the emergence of supranational epigenetic structures. Similarly, developments in education may relate to (i) educational demography, i.e. the student population's size and composition, and the teacher population; (ii) the educational administration; (iii) educational policy; (iv) changes in the education sub-system—institutional growth, administrative arrangements and governmental control; (v) funding sources and resource allocations; (vi) educational needs; (vii) pedagogy and educational technology; and (viii) the knowledge explosion. Changes in the two domains at the international level affect all societies, and their response to them is guided by the changes in the two domains at the national level. A national programme of education has to come to terms with the universal trends in the light of the specifics of the society in question, but it must not become parochial. It cannot divest itself of the growing sophistication. Being relevant to the culture does not mean going back to the corridors of history and the closure of all openings. Good education must not uproot people, but also it must not insulate them from the winds of change. In the changing circumstances, education must emphasize the process of knowing rather than familiarizing oneself with the known; it must be generic rather than overly specific, or else it will shelter obsolescence; and it must train the mind in an interdisciplinary—even a transdisciplinary—framework so that the learner is exposed to holistic principles of organization of knowledge. The Delors Commission has recognized this new need and recommended the strengthening of the four pillars of education—learning to know; learning to do; learning to live together, that is learning to live with others; and learning to be. Education is now seen as a process of learning throughout life.

In addition to socializing the young in the culture of the community, education is now seen as an agency to prepare for the future. This is a complex and difficult task, as the forces of change require societies to move into unknown futures or futures of those forces' making. Education has provided the capacity not only to look into the past of one's culture and live in its reflected glory, but also to compare the position of one's society in relation to other societies of the world—far and near—and to decide whether to be like any of them or remain different and yet changed. Furthermore, it has equipped people to predict and anticipate the future and, more important, to design their own blueprint for a future society.

## The challenge ahead

The forces of globalization and liberalization are impacting on different aspects of society, including education. While the institution of the State has not been questioned, its limits are being recognized. Today's citizens are simultaneously becoming oriented to the system to which they belong, and to the wider world. It is the twin pressures of the endogenous and exogenous forces that are shaping the vision of our future. In thinking about change, we are becoming distanced from the earlier theories of unilinear evolution, which suggested a *staircase* approach which was later transformed into an *escalator* approach—although you have to go up the same stairs, you could be propelled to climb faster. The 'doubling period' index was one such measure to suggest how far societies are moving ahead but in the same direction. The thinking on the future done in the last two decades has changed this orientation. It is now accepted that we have to think of the future in plural terms. The future of the globe will consist of the plurality of futures of individual societies. And these 'futures' may not correspond to the futures of our imagination today. Recent advances in communication and information technology have nullified the staircase theory by introducing the concept of *leap-frogging*. All societies are simultaneously preparing themselves for the changes that are rapidly occurring in information technology. To quote a familiar example, Microsoft's version 2000 is arriving at the same time in all societies, and none is required to go through the previous versions of Windows or Microsoft Word to switch over to their new versions.

The developments referred to above suggest that education will have to prepare a mindset for unlearning and continuous learning. While the past may remain as an important reference point, in the sphere of learning the confluence of several factors is necessitating discontinuity with it. We will have not merely to prepare the next generation to face what we know and can anticipate, but also to nurture in it the capacity to cope with the uncertain future. Education is called upon to provide the people with the tools to facilitate their adjustment to the new dynamism of societies rather than succumbing to despair and disillusion.

What we need in the changed circumstances is a new vision of development—a vision that puts humankind in the middle and not on the margins. It is acknowledged that the poverty, economic dislocation, communal violence and political conflict that we witness today are partly—if not mainly—the result of past policies and development strategies that tended to neglect the human dimension. We also faltered on the ecological front by ruthless exploitation of the environment, causing serious ecological imbalances. We allowed our economics to overwhelm our sociology and ecology. We became sectoral in our approach and forgot the basic fact that cultures are not just the sum total of their parts but are integrated wholes, and that, therefore, any changes introduced in one part of the system inevitably have their repercussions and ramifications in the rest of the system. We continue to make the mistake of treating education as a closed system, undermining its interfaces with the world of work and with the realms of culture and polity.

There is a primordial relationship between education and culture. Education has to continually assess the demands made upon it by society at large, and must respond to them rather than continue to transmit outmoded skills and outdated information. The development imperatives, as well as the changing economic and technological environment, provide the context within which the agenda for education of the future ought to be drawn up.

Education thus faces a new challenge. The rapidly changing world scene already provides inklings of the future. Education must inform our todays with foresight of the tomorrows rather than hindsight of our yesterdays. We need to look forward. Let our past be our guide, and let our future be our inspiration.

It is time to initiate a fresh examination of our education system and develop a new agenda not only to tackle our present-day problems but also to meet the demands likely to be made on education in the coming years. To be sure, this is an enlargement of the role of education and not a replacement of the roles it has hitherto played. Education will continue performing its socialization and enculturation function, and making its contribution to the betterment of the present, but it is now called upon to participate in designing a desirable future.

The eradication of illiteracy is a major challenge, but its solutions will have to be sought in the context of each country. The programme will have to tackle not only the traditional forms of illiteracy but also the new illiteracies that are being created among the literates. Illiteracy eradication and universalization of primary education will create demands for secondary and tertiary education, and also for new forms of vocational education. The challenge to provide 'Education for All' is not a simple matter of just serving up a certain number of years of schooling through the quantitative expansion of educational opportunities for all sections of society. It is equally important to ensure the provision of quality education that is both relevant and helpful in improving the quality of life. It is in this respect that the Education for All decade that began with the 1990 Jomtien Conference is described as a 'collective failure'. Not only have we been unable to prevent the numbers of illiterates from increasing, but also there are as many as 125 million children of primary-school age who have never been enrolled in school, and another 150 million children who have not completed their primary education. We have failed in eradicating adult illiteracy, in school enrolment and in providing better learning. Despite strong commitments expressed by governments, state expenditure on education is abysmally low, which accounts for poorly trained teachers, crumbling infrastructures and non-relevant teaching materials. While all this has to be improved—if we regard education itself as an indicator of development—education systems will also have to prepare themselves for the new social roles of generation of new knowledge through relevant research, dissemination of research findings, and creation of an appropriate setting for knowledge- and information-based societies with their own blueprints for their futures.

Unlike in the past, the functions of education may in the future be taken up by a wide variety of structures, thus making the education system open up, and allowing school surrogates and college equivalents to share the responsibility for educat-

ing the coming generations. The future schools of the developing societies cannot be seen as a carbon copy of the present-day schools of developed societies. The time has come to halt the process of transplantation of institutional structures and teaching contents from one setting to another. This is not, however, to recommend insulation in order to prevent innovations that come from outside. The need is carefully to evaluate each innovation, irrespective of its source of origin, before its acceptance or rejection.

We must seriously re-read Illich's *Deschooling society*<sup>9</sup> as we engage ourselves in *retooling* our societies.

## Notes

1. In December 1993, India hosted the Summit of the Nine Most Populous Countries of the World—the 'giants'—under the joint auspices of the United Nations Educational, Scientific and Cultural Organization, the United Nations Children's Fund, the United Nations Population Fund and the United Nations Development Programme to discuss the problem of Education for All in those countries. These countries were Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan (five from Asia, and two each from Africa and Latin America).
2. J. Delors, 'Education: the necessary Utopia'. In: *Learning: the treasure within*, Paris, UNESCO, 1996, p. 13. [Report of the International Commission on Education for the Twenty-first Century.]
3. See: Y. Atal, ed., *Poverty in transition and transition in poverty*, Paris, UNESCO; Providence, RI, Berghahn Books, 1999; also: Y. Atal, ed., *Perspectives on educating the poor*, New Delhi, Abhinav Publications, 1997.
4. Y. Atal, Outsiders as insiders: the phenomenon of sandwich culture, *Sociological bulletin* (New Delhi), vol. 38, no. 1, March 1989, p. 23–41.
5. N. Hirtt, Will education go to market?, *UNESCO courier* (Paris), February 2000.
6. Ibid.
7. On one of my several visits to China, curiosity made me turn on the television in my hotel room. Knowing full well that I would not be able to understand a word, I was sure that I would soon turn it off. But I saw a programme where the host was showing the audience how to mend a damaged audio cassette. Although I could not understand a word, I watched his demonstration and learnt the 'how-to-do' of repairing a cassette. Language was no barrier.
8. I coined this word in my article for the *Encyclopedia of the future*, New York, Simon & Schuster Macmillan, 1996, vol. 1, p. 40.
9. I. Illich, *Deschooling society*, New York, Harper & Row, 1971.

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# REFORM OF TVET

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## FOR THE

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## CHANGING WORLD OF WORK

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*David Wilson*

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### **Introduction**

Technological innovation and globalization 'drive' the reform of secondary and post-secondary academic education and technical and vocational education (TVE). New technologies are changing the world of work and require dramatic changes in Technical and Vocational Education and Training (TVET). These include innovative manufacturing processes: robotics, mechatronics, rapid prototyping and nanotechnology. Resulting changes in education and training include multi-skilling, cross-training and the education of knowledge workers.

Transforming the workplace from a productive or service orientation to a knowledge-based—'learning'—enterprise necessitates educating knowledge workers to use logical abstract thinking to diagnose problems, research and apply knowledge, propose solutions, and design and implement those solutions, often as a team member. A concomitant requirement is transforming teachers from those who impart knowledge to those who facilitate learning.

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Globalization of trade, finance and production, in which money, goods, services and jobs are moved from high-cost to low-cost nations by multi-national corporations (MNCs), has an equally dramatic effect upon TVET. The capacity to generate and use knowledge is becoming the keystone of international competitiveness.

The information age also affects education and training by using modern 'information and communications technology' (ICT) to manipulate and manage information. The 'knowledge society' identified by Peter Drucker resulted from a 'paradigmatic shift from an industrial economy to one shaped by knowledge, information and the [new] communication technologies' (Menzies, 1998). Can TVET adapt quickly enough to changes in the world of work?

## Globalization

Many writers use the term 'globalization', but few bother to define it. *Globalization* is 'a process that widens the extent and form of cross-border transactions among peoples, assets, goods and services, and that deepens the economic interdependence between and among [nations]' (Lubbers, 1998).

The challenges facing all nations in a global economy require increased attention to TVET since most individuals may change careers three to five times during their lifetimes—each career change requiring new knowledge.

Large MNCs move production to countries offering the cheapest labour and often less stringent labour and environmental laws. Nations capable of competing successfully are those investing in worker training and adult and continuing education. Countries perceived by MNCs as having the type of well-educated labour force that meets their requirements are those to which production may be relocated in the future.

In turn, rapid technological change and globalization exercise significant influence upon TVET. Learning has become lifelong and its foremost skill has become learning how to learn. The task of TVET is to ensure that countries have the desired trained labour force.

## Setting the scene: definitions

TVET refers to education and training that prepares persons for gainful employment (Finch & Crunkilton, 1999). TVET can take place either in formal schools (i.e. kindergarten through Grades 10–13), increasingly in post-secondary community and/or technical colleges, or informally by means of workplace training. Many TVE educators favour the integration of academic and technical/technological curricula. The education and training of knowledge workers suggests this integration will predominate in the twenty-first century. This is because learning technological concepts requires a sound foundation in mathematics, science and communications skills, and also an understanding of technology.

The terms 'education' and 'training' also deserve elaboration. Essentially, the goal of education is 'to create independent problem solvers [with] sufficient depth

of understanding'. In contrast, the goal of training has been 'to teach people to follow prescribed procedures and to perform in a standardized manner' (Gray & Herr, 1998). What has taken place in the changing world of work is a convergence between these two, formerly distinct, points of view. This convergence is quite important for the future of education, particularly TVET.

Jacques Delors wrote that 'the concept of learning throughout life [...] emerges as one of the keys to the twenty-first century'. He noted that the concept 'goes beyond the traditional distinction between initial and continuing education [and] meets the challenges posed by a rapidly changing world' (Delors et al., 1996). Another trend is enrolment of recent university graduates at community and technical colleges, to add occupation-specific credentials to the bachelor of arts degrees that have not led to employment (Wilson, 1998*a, b, c*). Since many of these (mainly liberal arts) graduates choose TVET courses at community and technical colleges, this trend—called *reverse transfer*—demands attention.

## Technological change

Alvin Toffler (1981) identified three ages—or 'waves'—in world history. Toffler's first wave was the *agricultural revolution* from about 8000 B.C. to 1700 A.D. In my opinion, Toffler should have included an earlier hunting and gathering wave preceding agricultural development. Initially, agriculture consisted of subsistence production because families, clans and tribes consumed what they produced. Later, agricultural production first became a family farm enterprise and during the past half century has become 'industrialized', with increasingly large farms producing surpluses for consumption by people engaged in other occupations.

What Toffler also neglected considering is that these waves overlap in time—and space—because while certain geographical areas may remain in a hunting and gathering stage at certain periods, other geographical regions at other periods may have evolved into settled agriculture and/or animal husbandry.

Toffler's second wave is the *industrial age* from 1700 to 2000. A major characteristic of the industrial age is separation of goods production from consumption (Tjaden, 1995). It is possible that the end of the second wave will result from the impact of nanotechnology in two to three decades. *Nano* means one-billionth and *nanotechnology* concerns devices that are a few billionths of a metre in size. Nanotechnology, or the 'manipulation of individual atoms and molecules to build structures to complex, atomic specifications' (Miller, 1999), is likely 'to invent devices that manufacture at almost no cost ... [which will] [...] allow automatic construction of consumer goods without traditional labor' (Drexler, 1992).

Toffler's third wave began in the United States in the mid-1950s, when 'white-collar and service workers outnumbered blue collar workers' (Tjaden, 1995). The third wave comprises the transition to the *information age*. Toffler's paradigm appears simplistic because what actually seems to be happening is the merger of attributes of these so-called waves.



Lewis Mumford described the *neo-technic revolution*, or creation of new technology by institutional research and development (Mumford, 1970). This 'revolution' began with initiatives during the Second World War and the 'space race' to apply scientific research to military (and later consumer product) development. This has changed the nature of work and the form and function of education and training. Education seems to be keeping pace with technological change, since the United States 'is second only to Canada in the percent of its adult population (39.8%) attaining post-secondary education' (United States, National Governors' Association, 1998). By a different measure—the proportion of 18-year-olds entering post-secondary education—the Organisation for Economic Co-operation and Development (OECD) ranked Japan highest, with 62% in 1995 (OECD, 1998).

A central feature of the neo-technic revolution is that employees work in a mechatronic environment, using highly precise, electrically powered mechanical equipment, increasingly commanded by sophisticated computer programs (Wilson, 2000). I believe this constitutes the merger of industrial processes and information. The mechatronic environment requires workers to possess multiple skills, learned by cross-training, or training in more than one 'traditional' specialization—such as training in repair and maintenance of both mechanical and electrical/electronic aspects of industrial robots (Wilson, 1997a, b).

## The changing workplace

The global distribution of these technological innovations has made an impact upon the world of work and, in turn, upon education and training. Another important development is the flattening of levels of management, resulting from the elimination of several management layers in organizational hierarchies—reduced from as many as eight to as few as three. This resulted in the 'empowerment' of workers, previously viewed—and treated—by management as operatives performing repetitive tasks. In the reformed workplace, employees are encouraged to communicate with management, make input into decisions, and solve problems. Therefore, the type of worker required has changed from one merely following orders to knowledge workers, and firms have become 'learning organizations'.

Industrial-age enterprises focused on mass production, using machinery to perform a single, often repetitive, activity and workers' actions were also repetitive. Industrial-age technology involved many different manufacturing steps producing components for assembly. These work processes required workers to follow very strict procedures and 'any notions the workers might have for changes to these procedures [were] of little interest' to management (Tjaden, 1995). The role of traditional management was to 'define the production process', and ensure that procedures were followed. 'The most efficient way to organize a system for controlling large numbers of production workers who should only follow instructions is a hierarchy' in which 'control information flows only from the top toward the bottom, while information about results flows from the bottom up' (Tjaden, 1995).

The United States National Governors' Association (NGA) Center for Best Practices observed that:

for [...] most [...] of the twentieth century, the vitality of the United States economy was determined by the success of its major manufacturing industries—automobiles, steel, oil, and chemicals [...] and] for most of this century, the United States economy was a relatively closed system. Few Americans looked to the world as a venue for opportunity or competition. Most United States products were destined for [US] markets, and between 1929 and 1970, combined imports and exports averaged only 9.5% of the GDP (United States, NGA, 1998).

In contrast, Canada, Japan, Germany and the United Kingdom have had a significantly greater global outlook and, I believe, were 'ready' for globalization. In 1996, about 60% of Canada's goods and services were exported and 74% of the 1996 economic output originated from those exports (Wilson, 2000). World-wide, 'growth in exports between 1970 and 1993 was on average 1.5 percentage points higher than [the growth] of the gross domestic product (GDP)' (Delors et al., 1996).

Table 1 indicates the changing percentage of employment by economic sectors between 1960 and 1998 in the United States, Canada, Australia, Japan, France and Germany. The significant decline of participation in agriculture from 1960, and the commencement of the decline of the importance of industry and manufacturing from 1980, while the service sector steadily increased in importance from 1960 to 1998, are trends that reinforce the transition to the information age.

Information-age enterprises are 'organized around the flow of information, rather than the flow of things' and 'depend on knowledge workers as [their] key labor force, rather than manual laborers or service workers who perform highly repetitive, simple tasks'. In 1971, only one in sixteen Canadian jobs was knowledge-intensive; however, by 1996, the ratio was one job in eight (Wilson, 2000).

A central issue for information-age enterprises 'is improving the productivity of knowledge workers, and reducing the dependence on service workers. The "re-engineering" movement is really aimed at doing so by producing new process knowledge'. The structure of these organizations 'is very flat' with 'a common information infrastructure to which all have equal access. Co-ordination of activities is achieved through the free flow of information', called 'common control management' (Tjaden, 1995). Table 2 compares key characteristics of industrial- and information-age enterprises.

The most important asset in an information-age enterprise is *knowledge*, rather than capital. While capital remains an important input, knowledge 'can be used to obtain capital, or any other needed assets' (Tjaden, 1995). Menzies notes that 'the acceleration of change itself (organizational and technological) [...] and the related acceleration in *obsolescence* have greatly increased the *innovation* component of production' (Menzies, 1998). Since 'knowledge is the means of production', and this knowledge 'resides with the knowledge workers', it follows that 'the owners of the company do not own the means of production, as they do in industrial-age companies' (Tjaden, 1995). Drucker's 'knowledge society' involved a 'paradigmatic

TABLE 1. Percentage employment by sector (1960–98)

Year	Sector	United States	Canada	Australia	Japan	France	Germany
1960	Agriculture	8.5	13.3	n.a.	29.5	23.2	13.9
	Industry	33.4	32.0	n.a.	28.5	37.5	46.0
	Manufacturing	26.1	24.7	n.a.	21.7	37.5	34.4
	Service	58.1	54.7	n.a.	41.9	39.3	40.2
1970	Agriculture	4.5	7.6	8.1	16.9	13.5	8.5
	Industry	33.1	29.8	34.6	35.7	38.4	48.7
	Manufacturing	26.4	22.3	24.4	27.4	27.8	n.a.
	Service	62.3	62.6	57.3	47.4	48.0	42.8
1980	Agriculture	3.6	5.4	6.5	10.1	8.5	5.2
	Industry	29.3	27.4	28.6	35.1	35.1	42.9
	Manufacturing	22.1	19.7	19.4	25.0	25.8	34.0
	Service	67.1	67.2	64.8	54.8	56.4	51.9
1990	Agriculture	2.9	4.2	5.6	6.9	5.6	3.5
	Industry	25.1	23.7	23.7	33.9	29.1	38.9
	Manufacturing	18.0	16.0	14.9	24.3	21.3	31.6
	Service	72.0	72.1	70.7	59.2	65.3	57.6
1998	Agriculture	2.7	3.8	5.0	5.2	4.4	2.9
	Industry	22.7	22.3	21.1	31.6	24.3	34.0
	Manufacturing	15.8	15.7	12.8	21.4	n.a.	n.a.
	Service	74.6	73.9	73.9	63.2	71.4	63.1

Source: Adapted from United States, Bureau of Labor Statistics, 1999, p. 25–28.

TABLE 2. Key characteristics of industrial- and information-age enterprises

Industrial-age organizations	Information-age organizations
Mass production	Mass customization
Labour serves machines or tools	Tools and machines serve labour
Labour performs repetitive tasks	Labour applies knowledge
Command and control management structure	Common control management structure
Capital-intensive	Knowledge-intensive
Capitalists own means of production	Labour owns means of production
Capital is the primary driver	Knowledge is the primary driver

Source: Based upon Tjaden, 1995, p. 11.

shift from an industrial economy to one shaped by knowledge, information and [its] associated communication technologies' (Tjaden, 1995).

Menzies writes that the new knowledge-based economy and society resulted from the *digitization of information*, which affects a broad range of work activities, 'from resource processing and manufacturing to services and bureaucracy' and the *reorganization and restructuring of work*. She notes that 'modules of work, and related knowledge are digitized know-how (software) [which] can be de-institutionalized from bricks and mortar institutions in local geographic communities, and re-institutionalized or reconstituted anywhere along the increasingly global network of digital communication networks through [...] ICTs (Menzies, 1998). This suggests that ICT has merged with globalization to accelerate a change process that has been in operation for some time—even if it went largely unnoticed. The pace of this acceleration was described as follows:

Traffic on the Internet has doubled every 100 days and Internet commerce among businesses will likely surpass \$300 billion (U.S.) by 2002 [...]. The Internet is growing faster than all other technologies that have preceded it. Radio existed for 38 years before it had 50 million listeners, and TV took 13 years to reach that mark. The Internet crossed the line in just four years (*Toronto Star*, 1998).

Table 3 shows increasing Internet usage in the top fifteen nations, and ranks nations by the percentage of their population 'on-line'.

TABLE 3. Global Internet usage

Percentage of population on-line			Internet usage by rank		
Rank		%	Rank		Net users (thousands)
1	Sweden	44.3	1	United States	110,825
2	Canada	42.83	2	Japan	18,156
3	Finland	40.89	3	United Kingdom	13,975
4	United States	40.65	4	Canada	13,277
5	Denmark	40.43	5	Germany	12,285
6	Iceland	39.23	6	Australia	6,837
7	Norway	38.01	7	Brazil	6,790
8	Australia	36.37	8	China	6,308
9	Switzerland	28.05	9	France	5,696
10	Hong Kong (China)	27.06	10	Republic of Korea	5,688
11	New Zealand	25.29	11	Taiwan	4,790
12	Singapore	24.43	12	Italy	4,745
13	Belgium	24.17	13	Sweden	3,950
14	United Kingdom	23.64	14	Netherlands	2,933
15	Taiwan	21.66	15	Spain	2,905
	World-wide	> 5.00		World-wide	259,000

Source: Campbell, 2000.

## **'Virtual' organizations**

Menzies offers 'a new organizational paradigm' of *virtuality* 'to describe the ability of a person or corporation to establish a virtual presence anywhere at any time through digital connections—that is, through the transfer of electronic documents, proprietary software business firms and electronic funds, via a computer, a modem and a jack in the wall or satellite hook-up'. The concept of *telework* was noted as resulting in 'being able to take the office anywhere in the world through the Information Highway' (Menzies, 1998).

The so-called virtual corporation is touted as 'the dominant world industrial order of the 21st century', and will comprise 'inter-firm alliances [which] link different parts of different corporations in parallel research, product-development and other activities for different periods of time'. Their 'integration is electronic', permitting 'close project-centred cooperation to ensure the life of the project'. Such a virtual corporation will be staffed by a 'global contingent labour force so that technological and human-capital modules can be plugged into any collaborative combination for work along the Information Highway at minimal start-up costs to the company involved'. This description appears to incorporate just-in-time concepts from the industrial age, a 'quick-response' capability and a focus upon 'connectivity' (Menzies, 1998). These organizational structures appear to have taken the concept of outsourcing to new lengths.

The down side of globalized telework involves MNCs recruiting semi-skilled data-entry workers and technical personnel to write computer software code in low-wage nations and communicating with them by satellite transmission of data. This could easily be called 'new colonialism'. Further, call centres, handling outsourced product ordering, customer service and technical support functions, are also being relocated to low-wage regions of developed nations.

## **Workers in the information age**

What type of workers will be required by this emerging form of organization? The knowledge worker is likely to be the upper-echelon worker whom Homer-Dixon called *symbol analysts*, and contrasted with low-echelon workers called *hamburger flippers*, as 'ever more intelligent' technologies work 'their way up the skills hierarchy' (Homer-Dixon, 1996). This bifurcation of the labour force has been taking place for over a decade.

Canadian employment data indicate that jobs for workers with less than a high school diploma declined by over 25%, while jobs for those with post-secondary education (at the community/technical college and/or university levels) increased by 26% during the 1990s (Wilson, 2000). In 1995, while the national unemployment rate was 9.1%, the unemployment rate for high school graduates was 14.1%, but only 5.1% for university graduates (Wilson, 2000). While the overall unemployment rate declined to 6.8% in January 2000, the unemployment rate for youth aged 15–24 only declined from 15.7 to 13.2% (Statistics Canada, 2000).

The total unemployment rate in the United States was 4.0% in January 2000, but 16–19-year-old youth unemployment only declined from a high of 14.6% to 12.6% and from 10.4% to 9.3% for those under 25 years of age in 1999 (United States, Bureau of Labor Statistics, 1999). ‘Income distribution [...] widened dramatically in the 1980s, with workers having only a high school education or less suffering dramatic declines in real earnings and those with a four-year college education roughly holding constant,’ according to the National Science Foundation (1999).

Between 1980 and 1997, the United States ‘lost some 43 million jobs through downsizing and other structural changes [...] called “sunset jobs”, [...] while] 71 million new (“sunrise jobs”) jobs have been created [...] in industries that have a future’. However, while ‘38% of young men with high school diplomas were employed in 1979 in better-paying manufacturing jobs [...] now, fewer than a quarter of young men with that education level have such jobs’. A longer trend line indicates just how dramatic the bifurcation of the labour force has been along lines of educational attainment. ‘Some 60% of all jobs in the U.S. in 1950 were unskilled’ but the figure has ‘shrunk to about 25%’ in 1997 and was projected to ‘shrink further to 15% by the year 2000’ (Holstein, 1997).

The NGA wrote that ‘job growth in the new economy has become more polarized into two dimensions: high-skill, high-wage, technical and professional jobs that tend to be full-time with generous benefits and low-skill, low-wage, service jobs that are often part-time with few benefits’ (United States, NGA, 1998).

The picture in the European Community is even more striking, with youth unemployment (15–19 years of age) in the United Kingdom at about 18% in 1995, declining by 1998 to 6.3%. Unemployment among ‘low-skill workers’ in France was 20% and youth unemployment (15–19 years of age) rose from 22% in 1993 to 25% in 1995 and to 26.5% in 1998 (OECD, 1998).

It is ironic that this disproportionate rate of youth unemployment and the increasingly credential-specific bifurcation of the labour force co-exist. In Canada, unemployment among youth with lower levels of educational attainment co-exists with annual deficits of up to 250,000 information technology and electrical/electronic engineering positions (Wilson, 2000). A similar equation exists in the United States where the Information Technology Association of America estimated in 1997 that ‘high-tech companies need 190,000 new workers and can’t immediately find them’ (Holstein, 1997). The ‘traditional’ International Labour Organization pyramid also appears to have undergone flattening, as the educated upper echelons expand and the less-educated lower echelons contract.

## **The dilemma facing today’s youth**

Today’s youth face the dilemma of preparing for jobs in a rapidly changing labour market. The NGA noted that ‘to succeed in the new economy, workers must be prepared to enhance their skills and make a commitment to lifelong learning’. Increasingly, ‘workers will need to acquire new skills and be prepared to constantly reinvent themselves’. This is because today’s youth will probably change jobs—and

careers—three to five times during their working lifetimes and may work for as many as twelve to fifteen different companies (Lu, 2000). The bottom line is that ‘those who enhance their skills will experience wage growth; those who do not will experience wage stagnation or even real wage decline’ if not protracted unemployment (United States, NGA, 1998).

The days when a high school drop-out can find long-term employment in agriculture, fishing, forestry, industry, mining or even the service sectors in most developed nations are rapidly coming to an end. The transformation of these sectors into knowledge-based sectors suggests future farmers, fishers, foresters and miners will require at least fourteen years of education to operate computer-controlled agricultural, fish-finding, mining, manufacturing and timber-cutting equipment. This need for technological literacy in nearly every occupational area also implies that workers will need increased educational attainment and continuous learning (Wilson, 2000).

TABLE 4. Unemployment rates by age (1998)

Ages	United States	Canada	Australia	Japan	France	Germany
16–19 years	14.6	20.0	20.0	10.9	n.a.	8.3
> 25 years	10.4	15.2	15.2	7.8	26.5	9.7
20–24 years	7.9	12.3	11.9	7.2	n.a.	10.4
< 25 years	3.4	7.0	6.2	3.6	10.7	9.4
All ages	4.5	8.3	8.0	4.1	12.2	9.4

Source: United States, Bureau of Labor Statistics, 1999.

Do current secondary and post-secondary students receive an education enabling them to benefit from the continuous learning required in the workplace? An examination of secondary school curricula in selected nations suggests performance varies considerably. While preparing the background paper for the reform of the technological education curriculum in Ontario, I examined secondary school technology curricula from several nations and other Canadian provinces. Undoubtedly, the New Zealand curriculum is exemplary and the curriculum in British Columbia is also very good, but the design and technology curriculum in the United Kingdom seemed disappointing (Wilson, 1997a, b).

Students in many countries are disadvantaged compared with Japan, with four high school mechatronics courses. In Canada mechatronics is only taught at community and technical colleges (Wilson, 2000). While mechatronics and cross-training were developed in Japan, development was based upon concepts originally conceived by W. Edwards Demming (1986) and others in the United States, but largely ignored in North America until it was too late.

This message has apparently not been lost, since subsequent innovations in productive processes, like rapid prototyping (or rapid manufacturing), have been developed in North America. This new technology produces models and prototype parts from

three-dimensional computer-aided design (CAD) by digitizing systems, known as computer-assisted manufacturing (CAM) (Flint, 1998). This new technology has the potential to displace the tool and die industry. Since the beginning of the industrial revolution, most products fabricated from metal (and later plastic) have been stamped or shaped from dies produced by hand by a highly skilled worker, known as a tool and die maker. Rapid prototyping can fabricate either dies or prototype models directly from CAD software by means of several processes that fabricate the item from paper, acrylic or powdered metal raw materials. Canadian community and technical colleges are now introducing courses on rapid prototyping (Wilson, 2000).

Since it is highly likely that most readers of this article have never heard of either rapid prototyping or nanotechnology, it is safe to assume that neither have most secondary and post-secondary students. Yet I am impressed by the number of teachers and students who know the 'creator' of nanotechnology, physicist Richard Feynman, whose book, *Surely you're joking, Mr. Feynman* (1985), has been read by several generations of science and technology students. Then again, how many people took note of Albert Einstein's concepts when they were first articulated nearly a century ago?

As educators our dilemma is how to get the message to students about the science and technology of the future and the future of work. It is ironic that books conveying a negative image of the future of work, like Jeremy Rifkin's *The end of work* (1995), become best sellers, while less sensationalistic accounts of existing developments that will actually affect the workplace remain virtually unknown.

Actually, reality is probably even worse! While the majority of today's youth are aware of some applications of technology—particularly those embodied in computers—they do not seem to have much exposure to 'cutting edge' technology. Only exemplary science, mathematics and technology teachers seem capable of motivating their students. While researching the Ontario Technological Education curriculum document, I placed inquiries on four technological education computer list servers. A secondary school technology teacher in Oregon, whose classes built robotic manufacturing devices using obsolete electronic components for a local industry, contributed one exemplary project. This is the type of dedicated and motivated teacher that we can only hope will teach our children.

Further, it is highly likely that a lack of knowledge and motivation pervades the guidance and counselling profession. The OECD noted that 'too often the education and training that [students] are participating in fails to motivate or interest them, and its connections to working life are too tenuous'. In addition, 'too many do not receive either real learning opportunities in work settings [...] or effective information and guidance to help them to chart their futures' (OECD, 1998). Where do today's students—tomorrow's workers—get their career information and guidance?

It is not difficult to speculate that what little career information contemporary students receive is obtained from their peers, the media, and whatever they are reading or accessing on web pages. Leaving such important functions to chance is, in my opinion, an abrogation of our responsibility to future generations as educators—and parents.



Yet career information is available—in a ‘user-friendly’ form—from many governments. *Job futures*, developed by Human Resources Development Canada, provides print and on-line occupational and career information, as does the United States Bureau of Labor Statistics. It may be asked whether this available career information is being used, and if so, by whom.

## The nature of ‘new’ jobs

Early predictions that computers would displace millions of workers have yet to materialize. Thus far, information-age technology may have created considerably more jobs than it has displaced. The *restructuring* of the workplace, as the result of technological change and globalization of production and commerce, has been traumatic particularly for workers with lower levels of educational attainment. The nature of enterprises in which workers are employed has also changed, as have the terms of their employment.

Even though ICT is changing the production of goods and services, such production will continue and workers will still be required in these enterprises. A Canadian Auto Workers Union official noted that ‘even in this so-called information economy, people don’t eat information [...] don’t wear information [...] don’t build [their] house out of information’ (Stanford, quoted by Lu, 2000). However, the employer–employee relationship is changing:

New, streamlined business structures have significantly changed the traditional employer–employee contractual relationship. The tenure of employment is declining, especially for younger workers, and more firms are using part-time and temporary workers who receive few or no benefits. Job security has eroded. Career ladders within a single firm—the traditional path to higher wages—have narrowed or disappeared entirely (United States, NGA, 1998).

Advances in productivity have transformed most occupations during the past half-century. It is far easier to document occupations with decreased demand than to predict the occupations for which demand is likely to increase. It is feasible that Rifkin’s ‘end of work’ is less likely to materialize in the near future. It must be recognized that although demand for many occupations has diminished, few are likely to disappear entirely.

However, the size of many occupations has shrunk—for example, in 1900 farmers constituted the largest component of the labour force world-wide, but ‘farming as an occupation is now a negligible portion, about 3% in developed countries’, according to Drucker. In addition, while ‘blue-collar workers grew phenomenally in the first half of this century [...] [and constituted] by the mid-1950s an actual majority of the working population in the U.K., [...] Germany, [...] Japan, and at least two-fifths of the total [...] in the U.S. [...] in the last 40 years they have declined equally rapidly [...] and by the end of this century, they will have shrunk to one-eighth’ (Drucker, 1994). Table 1 showed these changes for six industrialized nations.

In 1960 in the United States, ‘[m]anufacturing employment was about 25% of

the work force' but fell 'to about 16% by 1990' while the total workforce doubled. In 1973 manual labourers accounted for 21.4% of all workers, but were only 15.5% by 1995 (Tjaden, 1995). Further, by the 1990s 78% of jobs in the United States were in the service sector (Wentling & Palma-Rivas, 1997). In contrast, employment growth took place among 'managerial and professional workers—including everyone from business executives to computer scientists', who by 1995 were '27.4% of workers, up from 19.7% in 1973' (Tjaden, 1995).

In spite of declining numbers of employees, productivity in the agricultural and manufacturing sectors increased because new technologies raised economic output by reducing the number of hours worked. This means that technological change has reduced the number of workers needed in 'traditional' fields, while employment growth has been in the newer ICT sectors requiring advanced TVET.

The nature of education has also changed because 'an educated person will become someone who has learned how to learn, and throughout his or her lifetime continues to learn, especially in and out of formal education' (Drucker, 1994). Drucker also writes that 'the individual knowledge worker will also have to learn [...] how to switch from one kind of team to another; how to integrate one's self into a team; what to expect of a team, and in turn, what to contribute to a team' (Drucker, 1994). This is what I call 'the quintessential adult learner'. In addition, the role and function of the teacher must change from that of the 'traditional' didactic deliverer of knowledge to his/her students to that of the facilitator of learning *on the part of* his/her students.

The National Science Foundation noted that 'comparisons with other countries, notably Japan, that had growing productivity based, at least in part, on very different organization of human resources in the firm' attributed these changes to 'innovations, such as self-managed work teams, pay-for-knowledge, flexible specialization, continuous learning', etc. (United States, National Science Foundation, 1999).

## Conclusion: some available solutions

It is clear that initiatives to keep today's youth in school are necessary to attain the fourteen (or more) years of education for entry to the labour force in the information age. The OECD noted that 'the transition from initial education to working life has been a long-standing policy priority among OECD members, since the oil shocks of the 1970s first gave rise to concerns about youth unemployment'. It further noted that 'the transition from initial education to work is a key stage in laying the basis for continuing progression in learning and work throughout adult life, and improving young people's immediate labour market prospects' (OECD, 1998).

Several exemplary programmes have been successful. I believe the 'TechPrep' model in the United States has reduced high school drop-out and increased participation in post-secondary education. TechPrep creates a seamless transition between the last two years of high school and the first two years of community and/or technical college (Wilson, 1997a, b). TechPrep programmes articulate courses in mathematics, science, communication and technologies between the two levels of educa-

tion. This removes barriers that previously required many students to repeat high school courses in community and technical colleges, and led to frustration and drop-out. Beaumont noted that articulated programmes enable entering Grade 9 students 'to see an educational plan that will carry him/her through high school and towards their ultimate goal' (Beaumont, 1995).

The OECD cited provision 'of a highly flexible system, such as the Australian TAFE colleges and Canadian community colleges [...] [at] which those in the labour market can develop their skills as employment opportunities and personal aspirations change' (OECD, 1998).

Another effective initiative in the United States and Canada has been co-operative education at the secondary and post-secondary levels. The OECD noted that 'this form of initial contact with the labour market is a major feature of transition processes in North America and Australia, as well as in some Nordic countries'. They also noted that 'Canadian efforts to develop co-operative education both at the secondary and tertiary education level demonstrate the difficulties which educators have to overcome in order to mobilize sufficient numbers of employers' because 'less than ten percent of secondary students in Canada'—'and only about four percent in Quebec'—are enrolled in co-operative education (OECD, 1998).

The OECD examined 'transition from initial education to working life' and identified this transition as a 'key stage in laying the basis for continuing progression in learning and work throughout adult life'. They noted that 'the problems of those who leave education early, without a qualification, remain serious, even if rising educational participation has reduced their absolute numbers'. They concluded that 'many young people are unsure of how to benefit most from the diverse pathways available to them' (OECD, 1998).

The OECD study methodology employed typologies, or 'ideal types', to compare two TVET systems: 'those countries in which relatively open labour markets value generic employability attributes, rather than specific occupational qualifications', and 'those countries in which occupationally organized labour markets and institutionalized, "holistic" vocational education pathways form the framework for very many young people's transition to work, and in which tightly woven safety nets are available for those who fall through the cracks' (OECD, 1998). Examples of these typologies are Canada and Australia, with 'more open labour markets', and training systems which emphasize 'the development and provision of so-called core skills or key competencies', and Germany, Austria, Switzerland and Denmark, which have 'strong apprenticeship traditions' and often 'express strong reservations about the development of modular qualifications systems, seeing them as having the potential to encourage young people to leave education too early with qualifications that are too narrow or too incomplete' (OECD, 1998).

The study notes that 'in countries that have a long tradition of a strong vocational education sector, efforts to raise the status of vocational education typically concentrate on the development of highly demanding vocational pathways at the upper secondary level [...] [which] confer occupational qualifications at the skilled worker or technician level, together with entry level qualifications for tertiary educa-

tion'. These 'so-called "double qualifying" pathways' are increasing in Austria, where 'participation [...] is currently close to 25% of the cohort' (OECD, 1998). The German 'dual system' also appears to be differentiating upward to the post-secondary level by offering double qualifying pathways leading either to post-secondary technological education at *Fachhochschulen* or to university entrance.

The Norwegian strategy 'to reduce the incidence of early [school] leaving', combines local follow-up and monitoring services, individualized mentoring, emphasis on early reintegration in education leading to a qualification, availability of education, training and employment options tailored to individual needs, integrated delivery of employment, local education and training and welfare and social services, and income support policies which require at-risk youth to actively engage in education, training or job search, and which discourage unemployment or inactivity. The introduction of 'vocational pathways [that] have not previously provided access to tertiary study' in Norway in 1994 'now enable[s] students in the vocational pathways to qualify for both work and tertiary study' (OECD, 1998).

Finally, some aspects of the youth unemployment problem are abating as the result of a variety of factors, including government initiatives and decisions on the part of many youth to remain in school beyond the age of compulsory school attendance. 'In Australia participation has risen in tertiary education among those over the age of 19'. 'Between 1989 and 1996 the proportion of 15–24-year-old Canadians attending education on a full-time basis increased by nine percent, reaching 57% in 1996'. In contrast to this 'four percent rise for 15–19-year-olds', the 20–44-year-old age group rose by 11% (OECD, 1998). The OECD noted that 'as educational participation has risen, the absolute number of teenagers who are unemployed has fallen, and as a percentage of the age group the number of young people under the age of 20 who are looking for work is now quite small in most OECD countries' (OECD, 1998).

These trends suggest that the upward differentiation in educational participation, which colleagues and I predicted, is taking place. Deferred labour market entry and increased upper secondary and post-secondary participation by the 15–19- and 20–24-year-old age groups are accomplishing some of the objectives suggested earlier in this article. I identified desirable international competencies for the new millennium that are also appropriate for youth facing the challenges of the information age and globalization (Wilson, 1998a, b, c). They are:

- *Personal competencies:*
  - ability to communicate effectively;
  - tolerance for ambiguity; and
  - demonstrated leadership.
- *Technical-professional competencies:*
  - problem-solving;
  - up-to-date technical knowledge;
  - negotiation skills; and
  - strategic thinking/planning ability.
- *Inter-cultural competencies:*
  - the ability to operate in other cultures;

- international job experience; and
- language capabilities.

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# OVERVIEW:

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## SECONDARY EDUCATION

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### AT THE CROSSROADS

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*Rupert Maclean*

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#### **The importance of secondary education in a changing world**

As countries make strenuous efforts to achieve universal literacy and primary-level education for all, while at the same time expanding and improving the quality of their systems of tertiary education, for many nations secondary education has become the weakest link in the education chain.

As the UNESCO *World education report* (2000) on 'the right to education' clearly demonstrates, primary education has expanded significantly in many developing countries since the 1950s, and this has resulted in a significant increase in gross enrolment in secondary education. However, as access to secondary education has expanded, its overall quality has often been in decline as resources have been stretched thin and systems have become more inefficient.

There is widespread agreement as to the need for a fundamental re-thinking of the role and place of secondary education as part of the re-engineering of education systems, since most countries recognize the priority of secondary education,

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*Original language: English*

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not only as an indispensable link in the whole education system but also as an area of particular importance to youth. At the World Education Forum held in Dakar in 2000, the matter of what happens after primary education was raised as being an important issue in a number of regions where secondary education is now regarded as forming part of basic education. At the Dakar Forum, a Roundtable on 'After primary education: what?' discussed the reform of the secondary education curriculum.

In fact, the education of adolescents is a matter which is of considerable concern to developed and developing countries alike. For instance, in a 1999 study the OECD put the proportion of 16- to 19-year-olds not attending school and not employed at 19% in the United Kingdom, 14% in Italy and 13% in Spain.

In addition, major regional and international conferences, such as the 1998 UNESCO-ACEID International Conference on Education, on 'Secondary Education and Youth at the Crossroads', have repeatedly stressed the urgent need to upgrade, diversify and expand education at the secondary level in order to respond to the consequences of the expansion of basic education and to challenges posed by rapid changes occurring in society and the world of work.

## **Overview of current issues and concerns regarding secondary education**

A review of the research literature on secondary education reveals that a number of key issues and concerns are emerging regarding the renewal and diversification of secondary education and the education of youth, which many countries are now seeking to address. Put briefly, these are:

1. *Secondary education for all?* As was stressed at the recent World Education Forum in Dakar, in an increasing number of countries basic education is being redefined to include secondary education, at least at the middle school (junior secondary) level. For many, secondary education is now regarded as part of basic education and EFA.
2. *Expanding access:* As countries achieve universal primary education, there is pressure to increase opportunities for access to post-primary education for the larger numbers of individuals completing primary education. World-wide, in terms of enrolment ratios, secondary education is the fastest-growing sector of formal education.
3. *Reducing drop-out and repeater rates:* In many countries, rising enrolments are accompanied by an increase in academic failure, as evidenced by high rates of repeating and drop-out. For example, every year almost a third of pupils in Latin America repeat a grade, which wastes valuable human and financial resources. Action is being taken to overcome this problem through such means as the reform of teacher training, financial assistance to students and their families, and innovative experiments in group work, team teaching and the use of the new information and communication technologies.
4. *Equity:* There is an increasing emphasis on ensuring that all sections of soci-



ety, regardless of their gender, socio-economic background, race, ethnicity, cultural characteristics or geographical location, have an opportunity for access to a high-quality secondary education. One reason is that if some of those who successfully complete primary education are denied access to a high-quality secondary education, equality of opportunity and equity will be denied.

5. *Quality assurance:* All are concerned to ensure that expanding access to secondary education is not at the expense of the quality of programmes. In fact, there is an increasing realization that access and quality are different sides of the same coin, since if access to primary education is expanded without this education being relevant and of a high quality, high drop-out rates will remain, which in turn undermines the move to expand access and reduces the internal efficiency of systems. In addition, it is important to develop effective systems for monitoring and evaluating the learning outcomes achieved, both to measure the success of the programmes mounted in achieving their aims and also to provide feedback information that can contribute to improving the programmes offered. This monitoring and evaluation is equally important from the macro (systems) level through to that of the micro (individual classroom) level. Quality assurance also draws attention to teacher effectiveness, and the importance of offering a reward structure that enables the most talented and appropriate individuals to be recruited into the profession, and for them to be provided with cutting-edge, career-long professional development.
6. *Importance of good teachers:* Countries believe that teachers are the cornerstone of educational development and that (as the Delors Report puts it) 'good schools require good teachers'. Teachers are at the forefront of the process of educational reform, since the quality and effectiveness of any education system ultimately depends on the quality and nature of the interaction that occurs between learners and their teachers. A major problem that exists in many countries concerns attracting the most suitable, talented people into secondary school teaching, since those who have the qualifications and qualities to become good secondary schoolteachers are precisely the ones who are most in demand by other industries, as they are likely to be university graduates or to have other post-secondary qualifications. To enable the quantitative expansion and qualitative improvement of secondary education to occur, there is a demand for greater numbers of high-quality recruits to the teaching profession. Much more therefore needs to be done to provide incentives to attract (and keep) suitable individuals in secondary school teaching.
7. *Improving the relevance and effectiveness of the content of secondary education:* Many believe there is a need to improve the relevance of the content of secondary education with regard to curriculum and teaching methods to accommodate the changing needs of society, individuals and groups to meet the challenges of the twenty-first century. The curriculum should be enriched and brought up to date so as to reflect the increasing globalization of phenomena, the need for intercultural understanding and the use of science to foster sustainable human development. Another important issue being addressed concerns

the content and approaches of secondary education not exclusively (or mainly) being seen as a preparation for those who plan to go on to university, but also being designed to adequately meet the non-academic needs of those who do not have higher education aspirations.

With regard to *curriculum content* it is widely believed that more needs to be done to improve the effectiveness of the bridge between education and the world of work, including a greater stress on enterprise education and what has come to be called 'the vocationalization of secondary education'. For example, marginalized youth need short-term skills training that leads to income generation. As the Delors Report points out, vocational training also has to reconcile two divergent goals: preparation for jobs that exist at the present time and the capacity to adapt to jobs as yet not even imagined. There is also a view that curriculum content should address key social concerns and issues in areas such as civics education and also health, with particular reference to education about HIV/AIDS and drug abuse. In addition, the matter of values education is moving higher and higher up the agenda of educators around the globe, a fact which needs to be reflected in the content of secondary education. By improving the relevance of the content of secondary education it is believed that this will help to reduce the problem of student drop-out and improve both the internal and external efficiency of secondary education.

With regard to *teaching methods* it is widely held that there is a need to move away from mainly using those methods which stress teacher-centred approaches and rote learning to instead utilizing a greater repertoire of more learner-centred (and learner-friendly) teaching and learning approaches which foster the development of intelligence, creativity, lateral thinking and independent learning. Teaching approaches also need to place greater emphasis on the tools for seeking and processing knowledge, rather than on the actual knowledge itself.

8. *Utilizing most effective modalities for delivery:* There is agreement on the need to adopt a wider range of delivery systems in addition to conventional schools, to reach those who are currently unreached, such as low-income groups, those in remote areas, street children and the like. Formal education systems should be reinforced by non-formal practices and various modes of delivery, such as distance education.
9. *Effectively harnessing existing and new ICTs:* Many are exploring ways of cost-effectively utilizing the new information and communication technologies (ICTs) to improve access to and the quality of secondary education. This is not just for those attending conventional schools and classrooms (with regard to, for example, the use of computers and the Internet) but also to harnessing the new information technologies (such as satellite communications) in a cost-effective way to reach those in remote areas who seek access to secondary education.
10. *Financial considerations:* The expansion and qualitative improvement of secondary education cannot be realized without adequate financial support and so the finance of secondary education is an issue of crucial importance.

The provision of secondary education is generally more costly than is the provision of education at the primary level (particularly where this secondary education includes technical and vocational education), and there are considerable pressures in many countries to expand the provision of secondary education. A number of matters are being considered in this regard, such as private versus public funding of secondary education, developing partnership arrangements with employers with regard to cost-sharing, and devising ways of ensuring that limited resources are put to the best possible use so as to improve the internal efficiency of secondary education.

## Special importance of the Delors Report

The Report of the independent International Commission on Education for the Twenty-first Century, *Learning: the treasure within* (Delors et al., 1996), has special relevance for the education of youth and secondary education.

The Delors Report examines the real achievements and possibilities regarding what education (including secondary education) can and should do in preparing individuals to live in rapidly changing societies. The realities of contemporary change clearly call for new approaches to learning. The Commission addressed this issue by looking at the ultimate aims of learning and what this might mean in terms of the content and organization of schooling. It proposed that education be based on four pillars. Giving equal weight to each of these pillars would result in a substantial reorganization of the priorities of what and how we teach throughout our schools and education systems.

The authors of the Delors Report argue that young people, who are living in what for many is a turbulent, rapidly changing world, need values-oriented anchors, and the knowledge, skills and understanding that will enable them to find effective ways of coping with the tensions, pressures and contradictions that are apparent in their societies, and in their daily lives. When it comes to examining the renovation, renewal and diversification of secondary education, with particular reference to meeting the educational needs of youth, the Delors Report raises some important points and provides a helpful conceptual framework for analysing and guiding the content, organization and management of secondary education reform and the education of youth.

In Chapter 6 of the Delors Report, in a section called 'Secondary education: the crossroads of life', the authors note:

Many of the hopes and criticisms aroused by formal systems seem to focus on secondary education. On the one hand, it is often regarded as the gateway to social and economic advancement. It is accused, on the other hand, of being inequalitarian and not sufficiently open to the outside world and, generally, failing to prepare adolescents not only for higher education but also for the world of work. In addition, it is also argued that the subjects taught are irrelevant and that not enough attention is paid to the acquisition of attitudes and values. It is now generally recognised that, for economic growth to take place, a high proportion of

the population has to have received secondary education. It would thus be useful to clarify what secondary education needs to do to prepare young people for adulthood.

The view of learning as a process that continues throughout life leads us to reconsider both the content and organisation of secondary education. The requirements of the labour market create a pressure owing to which the number of years of schooling tends to increase (Delors et al., 1996, p. 125).

And later the authors of the report note:

the principle of lifelong education should open up wider possibilities of self-fulfillment and training after basic education, for example allowing adults to return to the formal system. Clearly, serious consideration of secondary education cannot be separated from thinking about the educational opportunities afforded to adults. The idea of 'education-time entitlements' that can be used throughout life can help focus policy making on the practicalities of further educational opportunities for people who interrupted schooling in youth: possibilities include study leave, recognition of skills already acquired, certification of non-formal learning experience and bridges between various educational streams.

Secondary education can thus be linked in the context of lifelong education to three major principles: diversity of courses, increased emphasis on the alternating of study and professional or social work, and attempts to improve quality (*ibid.*, p. 125-126).

The Delors Report analyses the main 'tensions' that must be balanced as countries and individuals fashion the directions of their education efforts at a time of major global change. On this matter the Commission says:

We have to confront, the better to overcome them, the main tensions that, although they are not new, will be central to the problems of the twenty-first century, namely:

- The tension between the global and the local: people need gradually to become world citizens without losing their roots and while continuing to play an active part in the life of their nation and their local community [...].
- The tension between tradition and modernity, which is part of the same problem: how can autonomy be acquired in complementarity with the free development of others and how can scientific progress be assimilated?
- The tension between long-term and short-term considerations: this is sustained by the predominance of the ephemeral and the instantaneous, in a world where an overabundance of transient information and emotions continually keeps the spotlight on immediate problems. Public opinion cries out for quick answers and ready solutions, whereas many problems call for a patient, concerted, negotiated strategy of reform.
- The tension between, on the one hand, the need for competition, and on the other, the concern for quality of opportunity. This has led us [...] to update the concept of lifelong learning so as to reconcile three forces: competition, which provides incentives; cooperation, which gives strength; and solidarity, which unites.
- The tension between the extraordinary expansion of knowledge and human beings' capacity to assimilate it.
- Last (and another perennial factor) is the tension between the spiritual and the material (*ibid.*, p. 16-18).

The body of the Report goes on to elaborate implications of these themes, and in particular talks about balancing the following polarities: internationalism versus local relevance; technological modernity versus cultural preservation; and individual development versus social cohesion.

Maintaining a suitable balance between these tensions is essential if we are to avoid a narrow understanding of the nature and value of secondary education. This balance is essential if we are to avoid reducing the contribution of education to utilitarian ends alone, as if its main role were merely to provide skills for employment or to enable citizens to become involved, however passively, in the political life of the community. But secondary education should be much more than skills training or civics: it should be concerned with the development and empowerment of the total human person. Such a holistic understanding of education is summarized by the Delors Commission when they cite the four pillars of education referred to earlier.

It is regarded as important that moves to renew, diversify and reform secondary education accommodate these insightful and important messages from the Delors Report.

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The articles which appear in this Open File on 'Secondary Education Reform' deal with many of the key issues and concerns referred to here. These are currently being addressed by governments, policy makers, researchers and education practitioners alike, as they seek to strengthen and upgrade secondary education to meet the challenges and uncertainties of the future.

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# SECONDARY EDUCATION IN LATIN AMERICA AND THE LABOUR MARKET CRISIS

*Daniel Filmus<sup>1</sup>*

## Introduction

The purpose of this article is to make some contribution to the debate on a historically troubled relationship: the relationship between education and employment.

One of the criticisms levelled most frequently at education is that it is disconnected from labour market demands. Without a doubt, the principal target of such criticism has been the secondary level. Its failure to deliver the knowledge and skills required by the modern world of work, together with its dwindling capacity to ensure access to higher education, is one of the main causes of a crisis that has often been described as an 'identity' crisis (Ibarrola & Gallart, 1994). According to these views, the main responsibility for the lack of linkage lies with the education system, which has failed to keep abreast of the new training requirements for employment.

Clearly, there is a great deal of truth in these criticisms coming from the labour market. Addressing this issue in other research papers, we have looked into the

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specifically educational difficulties that secondary education has encountered in keeping pace with production changes in advanced sectors of the economy. However, it is at the very least unfair to put all the blame for the lack of linkage with the world of work on the shortcomings of secondary education.

In this article, we propose to analyse the issue from a different angle. First, from within the education system, we shall study trends in labour demand. To what extent does the prevailing pattern of development in Latin American countries promote a labour market structure that in practice limits the possibility of creating high-quality secondary education for all? In other words, for what type of jobs has the Latin American labour market historically required—and does it currently expect—secondary schools to provide training? What impact have globalization processes, recent scientific and technological changes as applied to productive processes, and structural reforms dictated by Washington Consensus economic policies had on the relationship between secondary education and employment in Latin America? Who have been the winners and losers in an increasingly polarized labour market?

The deterioration of the employment situation in Latin America in the last few decades, with the trend towards informal labour, polarization and job insecurity, and the consequent increasingly unequal distribution of income call for a redefinition of the role of secondary education and a new approach to the labour market's real demands.

Are the loss of identity and the current secondary education crisis the outcome of a failure to keep in touch with the labour market or, on the contrary, of having responded to its changing characteristics? In view of the difficult conditions being imposed on Latin American countries by the new world economic order and globalization, can secondary education play an important role in the process of democratization of high-quality employment opportunities for all citizens?

In a recent paper, reversing the traditional position regarding the importance of education in combating inequality, Juan Carlos Tedesco (1998) asked the following question: How much social equity is necessary for education to succeed in its equalizing task? Following this same line of thought, this paper, too, puts the question about how secondary education should be linked to the labour market the other way around and asks: What minimum conditions should labour market demands set to ensure that the goal of achieving quality secondary education for all of the region's young people is attained?

In answer to this question, the article concludes by setting out the main problems and challenges that must be tackled in the new century, both in secondary education strategies and in all government strategies, so as to adopt an all-inclusive approach to the relationship between education and work and establish a new type of linkage that will democratize the benefits and potential of globalization and scientific and technological progress and ensure that they serve the interests of not just one sector of society, but the entire population.

## **Educational inequality in Latin America**

The 1990s spelled the end of the illusion that economic growth would necessarily have a positive impact on occupational structure and income distribution. Despite

GDP growth (3.5% per year), the Latin American labour market continued to witness the deterioration that had begun during the 'lost decade'. On the one hand, it contracted because it grew less than the economically active population and, on the other, it became polarized as the gap between the different types of occupations widened (International Labour Organization, 1999). The argument that being part of the globalized economy would produce conditions conducive to systemic competitiveness (ECLAC-UNESCO, 1992), with a significant, widespread upgrading of skills throughout the workforce, has not been borne out in fact. The sectors in which productivity growth has brought substantial improvements in working conditions, mainly those connected with international trade and basic services, have proved incapable of absorbing large numbers of workers.

In this context, the signals from the labour market to the education sector have been highly contradictory. To begin with, there has been great pressure to increase the number of years of schooling, especially for young people. In the first place, this was due to what might be called 'genuine' factors. What we mean by this are the educational demands emanating from the sector of the economy that has succeeded in finding a place for itself on the world market and has also changed its technological and organizational paradigms—switching from extensive use of semi-qualified labour to intensive use of highly qualified labour (Gitahy, 1994). To those demands may be added those of certain state sectors, firms producing goods and services intended for the domestic market and even a portion of the informal labour sector now undergoing modernization, primarily related to micro-enterprises. All these sectors need workers with skills such as versatility, creativity, proficiency in the subtleties of the mother tongue and in at least one foreign language, data processing and communication, teamwork, and openness to change and to continuing education, which can only be acquired by spending more years at school.

In the second place, it was for what might be called 'spurious' reasons, which had more to do with the ways in which workers are selected by employers in the new labour market context. It is obvious that the decline in employment opportunities has led to greater competition for the best jobs. The comparative advantage of more years of schooling has increased. For example, higher education degrees have become the main passport to access to modern sectors of the economy, particularly to good jobs in those sectors (Filmus, 1999). At the same time, the increase in the supply of workers with a longer school career behind them, coupled with the rigidity of labour demand, has encouraged what has been called qualifications inflation (Carnoy, 1982), with oversupply enabling employers to demand higher qualifications of a candidate than are required for the job, thus discriminating against those who were unable to continue their studies. Unemployment, informal work and the most insecure jobs have become the most predictable lot of those who left the education system early.

On the other hand, the education system also picked up signals that did not stimulate a sharp rise in post-primary enrolment. These signs were closely bound up with the deterioration of the labour market and of income distribution. The development model put in place has created a two-tier economy, in which the sectors that



had to take up the challenge of boosting productivity have become high-tech 'pockets' in a context with a virtually unchanged productive structure. The requirements of this sector of the economy were met by providing high-quality education to a small segment of the population. Although there was a strong demand for more schooling among the public at large, this was held in check by the rise in poverty and vulnerability among broad sectors of society. The worsening of families' socio-economic conditions prevented many of them from releasing young people from the task of earning an income for the household, depriving them of the possibility of pursuing their studies. By contrast, the educational options open to the new groups that, despite the difficulties, gained access to secondary education provided in most instances a poorer quality of service. Educational circuits of differing quality depending on the target population came into being and took root, leading to the emergence of full-scale sub-systems, each with its own learning, assessment and even accreditation criteria.

As a result of these contradictory pressures from the labour market, the region has witnessed two complementary processes in the last two decades: the education system has expanded relatively slowly in comparison with the rest of the world; and higher enrolment has been accompanied by growing inequality in the various social sectors' opportunities for access to education.

In the early 1970s, Latin America had a level of education consistent with its level of development. In the mid-1990s, however:

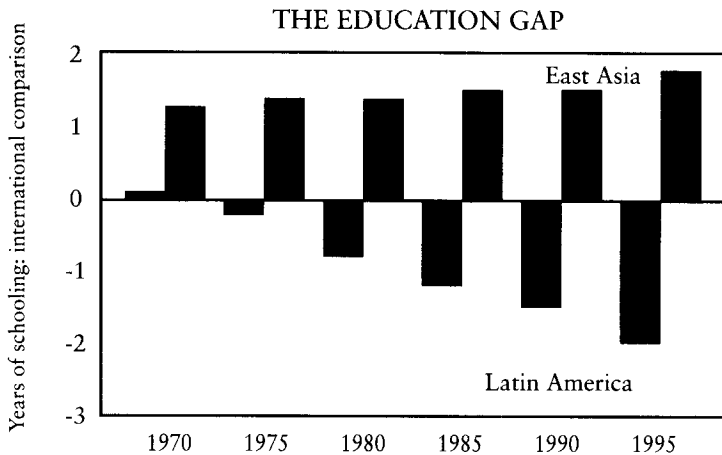
in Latin America the average is barely 5.2 years of education, two fewer than would be expected for its level of development and four fewer than South-East Asian countries with a similar level of development (Figure 1). Insufficient educational provision in terms of the regional average was, moreover, accompanied by growing inequality of educational opportunity since the standard deviation widened systematically during this period (Figure 2) (Londoño & Székely, 1998, p. 215).

These two processes—relatively slow enrolment growth and greater inequality in the distribution of education—were noted in a recent Inter-American Development Bank (IDB) study, which reported that in recent decades educational level in Latin America had grown on average at a rate of 0.9% per year, as against 3% per year in the East Asian countries in the same period. With regard to inequality, the report stressed that as average educational level improved, the normal education dispersion level was reached and then surpassed and that as from the 1980s 'education was more poorly distributed in Latin America than could be justified by the normal course of the process' (IDB, 1999, p. 42).

## **Developments in secondary education**

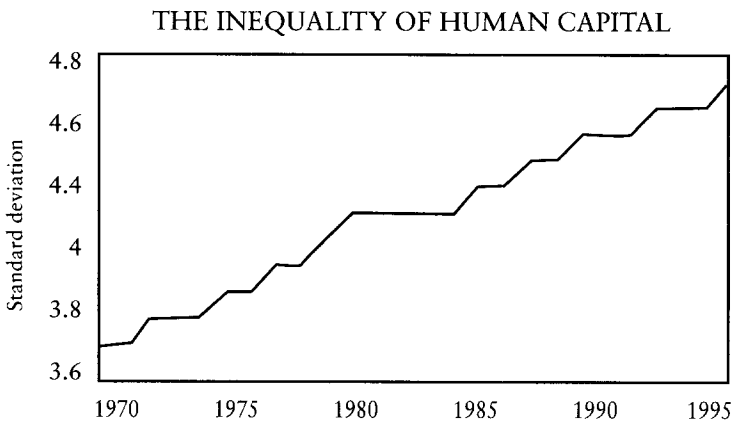
As we have seen, there is a correlation between, on the one side, a deteriorating, shrinking and more polarized labour market and increasingly regressive income distribution and, on the other, education that is growing more slowly than expected

FIGURE 1. The education gap



Source: Londoño & Székely, 1998.

FIGURE 2. The inequality of human capital



Source: Londoño & Székely, 1998.

and is also increasingly unequally distributed. Clearly, those who have spent fewer years in the education system have suffered most from polarization and groups that have had access to the higher levels of education have benefited most in terms of higher incomes and other improvements. But at which end of the scale do secondary school graduates stand? What impact has this process had on the school-to-work transition of those who complete the secondary level? We shall look at some empirical data in an attempt to analyse the role of secondary education in this new environment.

## SECONDARY EDUCATION IS INCREASINGLY CRUCIAL

Studies show that the secondary school-leaving certificate is increasingly necessary for access to employment, particularly to quality jobs or jobs in the modern sector of the economy. Some of these studies highlight the factors described here as 'genuine', which relate to the skills and knowledge that modern productive processes and new forms of labour organization demand, and require higher levels of educational attainment in order to participate in technological and social processes occurring within firms (Bailey & Eicher, 1994; Braslavsky, 1999). Other papers, while taking these factors into account, also analyse the consequences of 'spurious' processes that have more to do with the 'supply-demand' equation in the labour market. In these studies, particular attention is given to the growing importance of secondary education in the context of such phenomena as the devaluation of qualifications, overskilling and qualifications inflation (Filmus, 1999).

Undoubtedly, both sets of factors largely account for the fact that the secondary school certificate is becoming a minimum requirement for access to quality jobs. A recent Economic Commission for Latin America and the Caribbean (ECLAC) study (1997) provides a detailed analysis of the decisive impact of twelve or more years of schooling in enabling young people aged 20–29 to hold quality jobs.

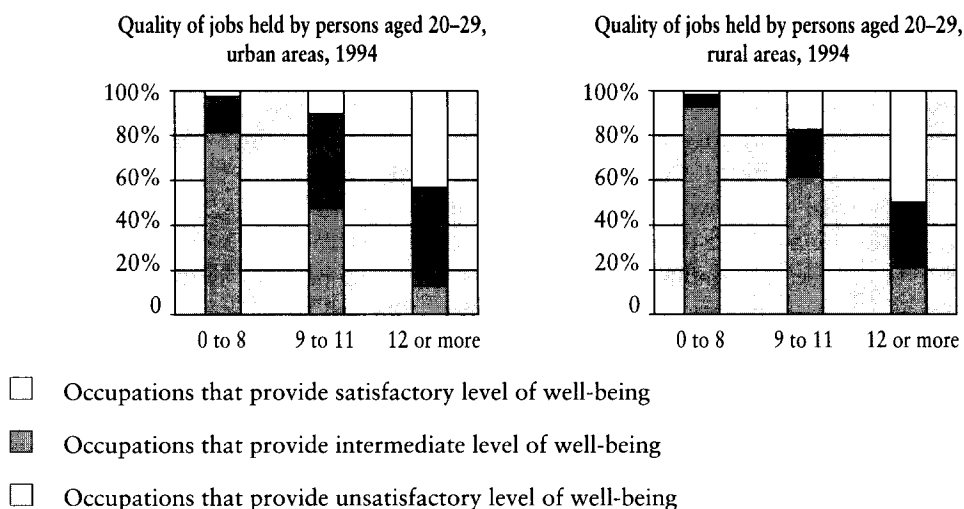
Classifying occupations according to the level of well-being that they provide, this ECLAC document shows that, in both urban and rural areas, only those who have had the opportunity to study for twelve or more years can, for the most part, accede to occupations that provide a sufficient or intermediate level of well-being (Figure 3).<sup>2</sup> Despite the strong correlation observed between the number of years of schooling and the best jobs, attention is drawn to the presence of a core of workers with a high level of educational attainment among those in occupations that provide an insufficient level of well-being. This will be analysed in the next section.

An economic analysis with similar findings was done by IDB (1999) on the basis of an assets-based study of poverty and unequal income distribution in six Latin American countries. This study concludes that inequality is the reflection of a highly skewed distribution of income-generating assets, the most important of which is human capital. A comparative analysis of those who complete secondary and higher education and those who remain on the sidelines suggests that the main advantage is that 'returns on educational investment are not linear and increase with the amount of total wealth [...] which obliges the less-educated poor to under-utilize their assets' (Attanasio & Székely, 1999).

## SECONDARY EDUCATION IS INCREASINGLY INADEQUATE

The combination of fewer employment opportunities, especially for good-quality jobs, and the concurrent rise in the proportion of the Latin American population completing secondary education has produced a highly paradoxical situation: as secondary education has become more and more important for access to employment, it has at the same time become increasingly inadequate to the task of guar-

FIGURE 3. Quality of jobs held according to years of schooling



Source: ECLAC, 1997, on the basis of special tabulations of household surveys conducted in the relevant countries.

anteeing employment opportunities in quality sectors for all its graduates. Available data show that the percentage of the unemployed with twelve or more years of education as a proportion of all the unemployed rose between 1990 and 1997 in ten of the fifteen countries for which information is available. This increase is also found in the same number of countries in our targeted analysis of young people with twelve or more years of schooling. The rise in the number of secondary school graduates in a more slowly growing labour market was the reason why nearly half of unemployed young people in countries like Chile, Panama or Ecuador were secondary school graduates (ECLAC, 1998). At the same time, in 1997 the jobless rate among people with ten to twelve years of schooling was higher than the national rate in fifteen of the sixteen countries of the region. The increase in 'graduate unemployment' and the existence of a sector of 'supernumeraries' with secondary and even higher education in the developed countries are issues that have been addressed by various authors (Castells, 1997; Fitoussi & Rosanvallon, 1996) and have been linked directly to the new configuration of the labour markets with the restructuring of productive processes at the end of the century as a result of technological and organizational changes. In addition, most of these countries provide near-universal secondary education, and also social coverage alternatives and retraining during periods of unemployment, which are usually shorter. In Latin America, the unemployment among secondary school graduates has very different characteristics. On the one hand, it occurs not only in countries where, if only partially, there have been important changes in productive structures with the introduction of modern technology and there is a relatively high rate of secondary enrolment, such as Chile and Argentina, but also in countries where the new technologies have had very little

impact and the secondary school enrolment rate is low—not more than 50%. This is true of the Dominican Republic, Paraguay, Nicaragua and El Salvador, among others. On the other hand, practically no official social welfare or retraining policies for these groups exist. One significant fact is that a large core of ‘impoverished’ secondary school graduates are now falling into the category of ‘vulnerable persons’, since their job insecurity and lack of social protection make them likely to swell the ranks of the ‘excluded’ (Minujin & Kessler, 1995; Minujin, 1999).

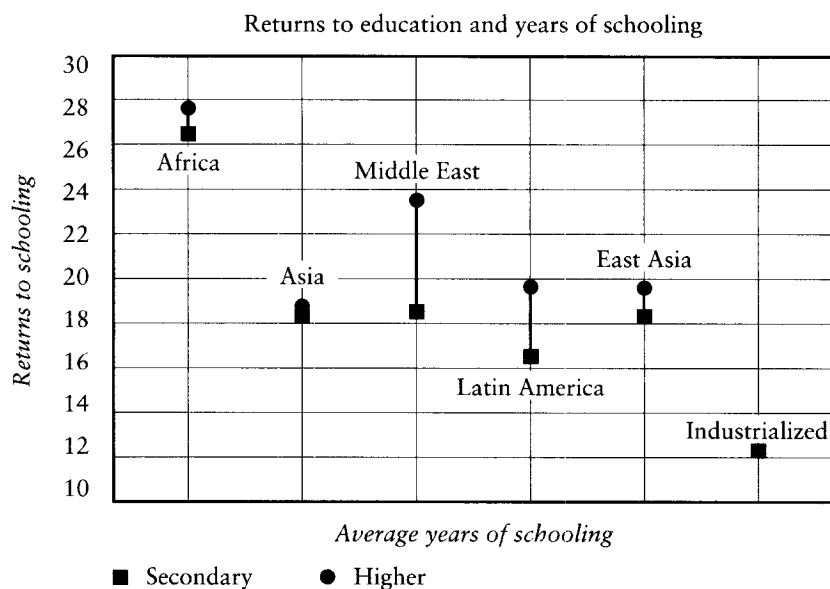
As to the type of work taken up by secondary school graduates, no recent comparative data are available to permit an analysis of the deterioration in their employment situation. Research conducted during the last few years provides some indicators for Argentina and Uruguay. In Argentina, between 1990 and 1999 the informalization of this sector grew between 29.6% and 36.7% (Filmus & Miranda, 1999). For Uruguay, a study on young people with a secondary education showed that more than 60% of employed 20–29-year-olds could not keep a family (Katzman, 1999).

Despite the lack of precise data, it can be inferred that throughout the region a growing proportion of this group is working in the informal sector and is underemployed. If we return to Figure 3, we see, for example, that 15% of the urban population and 23% of the rural population with twelve or more years of schooling are in jobs that provide them with an insufficient level of well-being.

Further insights into the deterioration of the employment situation among secondary school graduates may be gained by looking at rates of return on education. Although the validity of this type of study is subject to controversy, in this case the analysis of returns on secondary education in Latin America seems to coincide with observed trends regarding the relative decline in the market value of secondary school certificates. A recent IDB study (1999) shows that the returns on secondary education (11%) have fallen practically to the level of those on primary education (10%) and that the gap with higher education has widened (18%). A comparative analysis of these rates and those of other regions of the world shows that Latin America’s returns are closer to those of the developing countries than to any other region of the world, including East Asian countries, where the proportion of secondary school graduates in the labour market is higher (Figure 4).

The fall in returns on secondary education is characteristic of countries where universal provision has nearly been attained at this level, since jobs that require few qualifications and therefore have lower productivity and wage levels will also be done by secondary school graduates. In our case, this process is linked not to universal provision but to the deterioration of the labour market. There are two main dangers, among others, inherent in this situation. The first concerns the importance ascribed to calculations of returns when it comes to determining educational investments. The positions adopted by international funding agencies and governments themselves are often driven by strictly economic considerations which, in situations of scarce resources, may argue against investing in human capital in sectors or educational levels where it is not warranted by expected economic returns. This could mean a lack of resources to finance the expansion of secondary education (Filmus, 1999). The second danger has to do with the expectations of poor population groups

FIGURE 4.



Source: Psacharopoulos, 1994, in: IDB, 1999.

in the region. If these groups perceive the main economic incentive of education as being completion of higher education, then educational inequality could increase even further. This is because only those groups that could later have access to and complete higher education would make an effort to pursue secondary studies. According to the IDB study, this process is already underway:

... the structure of returns on education in Latin America is conducive to the stratification of education, as it provides little incentive to advance in basic education unless there is the scope (and potential) to have access to a university education. The small proportion of the population that reaches secondary education in Latin America is consistent with this interpretation (IDB, 1999, p. 46).

#### UNSATISFACTORY AND UNEQUAL GROWTH OF SECONDARY EDUCATION

All of the foregoing helps to understand the impact of the deterioration of the labour market and income distribution on two of the factors that account for the limited expansion of quality secondary education for the entire population. The first is that, despite sustained growth in enrolment, the proportion of secondary school graduates continues to be low in comparison with both other levels of education and other regions of the world (Caillods & Hutchinson, Forthcoming). The second is the inequality of the different social strata's opportunities to reach and complete secondary education.

The expansion of secondary education in the last two decades has failed to bring about any radical change in the educational structure of the region's population: 'The disproportion between primary and secondary education groups is one feature that distinguishes Latin America [...] from any other region of the world [...] [It has] the highest proportion of workers with some primary education, and after sub-Saharan Africa, it has the lowest proportion of workers with some secondary education' (IDB, 1999, p. 39). In comparison with South-East Asian countries, the disproportion is particularly striking. Latin America has a higher percentage of the population over 25 years of age with primary and higher education. However, the proportion of the population with incomplete or complete secondary education in East Asian countries is 28%, compared with only 16.9% in Latin America. This difference is also found in current secondary school enrolment. While the majority of Latin American countries have enrolment rates of between 45% and 55%, in newly industrialized countries the rate varies between 70% and 88% (Infante & Tokman, 1998). We consider this small number of secondary school graduates to be one of the main causes of the extreme inequality in the distribution of schooling in the region.

Furthermore, the possibility of completing secondary education continues to be a privilege to which only the higher income sectors of the population can aspire in significant numbers. The difference in graduation rates between groups belonging to the different income brackets speaks for itself. If we take the population aged 20 to 29, we see that in nearly half of the Latin American countries only one in ten young people in the poorest 20% of the population manages to complete secondary education. If we extend that to the poorest 50%, the ratio rises to one in five (Table 1).

The combination of the deterioration of the labour market with a more regressive income distribution and little educational expansion produces conditions that discourage upward social mobility, which was a definite possibility for broad sectors of society before the crisis of the 1980s. The concentration of the best jobs, the highest income levels and the longest number of years of schooling within specific social groups seems to have taken the situation back to stratification models of the more class-based type (in the Weberian sense), in which opportunities for social advancement were strongly determined by one's origins. Studies on intergenerational educational mobility show that longer schooling enables only a small proportion of young people to rise above their parents' level of education. Only 31% of 20–24-year olds in urban areas and 11% in rural areas manage to go beyond their parents' educational level and also acquire a basic educational capital of twelve years of schooling. Around 47% of urban young people and 75% of rural youth do not exceed their parents' level of education or attain a basic educational threshold. Moreover, only 20% of young people whose parents did not complete primary education manage to complete secondary education, whereas more than 60% do so when their parents have had more than ten years of schooling (ECLAC, 1997).

We have already indicated that owing to the entrenchment of educational segmentation it cannot be presumed that access to a similar number of years of schooling implies receiving the same quality of education, and that there has been

TABLE 1. Secondary completion rates for 20–25-year olds by income level (%)

Country	Bracket										Total
	1	2	3	4	5	6	7	8	9	10	
Argentina <sup>1</sup>	13	17	27	31	42	51	54	65	68	92	50
Bolivia <sup>2</sup>	51	48	55	52	59	60	60	64	65	83	61
Brazil	2	3	6	9	12	16	22	32	46	73	23
Chile	23	31	35	44	50	56	65	74	80	83	56
Costa Rica	10	10	11	14	13	18	29	42	44	70	30
Ecuador	14	15	18	29	26	33	40	46	49	73	36
El Salvador	8	6	10	9	14	15	27	35	47	69	27
Honduras	2	3	4	4	9	11	15	23	35	50	18
Mexico	4	9	12	16	18	26	32	39	53	70	32
Nicaragua	3	2	8	8	16	14	15	22	25	43	17
Panama	11	16	30	33	41	47	57	66	72	84	49
Paraguay	0	2	3	5	4	11	20	34	41	62	23
Peru	33	32	36	48	51	60	65	75	82	87	61
Uruguay <sup>2</sup>	16	21	24	35	35	43	46	51	63	72	42
Venezuela	15	17	26	24	31	32	44	48	53	74	40

1. The surveys for Argentina include only Greater Buenos Aires.

2. The surveys for Bolivia and Uruguay include only urban areas.

Source: IDB, 1999.

ample research evidence showing that children and young people whose parents have had the fewest years of education are the ones who have access to education of inferior quality. Meanwhile, social origin and the educational circuit in which they study also affect the income they will earn in future employment, since these factors, together with better family contacts, 'result in [some young people] receiving on average 30% more income although they may work in the same occupational categories and have similar levels of education' (ECLAC, 1997, p. 84).

## Final considerations

On the basis of this analysis, it may be said that high-quality mass secondary education that prepares all its graduates for access to high-quality jobs in the modern sector of the economy was antithetical to the labour market model that gave rise to the development pattern that prevailed in Latin America. In that context, having looked at developments in the relationship between secondary education and the labour market, we can now go back to some of the questions raised in the Introduction.

First, the contribution of secondary education to upward social mobility has been strongly influenced by labour market dynamics during the last decade. While the deterioration in the labour market has particularly affected those with less formal



education, it has also inhibited the upward mobility of a large proportion of secondary school graduates. Not all secondary school graduates have access to quality jobs in the formal market, and the alternatives they now face include lower-quality jobs and the informal market, leaving some of them in situations of growing vulnerability. Socio-economic origin, the family's level of education and the quality of the educational circuit in which they have studied seem to be the determining factors in how graduates will fare in employment.

Secondly, from our analysis we may submit that secondary education is increasingly necessary, since those who have not completed this level have practically no chance of access to quality jobs, particularly in the modern sector. But at the same time it has become an inadequate guarantee of access to those jobs. Not all secondary school graduates find jobs and, among those who do, many do not enter sectors with the highest productivity and earning levels. It must be stressed that the reason for this has much more to do with the type of labour market structure that has developed as an outcome of the impact of globalization processes and the opening up of the economies of commodity-producing countries with low levels of industrialization than with an 'oversupply' of graduate labour as a result of a disproportionate growth in secondary school enrolments.

Thirdly, the evidence suggests that secondary education can be blamed for having failed to make the necessary sweeping changes needed to provide training in the skills and knowledge required by modern sectors of the economy. But the criticism concerning its failure to adjust to the structure of the labour market does not seem fair at all. Indeed, the provision of high-quality education to only a portion of its pupils has in fact been one means of adjusting to the real demands of an increasingly elitist labour market.

Lastly, the analysis questions the view that lack of education is the main factor underlying employment problems in Latin America. Developments in the last two decades have disproved the argument that strategies driven by education (and even social policies) could be developed to counteract effectively the exclusionist and inequalitarian effects of the application of the new economic model. 'What the economic model and the labour market cannot give, the education system cannot provide' seems to be the main conclusion to be drawn from the data presented here.

Far from being pessimistic about the role of the education system, particularly secondary education, in the improvement and democratization of the labour market, we strongly believe that it is crucial, but at the same time it is insufficient. Among other implications, this prompts two final comments. The first is that policies to increase opportunities and improve the quality and relevance of secondary education should be part of a set of economic, political and social strategies designed to promote an inclusive labour market that offers good-quality jobs on a large scale. The second concerns upgrading the functions of secondary education, which has not been addressed in this paper. The role of secondary education in building ethical, tolerant, participatory awareness and a sense of solidarity in young people is essential if they are to be integrated into democratic society. But it also has a vital role to play in developing in young people a critical judgement of the world around

them, so that they can see themselves as players in building a society that provides equal opportunities of access to education and decent work to all its citizens.

## Notes

1. With the collaboration of Mariana Moragues.
2. ECLAC considers that occupations which permit a sufficient level of well-being are those that provide an average monthly income amounting to between five and seven times the poverty line; occupations that permit an intermediate level of well-being: between three and four times the poverty line; and those that permit an insufficient level of well-being: between two and three times the poverty line (ECLAC, 1997).

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## SECONDARY EDUCATION REFORM

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# FINANCING THE DEVELOPMENT OF SECONDARY EDUCATION IN DEVELOPING COUNTRIES<sup>1</sup>

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*Keith Lewin and Françoise Caillods*

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Following the 1990 World Conference on Education for All, many developing countries have successfully increased basic school enrolment and completion rates. The resultant growth in the numbers of qualified secondary school applicants, however, has not been accompanied by a comparable increase in educational opportunities. In most developing countries with secondary school gross enrolment rates (GER2s)<sup>2</sup> of less than 40%, there has been no significant increase in enrolment rates over the past decade. In countries with GER2s from 40% to 70%, the average rate has only increased from 49% to 56%. This means that, despite the remarkable gains in access

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to basic schooling in the poorest countries, the absolute number of people in the developing world without access to secondary education is actually increasing.

The question of investment at the post-primary level must be revisited. Low and negative rates of economic growth, along with the high cost of delivery, have overburdened the already scarce public resources available in developing countries for the expansion of public secondary school systems. Moreover, international educational grants and loans to the poorest countries—which tend also to have lower secondary enrolment rates—have favoured primary rather than secondary education. Without a serious appraisal of strategies for increasing secondary participation in countries most at risk, secondary enrolment and quality are likely to decline below already inadequate levels.

In this article we examine rationales for increased investment in secondary education, assess the viability of efforts to increase secondary enrolments and suggest possible strategies for doing so; finally, we consider a variety of case studies drawn from the experiences of a number of countries with low secondary enrolment rates.

## **Why invest more in secondary education?**

Secondary education has proved to be critical to development. Yet the very countries most in need of development tend to have the lowest enrolment rates and the most problematic secondary school systems. A UNESCO data set<sup>3</sup> divides 150 countries into four groups: countries with GER2s (1) of 7–40%, (2) of 41–70%, (3) of 71–90%, and (4) above 90%. Forty-four countries fall into the first category; fully two-thirds are located in sub-Saharan Africa, while the remainder are found in Central and South America and Asia. These countries tend to have low GNPs per capita, low or negative economic growth rates and high population increase and dependency ratios for their school-age populations. If a country's GER2 is less than 40%, it is often the case that less than 10% of the labour force has successfully completed secondary schooling. This raises critical questions for human resource development strategies that depend on the availability of people with knowledge and skills acquired beyond the primary school level.

That something must be done in the countries with the lowest GER2s is clear. A nation cannot expect to move beyond subsistence agriculture, increase industrial manufacturing and competitive service industries, or develop an international trade strategy with a labour force only 5–10% of whose members have completed secondary schooling.

With its greater focus on formal reasoning, abstract problem solving skills and critical thinking as well as its occupationally relevant content, secondary education promotes the development of a skilled and knowledgeable citizenry with access not only to the national but also to the global economy. The World Bank (1993) reports that Japan's growth after 1960 was especially influenced by the early achievement of high secondary school enrolment rates. Longitudinal data on enrolment growth suggest that participation in secondary education is now the differentiating factor in the economic growth of Asian countries (Lewin, 1999). The growing 'digital

divide', the difference in the impact and assimilation of information and communication technology, can be directly connected to the low numbers of secondary school graduates in developing countries. The lower these numbers, the less likely a country is to attract direct foreign investment, engage in knowledge-based economic activity and compete internationally.

## **Are higher secondary enrolments achievable?**

It is crucial that developing countries increase secondary school enrolments, but limited resources make doing so exceedingly difficult. There are a number of ways, however, in which developing countries can increase secondary enrolments while respecting the fiscal limitations they continue to face.

A country can increase secondary enrolment by enlarging the proportion of its GNP allocated to education in general and secondary education in particular; reducing unit costs; increasing efficiency; exploring opportunities to expand cost-sharing; and acquiring external assistance. Strategic distinctions can be made between countries whose first need is to increase overall enrolment and those that need primarily to increase internal efficiency. In the former, increased access requires pro-rata increases in public expenditure; in the latter, increased access can be achieved by reducing repetition and other sources of inefficiency (such as poor teacher deployment and excessively low teaching loads) without necessarily increasing costs.

### **COST ASSESSMENT**

To achieve higher secondary enrolment in the poorest developing countries, investment strategies and cost structures must be reassessed. Levels of secondary school enrolment in most countries appear to have more to do with policy choices and investment preferences than with resource constraints. The magnitude of public expenditure on secondary education as a percentage of GNP can range from below 0.5% to over 3%. On average, low GER2 countries allocate smaller proportions of their GNPs to secondary education than those with higher GER2s (an average of 0.86% compared with an average of 1.41%) and unit costs as proportions of GNPs per capita are higher in countries with low GER2s. Where the gross enrolment rate for basic schools (GER1) is as high as 80%, the rate for secondary schools almost always tops out at 30%. Above this threshold, GER2s vary across a wide range.

National development strategies must focus on the difficult task of identifying the level and focus of investment in secondary schooling most likely to contribute to growth. Policies will be country-specific. An enrolment-driven model has been used to assess cost by stimulating the various scenarios and running simulations that explore the behaviour of enrolment rates and recurrent costs over a fifteen-year period for various countries with GER2s below 40% and between 40% and 70%.

Table 1 provides a regional perspective using UNESCO data (1998). If current cost structures are retained, it appears that sub-Saharan African countries would need to allocate on average nearly 4% of their GNPs to secondary schooling alone

to achieve GER2s of 60% (column 5) and over 5% of GNP for GER2s of 80% (column 6). This is unlikely to happen especially when the amounts needed to sustain GER1s at 100% are added (column 8). Apart from the lowest GER2 countries, the figures for other regions are promising. If countries prioritize increasing their GER2s, they can probably do so.

TABLE 1 The financial challenge of increased secondary enrolment.

	1	2	3	4	5	6	7	8
	GER1	GER2	Ed. as % GNP	% Ed. expenditure on secondary as % GNP	% GNP needed for GER 2 60%	% GNP needed for GER 2 80%	% GNP needed for GER 2 100%	% GNP needed for GER 1 100%
Africa	85.9	28.2	5.8	1.4	3.8	5.1	6.3	2.9
C. America, Caribbean	104.1	49.3	4.3	1.0	1.1	1.5	1.9	1.5
S. America	108.8	60.2	3.5	0.7	0.8	1.0	1.3	1.2
Asia and Oceania	99.9	51.4	4.2	1.2	1.5	2.0	2.5	1.7

Note: These unweighted averages are illustrative and are based on the countries for which data are available.

#### INCREASING PUBLIC SPENDING ON SECONDARY SCHOOLS

The increases needed in the proportions of GNPs allocated by many low-GER2 countries to secondary education for significant expansion are unrealistic. Where more than 5% of GNP is already committed to the education budget as a whole, substantial increases are unlikely. Redistribution to favour secondary schooling may also be difficult where universal basic education has yet to be achieved. In such cases, reducing unit costs, increasing efficiency and exploring cost-sharing and external assistance options may be the most appropriate alternatives.

Some countries, however, could allocate more money to secondary education. Some of these countries spend more money on higher education than on secondary schooling. In these countries, policy changes are possible. Where both primary and secondary enrolment rates are still low, secondary schools must not be financed at the expense of investment at the primary level. Where there are high levels of primary enrolment and relatively low levels of secondary enrolment, it is more feasible to suggest that any increases in overall allocation up to 5% or 6% of GNP should be directed towards expanding access to secondary education. Deficiencies related to

basic schooling must continue to be addressed in these countries, but increases in access to secondary education are likely to make a greater marginal contribution to development efforts than investments designed to improve quality at the primary level. Further, shifting the balance of allocation to favour secondary schools might be a reasonable policy goal where more is spent on tertiary than on secondary education (e.g. Malawi, Costa Rica). This could release resources to support increased secondary participation. What is possible in a given country will depend on the initial value of public expenditure on secondary education as a percentage of GNP, the proportion of GNP allocated to education, and justification for the current distribution of public funds among levels. Whether a given country's economy is growing or shrinking is, of course, also relevant.

Debt forgiveness schemes currently under consideration could change the circumstances of the most indebted countries and release additional resources. This would only benefit secondary schooling if sector-wide strategies recognize the importance of a balanced approach to financing primary and secondary education. Decentralization might also enable local authorities to raise revenue they can use to support education.

Where secondary enrolment rates are low or in the middle range, but there seems to be an oversupply of secondary school graduates, the expansion of secondary enrolment levels may not be the culprit. The level of unemployment may be linked to poor-quality secondary schooling that does not focus on the most relevant knowledge and skills; it could also be related to the short-term impact of structural adjustment programmes made necessary by inappropriate macro-economic or social policy. In such cases, policy should focus on employment-related issues and on appropriate educational reforms. Tight labour markets may actually increase the demand for secondary schooling when the opportunity cost is low. Political and social pressures may also promote expanded access. A country should base its education policies on an understanding of likely employment growth rates; it should focus its efforts on reforms designed to increase the relevance and utility of secondary education and on strategies intended to increase cost recovery—in tandem with safeguards designed to protect balanced participation.

#### REDUCING UNIT COSTS OF SECONDARY SCHOOLS

The lower a country's secondary school enrolment rate, the more expensive it is to fund secondary education in the country. In countries with high GER2s the ratio averages 1.3:1 in favour of secondary schools; in countries with very low GER2s the ratio averages 3.5:1.

How much is spent on secondary schooling per student as a percentage of GNP per capita is determined mainly by a combination of pupil-teacher ratios, and teachers' salaries in relation to GNP per capita. Where pupil-teacher ratios are low and can be increased, the unit costs will fall and allow more secondary students to be enrolled at the same level of expenditure. Secondary school systems regularly use teachers less intensively than do primary school systems, as pupil-teacher ratios make clear: 37%



less for secondary schools in low GER2 countries and 18% less in high-GER2 ones. An increase in ratios would help to lower the cost of secondary education.

The same outcome could be achieved by reducing average salaries. Of course, salary levels have to be judged in relation to national labour markets and costs of living. They vary considerably between countries as percentages of GNPs. Significant reductions in teacher salaries where these are judged excessive, may be feasible. However, where salaries are low, reductions could have negative consequences for teachers' motivation and performance. One possible approach would be to reduce average salary costs by attracting more teaching assistants and by employing more younger teachers—who can complement the work of highly paid, fully trained and experienced teachers. Adopting this approach would allow more secondary students to be enrolled at the same cost.

The length of secondary schooling and how it is segmented into more and less specialized cycles may also need to be re-examined. Policies regarding curricular options, the selection and tracking of students, and specialized provision all carry cost implications that may need reappraisal in the light of new circumstances that make it inappropriate simply to expand existing educational offerings. Where there are insufficient resources to increase access, choices have to be made between sustaining or enlarging costly programmes and reducing costs by rationalizing option choices and limiting enrolment in high-cost specializations. Alternative delivery systems that make more use of peer teaching, self-instruction and distance-learning methods could all reduce unit costs without—necessarily—diminishing quality. They offer possible strategies for expanding access on the part of those currently out of school as well as lower unit costs for those already enrolled.

Other options include exploring the economies of scale that might result from increases in average school size where this is low, reducing non-essential boarding and/or associating it with cost recovery; and economizing on non-salary costs where this does not reduce the supply of learning materials. The primary options for reducing unit costs are summarized in Table 2.

#### INCREASING EFFICIENCY

Efficiency can be increased in many secondary school systems. When students drop out of school, efficiency is seriously affected because of their accompanying incomplete mastery of competencies associated with secondary schooling. Also, the number of years of investment needed to produce a successful secondary school graduate is increased. Repetition is inefficient (and probably inequitable) if it results in places being occupied by those repeating at the expense of those waiting to get into school. At the same time, the level of repetition is itself some indication of the effectiveness of learning and teaching. Repetition rates, often controllable by public educational policies, may be lowered through ensuring appropriate pupil-teacher and class-teacher ratios, reducing teacher absenteeism, adapting curricula to local circumstances and increasing the time students spend on key educational tasks.

TABLE 2. Options that would reduce unit costs of secondary schools

Objective	Method
Reduce the length of secondary schooling.	Where secondary cycles are longer than necessary, reduce in favour of greater participation and higher completion rates.
Lower unit cost of secondary schooling by combining primary and secondary grades.	Extending enrolment to include some or all lower secondary grades in primary schools should reduce costs of provision and increase retention. Transitional costs have to weighed against benefits.
Limit enrolment in high-cost tracks.	Restrict enrolment in more expensive specialist schools and tracks. 'Technologize' the school science curriculum. Introduce vocational subjects with average costs.
Adopt a core curriculum with limited options at the lower secondary level.	Organize learning around a common core with polyvalent teachers managing whole class teaching.
Restrict choices at the upper secondary level.	Establish minimum group sizes for options. Limit the number of options available in each school.
Include periods of self-instruction, distance learning and mixed mode delivery.	Adopt more flexible learning strategies, especially for older students, that would include peer learning, materials-based self-instruction and conventional and information technology distance-based programmes.
Increase pupil/teacher, ratios.	Where pupil-teacher ratios are low-increase to maximum on the basis of physical constraints and demonstrated good practice. 40:1 may be feasible. Use school mapping and economic analysis to establish minimum secondary school size allowing higher pupil-teacher ratios.
Reduce class/teacher ratios.	Establish class-teacher norms suited to curricula organization and appropriate teaching loads. Class-teacher ratios could be maintained below 2:1.
Increase teaching hours.	Review teaching workloads. If these are low, identify new norms. Profile workloads of more and less qualified teachers and distribute evenly.
Increase the proportion of teaching assistants, temporary teachers and younger teachers.	Encourage recruitment of lower-cost teachers within career structures that allow development and promotion. Extend use of experienced teachers using team teaching, parallel classes and common lesson planning. Use experienced to support inexperienced.
Reduce average teacher salaries.	If teachers' salaries are substantial multiples of GNP per capita, and above levels for comparable groups, consider pay restraint and increases below the rate of inflation. If salaries are low and result in widespread second jobs, increase salaries and non-salary benefits.
Reduce non-essential boarding.	Sustain boarding only where population density, transport and special needs justify costs. Otherwise, switch to day schools and/or increase cost recovery.
Reduce non-salary costs.	Review non-salary costs. Protect learning material expenditure. Review flat rate subsidies for food, books etc. in favour of needs-based subsidies.

Attempts should also be made to eliminate ‘ghost’ teachers from public payrolls, provide incentives to improve learning outcomes and the flow of students through education systems, and improve teacher deployment. Where teachers are trained to teach several subjects, utilization is generally higher than where teachers specialize in only one subject. In certain conditions, a system of double shifting can also be introduced, thus saving costs.

A related problem that must be addressed is the insufficient number of trained secondary school teachers. This problem is especially serious in sub-Saharan African because of problems including the spread of HIV. As the need for teachers increases, the labour force is losing many qualified teachers or prospective teachers—along with other secondary-educated mid-level professionals—at an alarming rate. The more educated appear to be at greater risk of infection. Policies aimed both at expanding opportunities for education—to replace these members of the workforce—and at bringing about reassessments of educational approaches (better health education) are essential. Some of the options for increasing efficiency in secondary schools are summarized in Table 3.

#### INCREASING EQUITY

Patterns of secondary education must change not only to increase efficiency but also to foster equity. It is neither cost-effective nor equitable simply to replicate existing institutions and practices to accommodate larger numbers of students. In poorer developing countries with low secondary school enrolment rates, pupils are often drawn disproportionately from wealthier and urban households. These institutions have their roots in pre-independence institutions designed to train elites for government service. They tend to be highly selective, with teaching practices and curricula that cater to the privileged, and tend to be more expensive. Gender gaps favouring boys are typically more pronounced in secondary than in primary schools (in high-GER2 countries, gender gaps generally favour girls). In many developing countries, significant numbers of students either do not begin or do not finish secondary school. Disproportionate numbers of those who stay in school are likely to be from advantaged backgrounds. Thus, the pattern of public expenditure favours these students, with the unintended result that the way many countries fund secondary education may tend to reinforce rather than reduce class inequalities.

#### COST SHARING

Tuition fees help school systems recover some of the costs of funding expanded access to secondary schooling. While most countries anticipate some contribution, secondary schooling costs passed on to students and their families vary from country to country; most school systems recover only small portions of total costs. Where incomes are high enough to permit the assessment of significant fees, this option should be considered—in conjunction, of course, with safeguards for access by low-income families. Where secondary enrolment is low and demand exceeds the capac-

TABLE 3. Options that would increase efficiency in secondary schools

Objective	Method
Reduce dropout rates.	Establish reasons for dropouts. Where these are under the control of the ministry and schools, devise interventions and curriculum modifications to reduce dropout rates.
Reduce repetition.	Establish reasons for repetition. Where these are under the control of the ministry and schools, devise interventions and curriculum modifications to reduce repetition.
Reduce variation in pupil-teacher ratios and class-teacher ratios.	Monitor variation in school inputs and performance indicators. Use formula funding to reduce variance between schools on key indicators.
Eliminate 'ghost' workers on the salary payroll.	Audit payroll against validated school census data.
Provide incentives to increase efficiency of school management.	Review national, regional, district and school-level allocation and spending procedures. Develop incentives for budget holders to increase efficiency, especially in relation to teacher deployment and other major cost drivers.
Train teachers to teach several subjects.	Increase teacher utilization by ensuring teachers can generate full teaching loads, teaching across several subjects if necessary.
Double-shift schools.	Introduce double-shift schools where population density allows if this increases capacity at marginal cost.
Reduce teacher absenteeism.	Review conditions of service, limit penalty-free casual leaves and reward continuous attendance with bonuses.
Adapt curriculum to seasonality and patterns of attendance.	Consider curriculum development designed to recognize irregular pupil attendance and modularize learning.
Increase time on task.	Increase student learning time through better classroom management and pedagogy; reinforce through school and district supervision systems.

ity of the public school system, a low-cost approach to increasing national enrolment may be to subsidize private education.

Schools can ask families for contributions to reduce the cost of learning materials, although of course they need to be sensitive to appropriate pricing. Where they have some autonomy over the funds they generate, they can reduce operating costs by requesting contributions for food and boarding expenses. They can also generate income by renting out facilities. Cost sharing with local communities is also a viable option. Matching grants, tax incentives and local fund-raising campaigns can all significantly increase the flow of resources. Family and community contributions will naturally depend on ability to pay; they will be less feasible where economic growth is limited, poverty is widespread and opportunities for income generation are scarce. Further, of course, many communities are already heavily engaged in funding basic education systems.

## EXTERNAL ASSISTANCE

External assistance can also increase the resources available to secondary education systems in developing countries. In the countries with the lowest GER2s and the fewest prospects of financing expansion domestically, international grants and loans can go a long way towards reducing costs. Grants and loans can help fund the construction or acquisition of buildings, the purchasing of equipment, the development of curricula, the production and distribution of textbooks and learning materials, the education of teachers, and the assessment and management of schools and school systems. Donors have not favoured the development of secondary school systems over the past decade. Efforts must be made to make it clear that demand for post-primary education is very high and that investment at secondary level has been a missing link in human resource development strategies.

**Lessons from some country case studies**

Some examples help to illustrate the magnitude of the problems and some of the approaches different countries have employed to support growth in secondary education.

Secondary education in *Zimbabwe* expanded rapidly after independence. One important factor was the high level of public resources earmarked for education—as much as 8% of GNP and 17% of the national budget were allocated to education—substantial proportions of which were allocated to secondary school systems. The low public unit cost at the secondary level made expanded access more affordable. This cost averaged twice that at the primary level, low by developing country standards. The unit cost was kept low partly because of the increasing pupil–teacher ratio—in turn a consequence of the higher numbers of untrained teachers during the period of most rapid expansion. It continues to be kept relatively low through fees and contributions that help reduce the need for public expenditure. Other factors include the policy of automatic promotion at the primary level, which reduces repetition rates and increases the flow of students through the system. Double-shifting has also increased capacity and yielded savings.

The secondary school attrition rate remains high in *Zimbabwe*. The most common explanation is the relatively large financial burden on families who must contribute to educational costs by paying fees. It is primarily poorer students who drop out of secondary school, and most of these are female; the problems of class and gender inequalities continues to be reinforced by public educational policies. Another growing problem is the high level of unemployment faced by secondary school graduates—partly resulting from the failure of macroeconomic strategies to generate growth.

*Sri Lanka* offers a rare example: a low-income country that has achieved high levels of secondary school enrolment at relatively low cost. No more than 3.5% of GNP has been devoted to education, representing little more than 10% of the national budget. This is largely explained by relatively low expenditures on salaries as a

proportion of GNP, and partly by the unusual practice of open access to schooling through Grade Eleven. Further, secondary and primary schools are often combined. Thus, the system benefits from economies of scale. These institutions share staff across grades; teachers are not strongly differentiated into primary and secondary categories. As a result, the secondary school unit cost averages about twice the primary school unit cost, as is true in Zimbabwe. Enrolment gains in Sri Lanka reflect a low-growth demographic transition; the current growth in the school-age cohort is only about 1.2%. The main problem faced by this country is inequality between schools, especially between secondary schools that have university entrance grades and those that do not.

*China's* experience in expanding access to secondary schools has been varied. Both liberalization and the development of a socialist market economy since the mid-1980s have resulted in a great range of financing mechanisms designed to support growth in enrolment. These have complemented long-standing structural features of school financing that are peculiar to China and some former communist countries. Conditions vary widely across the country, but common arrangements include the taxation of business turnover and payrolls, with the proceeds earmarked for education; the allocation to education of some of the profits of school-run businesses (these are enterprises in common ownership, but not usually using school staff or students as employees); and the use of various forms of collective work-unit support for schools based in communities (both in-kind and in the form of cash from fund-raising and other sources).

Low population growth has resulted in a shrinking age cohort, but there is also a high level of dependence on work-unit-related income from activities unconnected with schooling. School development is often financed through the entrepreneurial use of school assets (e.g. the renting of space and buildings). A significant proportion of urban schools generates substantial income from fees paid by students from outlying areas. One consequence has been the development of large differences in the unit costs of educating students in urban and rural schools. Teachers' (publicly funded) salaries and their total incomes have diverged widely as a result of non-budget contributions from local sources. It remains to be seen how the tensions that have developed as participation grows will be resolved.

## Conclusion

Appropriate levels of investment in secondary schooling are critical to development. Effective secondary schooling introduces students to formal reasoning, abstract problem solving skills and occupationally relevant content, while giving them valuable tools for effective societal leadership. Expanding access can contribute to equity and poverty reduction. School funding policies are at the heart of new approaches designed to increase secondary school enrolment. The options available to a given country might include expanding the share of government resources allocated to secondary education, reducing per-student expenditures to allow expansion, increasing internal efficiency, and developing cost-sharing mechanisms to facilitate co-financing of

school costs. Which option or options a particular country selects is of course a subject for country-level analysis. Public and private educational stakeholders must identify those approaches that will be most effective in increasing enrolment and enhancing quality in every country.

## Notes

1. This article is adapted from the conclusion of Lewin, K. and Caillods, F., *Financing secondary education in developing countries: strategies for sustainable growth*, Paris, UNESCO/IIEP, to be published in 2001.
2. The main structural determinants of the gross enrolment rate at the secondary level can be summarized as follows:  $GER2 = x / ac$ , where  
 $x$  = public expenditure on secondary education as a percentage of GNP;  
 $c$  = public recurrent expenditure on secondary schooling per student as a percentage of GNP per capita;  
 $a$  = the proportion of the population of secondary school age.  
This paper focuses on the values of  $x$  and  $c$ . The value of  $a$  varies between less than 5% and 15%. Its magnitude cannot be changed through educational policy, except through varying the length of the secondary cycle. It arises from the historical rate of population growth. It will change if demographic transitions occur. The change will, however, take some time to have an effect on the enrolment rates, since there will be a lag of a number of years between changes in e.g. fertility, and the arrival of students in the secondary age range.
3. UNESCO data set 1998.

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**SECONDARY EDUCATION REFORM**

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**NEW SOCIETIES AND**

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**ECONOMIES:**

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**CHANGING DEMANDS**

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**FOR SECONDARY EDUCATION**

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**IN CENTRAL AND**

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**EASTERN EUROPE**

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*Albert Motivans*<sup>1</sup>

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Few could have predicted the scale of the changes that would sweep through Central and Eastern Europe during the last decade, leading to the rapid transformation of economic, social and political institutions. In the process, Central and Eastern European (CEE)<sup>2</sup> countries have faced the challenge of realigning their education systems, recasting school curricula, updating teaching methods and educational materials, and adapting school management to the new rules and goals of society. They confront this challenge with diminished resources, as large declines in output and government revenues during the transition have created severe budgetary constraints and have left families with less to spend on education. This article surveys

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developments in secondary education, from participation and learning outcomes to the content of curricula, and finds a varied range of national responses to meeting the significant challenges accompanying transition.

As countries adapt to more democratic societies, market-oriented economies and closer economic and social integration into European structures,<sup>3</sup> the potential contributions of secondary education are indeed great. Equitable education systems and good learning outcomes can play a central role in building human capital and thus help to rebuild the economies shattered by the shift from a planned system and provide the skills needed to support national and European competitiveness in a period of rapid technological change and globalization of markets. Progressive curricula have the potential to strengthen democratic values, to foster social cohesion and to promote participation in the construction of civil societies that are slowly being nurtured. Education is also crucial to youth self-development, providing young people with the skills for a better life and helping them to make informed choices about new types of risks that emerged during the 1990s.

## **New societies, new economies**

Changes in secondary school curricula in Central and Eastern Europe in the 1990s were conditioned by a range of factors, as national traditions re-emerged in changing macro-economic and institutional contexts. One of the paradoxes has been that broader social and economic change has placed greater demands on the education system while at the same time diverting political attention and commitment and limiting available resources for education.

Advances in reforms reflect the different starting positions and the pace of social and economic reform. In Central European countries, such as the Czech Republic, Hungary and Poland, such advances had already begun in the 1980s. This timing of key structural reforms (such as limited privatization or decentralization) helped to cushion the intensity of economic shocks in the 1990s, thus facilitating further restructuring. The high degree of continuity has been reflected in the educational reform agenda. Often it reflects ideas and concepts that were developed earlier and have been adapted to new conditions. Countries that experienced a major historical break with the past and inherited a less stable institutional framework have faced greater challenges in advancing an education policy agenda. These include countries that regained national sovereignty or became independent as a result of the break-up of the USSR or Yugoslavia. The fact that there are nineteen independent nations in the year 2000 compared with only seven in 1990 underscores the challenges faced by education systems in helping to build new societies and new economies.

The economic impact of transition is most dramatically reflected in the large falls in production over the 1990s. In terms of measured output, real gross domestic product (GDP) fell sharply across the region and by more than 60% in several Western countries of the Commonwealth of Independent States (CIS). Since then, the path to economic recovery has been smoother in Central Europe than elsewhere.

Even so, by 1999 only Poland, Slovakia and Slovenia recorded higher levels of GDP than in 1990, although the Czech Republic and Hungary were just below 1990 levels. Several countries have recently faced renewed economic difficulties, for example Bulgaria, Romania and the Russian Federation. Others, such as Ukraine, have yet to record a single year of economic growth.

Thus, for some countries, more stable economic and political conditions, which help to maintain levels of education spending and may generally facilitate education reforms, are still not a reality. Spending on education relative to GDP, although low by the standards of the countries of the Organisation for Economic Co-operation and Development (OECD), was generally maintained in the 1990s, although the share of resources allocated to education comes from a greatly diminished public budget. State support for education has been sharply reduced in real terms by as much as 75%. Declines in output, the reduced administrative capacity of the State and the growing importance of informal sector activity have translated into lower government revenues. Decreasing government revenues can represent a threat to spending on education, particularly in countries where the decreases have been particularly large. Coupled with declining public revenues, the ability of households and individuals to cover education costs themselves has decreased owing to high levels of unemployment and poverty.

In response to declining resources, spending has been adjusted in the education sector owing to a number of factors: the marketization of services and cost-recovery measures, lower real wages for teachers and others in the educational sector, the emergence of non-state provision of education services, sharp declines in capital expenditures, and difficulties in the production and distribution of textbooks and other learning materials. These present obvious difficulties for implementing new curricula.

Large-scale economic reform has brought substantial changes to the nature of employment. Non-state small and medium-sized enterprises, often in the service sector, are driving the new economies, and large state-owned industrial enterprises face bleaker prospects. In most countries, a relatively small share of enterprises are still state-owned. Informal employment has risen dramatically in many countries and accounts for a substantial share of national production. High levels of open unemployment have emerged as a key social welfare issue.

These changes have brought about a general reassessment of the skills provided by formal education and have generally made the transition from school to work more difficult. The strong school-to-work linkages that existed have disappeared in some countries, and this has led to a more unpredictable 'open market' system coupled with weak market signals. The changes in the labour market make the situation of young people more difficult and the transition to social and occupational integration a more prolonged, diverse and complex problem. Moreover, there is growing evidence that the recruitment of graduates is no longer based solely on formal diplomas and certificates, as was typically the case in the past. Hiring practices are changing rapidly, especially in growth sectors. This is especially true in countries where market reforms are well advanced. This profound shift obviously poses considerable challenges for education systems in the region.

Although not discussed in depth in this article, there have also been important social developments with consequences for the development of secondary education curricula. These have included increased ethnic conflict and the need for curricula promoting tolerance. Also, a range of youth issues have emerged, from encouraging participation both in school and in society to providing life skills to young people to better equip them to make decisions about different types of individual risks (drug use, sexual behaviour, etc.).

## Shifts in participation and student flows

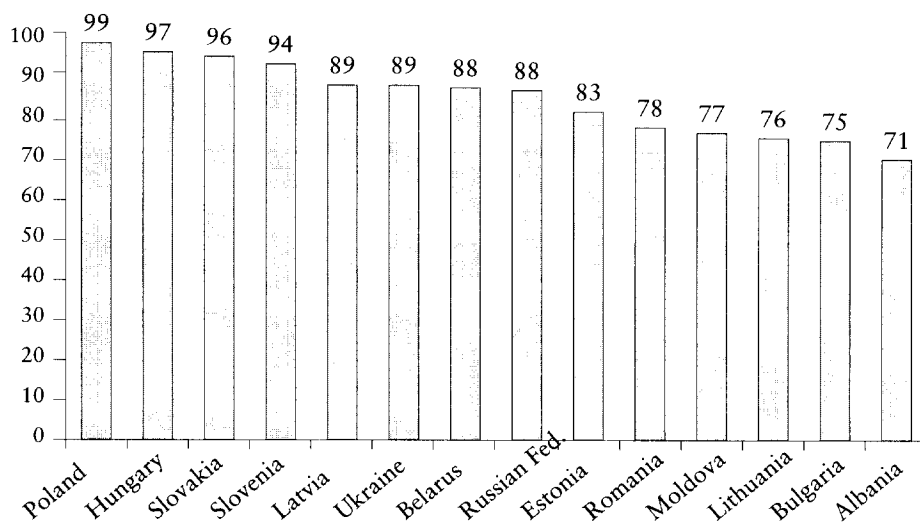
This section examines the aggregate trends in participation in secondary education in the 1990s. Central and Eastern European countries have long traditions, and well-developed systems of secondary education typically divided into two cycles: lower (3–4 years) and upper (2–4 years) secondary. Lower secondary is part of compulsory education and upon successfully completing it, young people typically have three possibilities for continuing schooling: general secondary,<sup>4</sup> technical schools and vocational-technical or apprentice schools. General secondary provides a broader and more academic education and is the main route to university study. Vocational and technical schools provide education and training more directly linked to the job market, with vocational training allowing fewer opportunities for study at the tertiary level.

In the 1990s, a number of major secondary education trends emerged across Central and Eastern Europe, including lower rates of participation and more school failure, changes in different streams of upper secondary education and more diversity in educational institutions.

In the past, practically every child was enrolled and completed lower secondary education. Although overall enrolment rates have remained stable, new evidence suggests that the number of drop-outs is rising among 13–15 year-olds. While it is difficult to measure the phenomenon directly, one proxy measure focuses on school completion. Figure 1 shows a theoretical lower secondary school graduation rate for fourteen Central and Eastern European countries. The figures represent the number of graduates as a share of 15-year-olds, 15 being theoretically the age at which most young people should complete lower secondary schooling. These data show a large gap between expected and actual graduates, and thus raise concerns about the efficiency and coverage of the education system. In 1996–97, almost all young people in Hungary, Slovenia and Poland graduated ‘on time’, whereas in the Republic of Moldova and Bulgaria, the figure was about three in four. In the case of the latter two countries, rates reflect a large decline compared with 1990, when they were 96% in the then Moldova and 88% in Bulgaria.

The opportunity costs of education, as opposed to contributing to household income via the informal sector or in home production, have become high, particularly among rural populations. In South-East Europe and countries of the former Yugoslavia lower secondary enrolments are lower in rural than in urban areas partly because agricultural work has become more labour-intensive with the break-up of

FIGURE 1. Basic school graduation rates, 1996–97 (number of graduates per 100 15-year-olds)



Note: The number of graduates is expressed as a percentage of the population at the theoretical age for graduation, which in this case is 15. The rate could be affected by school drop-out, late entry (i.e. after the legal starting age) and repetition of school years or other delays. Increasing repetition rates, which have been reported in a number of countries, would tend to lower the graduation measure.

Sources: UNICEF, 2000.

collective farms. Young people are engaged in household labour often in the form of subsistence farming or indirectly, being obliged to take on additional responsibilities at home in place of parents who are increasingly absent for economic reasons. This apparent rise in the non-completion of lower secondary schooling also influences overall trends in participation.

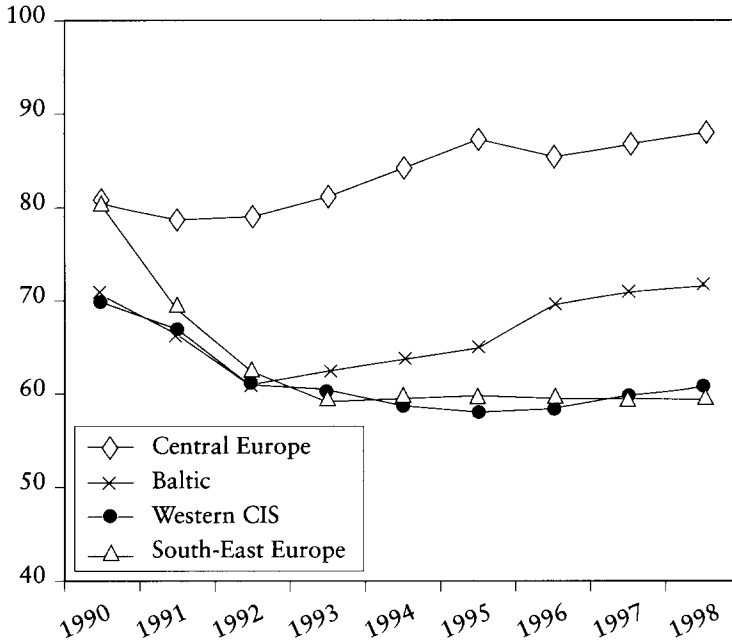
Figure 2 provides a rough approximation of aggregate enrolment trends by region in the 1990s. These data show that only in Central Europe did participation grow steadily during the 1990s. Elsewhere, the largest declines in participation took place early on in the transition period, and for South-East Europe and the Western CIS rates bottomed out in about 1995.

The data also show that while sharing a common starting point in 1990, the trends in Central and South-East Europe diverged considerably. In South-East Europe, buffeted by sharp economic shocks, participation fell sharply and remained at about 25 % below the 1990 level.

Likewise, the regional averages for the Baltic and Western CIS countries were roughly similar at the outset of transition, and experienced a similar decline in the following years. From 1993, however, participation rates began to increase in the Baltic countries, driven largely by strong growth in general secondary education.

Participation rates in the Western CIS have still not recovered, although individual countries have begun to record increased participation more recently.

FIGURE 2. Participation in upper secondary education by region, 1990–98 (number of enrolments per 100 15–18-year-olds)



Note: Unweighted national averages.

Sources: UNICEF, 2000.

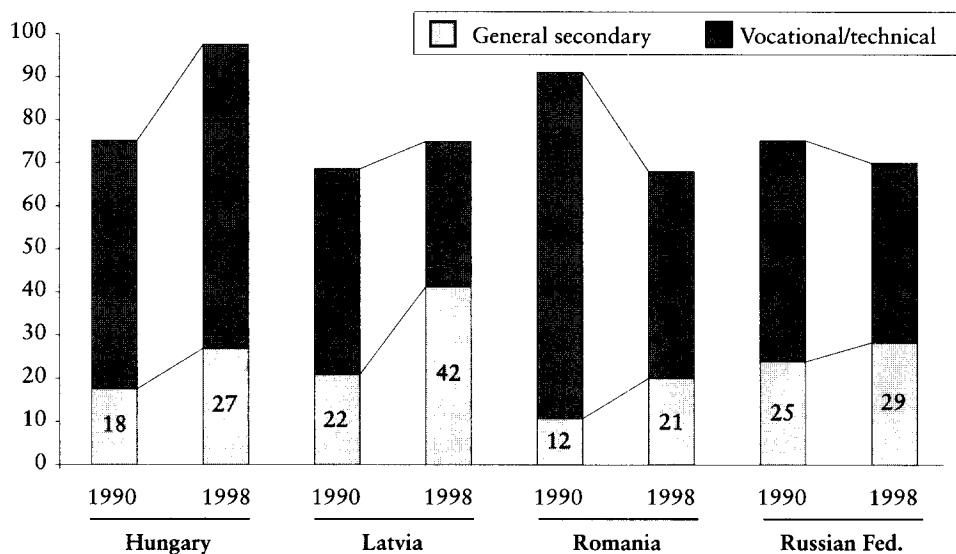
It is important to look beyond national averages to examine the distributional impact of changing participation. The probability of non-participation is often differentiated by both income and place of residence. In the Russian Federation, 45% of 16–18-year-olds in low-income households were not enrolled in school, compared with 25% of those in the high-income category. Likewise in Latvia, income differentials were related to continuing school both in urban and in rural areas. Children in the poorest families were three times more likely not to enrol in school than those in the richest families in urban areas, and eleven times more likely in rural areas.

Overall measures of participation also do not reflect the differences in trends among the varied upper secondary programmes. Falling numbers of enrolments in vocational/technical programmes contributed greatly to declines in overall participation. In the Baltic countries, the Western CIS and South-East Europe, the highly specialized vocational/technical training programmes have been considerably weakened by the decline of industrial enterprises and the withdrawal of ministerial funding from education programmes. Vocational training has experienced large declines in enrol-

ment rates and has attracted a dwindling number of new students. This is due primarily to supply factors, although demand has likewise declined, as a response to perceptions of education quality, relevance of coursework and changes in the labour market.

Figure 3 shows four patterns of shifting upper secondary enrolments: two where overall participation has increased and two where it has declined. In Hungary, increases in both academic and vocational streams have driven increases in enrolment rates, but in Latvia, vocational enrolments have fallen sharply, accompanied by rapid expansion of general secondary education. The capacity of the general secondary system to absorb such a large number of students is an issue, and pressure will be put on the tertiary system to accommodate those students who wish to continue their education. In Romania and the Russian Federation, where overall participation is down, the declines in vocational/technical enrolments are not made up for by general secondary enrolments, which suggests a greater proportion of out-of-school youth as compared with 1990.

FIGURE 3. Upper secondary enrolment rates by type of programme, 1990 and 1998 (number of enrolments per 100 15–18-year-olds)



Sources: UNICEF, 2000.

The increased competition for places in general secondary and elite technical schools is notable in most countries, often leading to growing numbers of applicants. Although entry is little guarantee of learning success, as illustrated by the fact that attrition rates are also substantial. In 1996 almost one in ten students abandoned their studies in vocational or general secondary schools in Hungary, Slovenia and Estonia.

The impact of the private provision of education in the region has been slight. The share of students in non-state programmes in 1996 was 6% of general secondary enrolments in Poland and 3 to 5% of vocational enrolments in Latvia, Ukraine and Poland. The influence of non-state schooling increases considerably at the tertiary level, particularly in non-degree programmes.

Declining enrolment rates are but a crude measure of the education process. What do direct measures of learning outcomes at the secondary level tell us about CEE education systems? How do students from different countries fare in terms of measures of formal learning achievement? Does this help to tell us whether students are getting what they need in order to succeed?

## **Monitoring learning achievement and literacy**

While education systems in the region have achieved positive results in expanding secondary education opportunities, their shortcomings have been widely cited. Generally, education systems have been characterized as rigid and centralized. Approaches to learning have been considered to over-emphasize rote learning and memorization rather than to focus on problem-solving skills. Teaching methods were seldom child-centred and did not stress the active participation of pupils in the classroom. At the same time, these methods showed positive results in terms of international student competitions, such as the Olympiads, or in terms of international assessments of mathematics and sciences. However, the emphasis placed on the high achievement of certain students has also led to the risk of diverting attention from addressing the educational needs of all students.

Evidence from two international studies conducted in the mid-1990s provides useful perspectives in assessing learning outcomes. The first tested mathematics and science achievement across both lower and upper secondary levels and the second measured youth and adult functional literacy.

The results from the Third International Mathematics and Science Study (TIMSS)<sup>5</sup> have been widely cited, particularly since they have shown that 8th grade pupils in Central and Eastern European countries were among the top performers in mathematics and sciences. However, the variations in achievement have been shown to be greater by family background than in many Western European countries.

At the same time, mathematics and science literacy was tested among young people in their last year of upper secondary school. By contrast, the performance of young people in participating CEE countries proved to be comparatively worse than the international average. Table 1 shows a striking difference in performance levels between lower and upper secondary schools, relative to those in other countries participating in the assessment. The only other country in which the mean achievement was better among 13–14-year-olds and worse among 18–19-year-olds was the United States. At both levels, the scores of both the United States and Lithuania were worse compared with the international means.

TABLE 1. Mathematics and sciences performance among 8th grade students and young people in the final year of secondary school, 1995–96 (percentage difference from the international average)

	Mathematics		Sciences	
	8th grade	Final year of secondary school	8th grade	Final year of secondary school
Czech Republic	53	-34	59	-13
Slovenia	30	12	45	17
Hungary	27	-17	39	-29
Russian Federation	25	-29	23	-19
Lithuania	-33	-31	-38	-39
United States of America	-11	-39	20	-20

Note: 8th grade students were generally 13 or 14 years old; the average age of young people in their final year of secondary school ranged between 17 and 19. Averages were based on all country means of the twenty countries that took part in the separate assessments for the 8th grade and for the final year of secondary school.

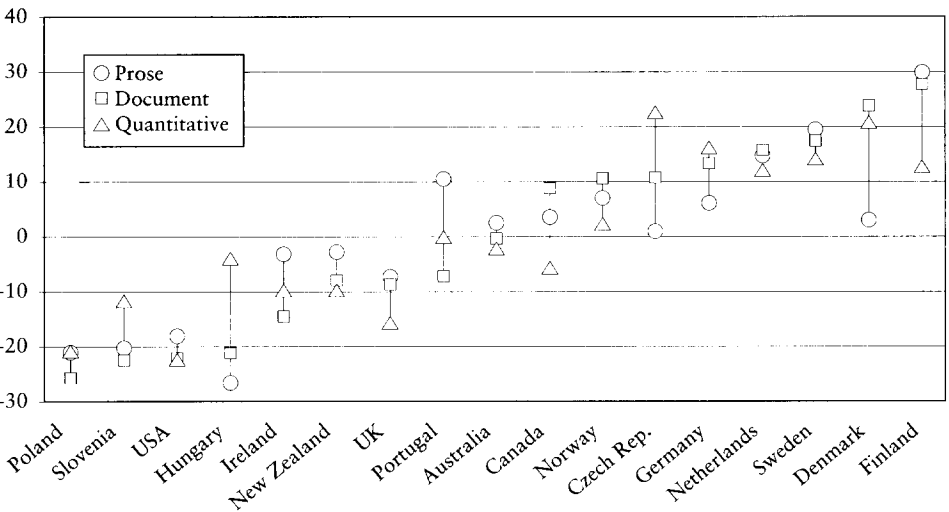
Source: Mullis et al., 1998.

Very few countries regularly monitor national achievement so as to capture change over time. One exception is Hungary, where between 1991 and 1995 studies modelled on the surveys by the International Association for the Evaluation of Educational Achievement (IEA) revealed a deterioration of reading and mathematics skills among 8th grade students. Moreover, they showed that achievement levels had improved in Budapest and larger urban areas, while worsening in town and village schools. Some have attributed these changes to the effects of decentralization and the inability of smaller municipalities to raise sufficient resources to meet needs.

A secondary education system has broader goals than simply enabling the acquisition of specific academic skills: it also aims to ensure basic literacy and numeracy skills; work-related skills that include more broadly considered life skills; and a contribution to self-development. To complement curriculum-based assessments, new studies have focused on the extent to which young people and adults have acquired basic functional literacies. One such study—the International Adult Literacy Survey—assessed three domains of literacy: prose, document and quantitative literacy<sup>6</sup> in twenty-three countries in the 1990s. It was conducted in four CEE countries—the Czech Republic, Hungary, Poland and Slovenia. As shown in Figure 4, the mean quantitative literacy achievement among young people in the Czech Republic was highest overall, and achievement in the other two domains was above the international average. However, scores in the remaining three countries were comparatively worse than the corresponding scores in Western European countries in all three domains.



FIGURE 4. Prose, document and quantitative literacy achievement scores among young people aged 16–25, 1990s (percentage difference of national score from the respective international mean)



Note: Scores ranked by document literacy achievement scores.

Source: OECD, 2000.

While it may be suggested that these results reflect an education system already facing the deprivations of the early transition period, they also reflect a historical legacy extending back further in time. Moreover, the implications sound a warning for the future: low levels of applied literacy skills do not bode well for countries seeking to develop high-skill sectors of the economy.

Assessing the relevance of secondary school content

There has been much debate, and a virtual redirection of education policy and curricular development, responding to global economic and social realities in the 1970s and 1980s, which has literally passed many transition countries by. New paradigms have emerged in what is taught, how it is taught and where it is taught, with flexibility, adaptability and diversity the key guiding principles. This has included the introduction of broader skill competencies and applied learning skills into school curricula, the rejection of passive methods of learning in favour of child-centred ‘active’ methods and the increasing acceptance of non-formal education. Also, there has been a larger system-level paradigm shift from the notion of education supply to education demand, and assessment of the quality of learning and the accountability of the school system have become paramount.

A commonly held view of the secondary school systems inherited from the past is that too much stress was placed on educational paths that led to narrow special-

izations and a deficit of broader-based learning through general secondary schools to meet the needs of new market economies. In fact, reducing the number of specializations was among the first reforms implemented in Central and Eastern Europe.

Broad economic and social change has led to the increasing influence of technological change and globalization, and there has been a growing interest in the education system's role of enhancing broader, more flexible programmes which stress adaptability or competencies with respect to individuals.

Certainly, the collapse of the centrally planned economies has resulted in a significant weakening of the former often strong, if rigid, link between vocational and technical schools and the workplace. Changes in the structure of economic production, the appearance of new forms of work organization, and the opening up and globalization of the economy have made some skills and specialized knowledge obsolete and have created a demand for others, such as language skills and computer literacy.

How have education systems in the region changed to respond to the new needs of the economy? Most countries have started to reform the vocational/technical school curricula. In these countries, there is a move away from specialized knowledge towards transferable skills that can be adapted to various work requirements and are therefore more appropriate for a market economy. There is a notable shift towards a more balanced selection of general education subjects, theoretical instruction and training in practical skills. In many countries, there has been an effort to increase emphasis on information technology throughout the education system. While this represents only one part, and often a contentious part, of school curricular reform, it helps to illustrate some of the difficulties faced by Central and Eastern European countries in responding to the new demands placed on secondary systems.

The move towards knowledge-based societies, which has been enabled by recent technological advances, is making computer literacy a basic skill for both work and learning. In many countries, children have access to computers as early as primary school. However, the emergence of a 'digital divide' within and among countries is widely recognized.

Although there is still serious debate about the real impact of information and communication technology (ICT) on teaching and learning, access to ICT does provide certain benefits. First, it can complement and reinforce classroom learning, build self-esteem and academic skills, and make learning more fun, leading to less absenteeism and a lower drop-out rate. Outside the classroom, the Internet can be used as a tool for gathering information, and improving foreign language reading skills and technology and information skills, and as a way to network with peers at home and abroad.

Some governments have made large-scale commitments to providing schools with computers and Internet connections. In Hungary, for example, the Schoolnet (*Sulinet*) programme has supplied secondary schools with computers and Internet access. A 1998 survey found that nearly two-thirds of 15–24-year-olds had some computer skills.

However, levels of computer literacy among young people are much lower in a number of countries in the region. Equipping schools with up-to-date computers is a serious problem, especially given the rapid pace of technological change. Although there have been enormous efforts in recent years to make improvements, the situation in schools in some countries is often unsatisfactory.

In the Republic of Moldova, only half of secondary schools, gymnasiums and lyceums have computer classes and other computer equipment. In addition, it is a challenge to provide a sufficient number of trained teachers. In the Federal Republic of Yugoslavia, for example, many schools have modern computers, but there are few adequately trained staff to make the most of them. People with computer skills tend to choose higher-paying jobs than teaching and many emigrate. Finding qualified teachers also presents a serious difficulty in Croatia, where two-thirds of all schools have a trained computer teacher.

Even in better-off countries, the 'digital divide' is apparent within countries. In Hungary, while 81% of those receiving education and 54% of young workers have computer skills, only 35% of unemployed persons and 25% of young people who are neither studying nor working have any computer skills, which thus potentially limits their opportunities.

Relatively few households in the region have computers, and they tend to be ones with higher incomes and fewer children. Schools can play a very important role in reducing the inequality in access to computers. In particular, targeted interventions may help achieve and maintain the social integration of disadvantaged youth.

The problems faced by countries in introducing ICT into schools highlight the general obstacles facing curricular reform in Central and Eastern Europe. A recent European Union survey of upper secondary vocational programmes in Central and Eastern Europe found that they often lack qualified teachers and trainers and have outdated learning materials and equipment. In their efforts to reform curricula, most of these countries face a lack not only of funds, but also of expertise. Addressing these issues, as well as facilitating the transition of young people, especially those who are disadvantaged, from school to work and from family to society, remain the main challenges over the next decade.

## Conclusions

Changes in secondary education reflect the broader context of social and economic flux in Central and Eastern Europe. Despite budgetary constraints, large-scale changes in the legislative framework of secondary education have been made in many Central and Eastern European countries. However, the challenge is now to further define specific national needs, despite the fact that some issues, such as changing labour markets and growing informal sectors, may still provide only weak signals to planners. The challenge is also to implement changes: to refine new national curricula, occupational standards, and evaluation and examination systems; to widen pathways to continuing education; and to improve links to the labour market. This

requires monitoring of the progress and impact of decentralizing management and funding responsibilities, and the development and institutionalization of social partnerships. Finally, in order to ensure the successful integration of new curricula and institutional structures and to promote positive learning outcomes, greater attention will need to be focused on improving the education infrastructure, and especially on training/retraining teaching personnel. The latter will be central to success in implementing new curricula at school level and in the evaluation and examination system.

## Notes

1. This paper draws on data and analysis prepared for several United Nations Children's Fund (UNICEF) reports monitoring social welfare and public policy in Central and Eastern Europe. For further information on reports and the MONEE project database, see [www.unicef-icdc.org](http://www.unicef-icdc.org).
2. For the purpose of this article, the term 'Central and Eastern Europe' corresponds to the regional groupings used by the Education for All Forum. The groupings, and the countries referred to, are as follows: Central Europe: Czech Republic, Hungary, Poland and Slovakia; Former Yugoslavia: Bosnia and Herzegovina, Croatia, Federal Republic of Yugoslavia, Former Yugoslav Republic of Macedonia, and Slovenia; South-East Europe: Albania, Bulgaria and Romania; Baltic: Estonia, Latvia and Lithuania; Western Commonwealth of Independent States: Belarus, Republic of Moldova, Russian Federation and Ukraine.
3. Ten countries are now being considered for membership of the European Union: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.
4. General secondary schools—often called *gymnasiums* or *lycées*—offer a four-year programme of academic study, with entry on a selective basis. These schools provide the main route to higher education. (In a number of countries, gymnasium streams begin at lower secondary grades.) Technical schools (technical *gymnasiums/lycées*, '*tekhnikums*') offer three- to five-year programmes of technical study leading to a diploma and the opportunity to continue studying, including such subjects as medicine and engineering. Vocational schools (known in the former USSR as professional-technical institutions (PTUs) and in Eastern Europe as apprentice schools) provide vocational courses of one to three years or more.
5. The TIMSS study was conducted in forty-one countries in 1994 and 1995. The upper secondary study was conducted in twenty-one countries, including five Central and Eastern European countries.
6. The three domains of literacy skills are described as prose literacy—the knowledge and skills needed to understand and use information from texts, including editorials, news stories, brochures and instruction manuals; document literacy—the knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transport schedules, maps, tables and charts; and quantitative literacy—the knowledge and skills required to apply arithmetical operations, either alone or sequentially, to numbers embedded in printed materials, such as in balancing a cheque book, calculating a tip, completing an order form and determining the amount of interest on a loan from an advertisement. For further information, see OECD (2000).

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# SECONDARY EDUCATION REFORM

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## CONTINUITIES

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## AND DISCONTINUITIES

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## IN SECONDARY EDUCATION

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## IN WESTERN EUROPE

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*Manuel Joaquim de Azevedo*

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### Introduction

Today, secondary education<sup>1</sup> is on the political agenda of several governments in Western Europe. Situated between education for all and an increasingly open system of higher education, *secondary education and training*<sup>2</sup> is in the throes of an identity crisis.

### Context

The economic downturn triggered by the 'oil crises' of the 1970s had widespread social repercussions and strongly affected education and training policies, particularly with regard to secondary education in Europe. The surge in oil prices and the subsequent inflationary spiral launched a restructuring of the capitalist economy,

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which turned out to be lasting and whose impact is far from over (Crozier, 1995, p. 22; Hobsbawm, 1995, p. 286).

However, it was in particular with the decline in growth rates, widespread and accelerating automation and the fresh momentum of capitalist restructuring that unemployment began to rise, having been quite restricted in the immediately preceding decades, and to hit the young hardest, especially women. Gradually, what appeared to be a short-term phenomenon—frictional unemployment or even Keynesian and conjunctural unemployment (Lesourne, 1996)—began to look like a structural social phenomenon.

The persistence of unemployment, which particularly affected young people just entering the job market, had a major impact on secondary education in Western Europe in terms of both supply and demand in the ensuing twenty years, even though the causes were often more or less obscured in political debate. Very frequently, youth unemployment problems were transformed by means of reform measures into educational problems (Tanguy, 1995; Ginsburg & Cooper, 1991).

In the 1990s, the market economy was expanding world-wide almost as an economic inevitability, especially after the fall of the Berlin Wall and the dismantling of the Soviet empire. The market was becoming globalized and developing a leading-edge business sector, one which broadly incorporated the new information and communication technologies and was highly competitive, dominated by the major world industries. At the production level, technological substitution maintained a strong pace, industrial processes were streamlined to cut production costs, and unemployment levels not only became a permanent feature but now also affected even the most highly educated. Furthermore, graduate underemployment grew in step with unemployment and, what with higher education being gradually turned into mass education, this trend was bound to accelerate (Halls, 1994).

For young people belonging to the age group in question, it was becoming increasingly difficult to envisage getting their first job and to imagine how long that job would last, to what extent it would correspond to their specialized training, the nature of the employment contract, how often they might have to change jobs or occupations during their working lives, and the amount and kind of knowledge and skills updating they would have to have during their careers. They even began to wonder if it still made sense to speak of a 'career' in the traditional sense of expecting stability, security, upward progress and continuity. 'What began was an era of change, as a social category of personal experience and social organization' (Touraine, 1997, p. 23).

## **A new economic mandate**

The underlying rhetoric of education policies underwent change in the transition from the 1970s to the 1980s. What has developed since then over the past few years is a significant technical and political approach which, in the light of intense economic restructuring, holds that 'mass production and the Taylorian organization of work associated with it are becoming increasingly dysfunctional owing to their rigidity

and lack of adaptability' (Kovács, 1991, p. 116). The capitalist economy is thus supposedly evolving towards post-Taylorian and flexible systems of production.

This technical-economic approach also predicts that the discontinuous and gradual movement from a Taylorian towards a post-Taylorian production model will be associated with broader and more complex tasks at work, teamwork, independent control of task execution by work teams, linkage of the tasks of design/control and execution, autonomy and greater accountability of work teams, with more reliance on broader technical, theoretical and empirical skills, and the ability of every individual to adapt to constant change.

This dominant approach is particularly optimistic about the impact of capitalist economic restructuring, production patterns and work organization. It is thus postulated that the 'new productive system' is based on the intensive use of knowledge and is a potential way of generating greater human achievement through work, which today calls for a new 'collective intelligence' (Brown & Lauder, 1995).

This new context obviously has implications for employment. The major trends are as follows: (a) a rise in unemployment, which has exceeded 20% of the working population in several developing countries; (b) extensive movement of the workforce into the tertiary sector and a decline in industrial employment; (c) increased employment in more highly skilled jobs and a rise in recruitment of highly qualified professionals; (d) the projection of a great shadow of doubt over employment and career prospects regarding the types of occupations to be exercised during one's working life, the duration and content of each professional activity, and the type of employment contract; (e) increasingly precarious contractual ties, greater flexibility in career management, greater mobility within and between industries; and (f) the gradual development of self-employment and distance work.

Perhaps the most obvious of these trends, and the one with the most powerful social impact, is the growing dualization of the labour market. On the one hand, there are the active elites or the symbolic analysts, the self-programmable and highly productive (Reich, 1991; Castells, 1998); on the other hand, there is non-specific work and an ever-expendable mass of workers who, increasingly insecure, circulate among the available jobs. School education, far from having nothing to do with it, is actually central to this great rift.

If to the changes in production we add those arising from the new effects of the accumulation, transmission and use of information and the general impact of the new information and communication technologies, 'what is most important is the general recognition that knowledge constitutes the most important variable in explaining the new forms of social and economic organization' (Tedesco, 1997). As a producer and distributor of knowledge and credentials, the education system acquires a new and 'historically unprecedented' centrality (*ibid.*).

In response to the restructuring under way, an approach is being formulated with emphasis on the role of education and training in producing a corpus of general and vocational knowledge and skills which, traditionally, have not been developed by the educational models providing preparatory training for productive work. Such models were usually too concerned with developing technical qualifications and



focused on job specialization. We call this the 'new social mandate', of a highly economic complexion, relating to the skills required by workers entering the job market and to the corresponding system of education and training.

Before continuing our analysis, we will look at what constitutes secondary education and training in Western Europe.

## Reference models

As we know, Western Europe presents a certain degree of diversity in its national education systems, depending on the local social infrastructures and political options of the various countries. Three main models of secondary education and training cohabit in Europe: academic, dual and non-formal. These models are not mutually exclusive. In some cases one of them predominates; in others two may exist side by side; and in still others, all three may cohabit within the public and private sectors of one and the same national education system.

The *academic model* of secondary education refers to institutions whose programme is usually divided into three branches: general/academic, technical and vocational. In this model the curriculum is exclusively, or almost so, based on the location of the school. The Ministry of Education is responsible for this sector, although there has been a recent trend towards sharing this responsibility with other government divisions and social actors.

The *dual* or '*alternate training*' (sandwich courses) *model* involves the provision of initial vocational training, with students alternating between an education-training centre and the business world. The responsibility is shared three ways—by workers, businesses and government. The courses lead to certificates recognized by the latter two parties.

The *non-formal model* encompasses a range of training and employment-training programmes in which both the State and industry have a hand, with courses lasting more than one year and shorter courses. This sector tries to offer an alternative to academic studies and unemployment and is targeted at young people who have already left the school system and who wish to learn a specific skill enabling them to enter the job market. This model is not to be confused with non-formal education, since it refers to organized and systematic training expressly intended to provide specific skills and planned as such, and usually targeted at particular population groups.

Underlying these different models are, *inter alia*, different ways of perceiving the social function of secondary education and training.

Table 1 presents the three models, classified according to the principal goal, the special 'locus' in which the training takes place, the responsibility for and control of what training is on offer, and the type of qualification conferred. To an ever-increasing extent, almost all countries in Western Europe use the three forms of education and training as a way of broadening their educational services and meeting a massive and socially very mixed demand. Depending on the national context, however, either an 'educational' or a 'vocational' culture prevails.

TABLE 1. Comparison between principal models of secondary education and training (16- to 19-year-olds)

Model	Prime training 'locus'	Initiative/supervision	Certification	Principal goal of courses
Academic	Full-time education	Supervised by the Ministry of Education	Academic and sometimes vocational certification	Educational and 'transferable' <sup>a</sup>
Dual	Initial vocational training, alternating between school and industry	Joint guidance by Ministry of Education and industry	Academic and vocational certification	Occupational <sup>b</sup> and final year of general secondary studies
Non-formal	Short vocational training in school and industry for access to employment	Supervision of tripartite organizations and industry	Usually no certification (or an exclusively vocational certificate specific to each agency)	Occupational <sup>b</sup> and final year of general secondary studies

*a* = Transferable = the education and training methods included here are designed to prepare students to continue their education and training at the post-secondary and higher level.

*b* = Occupational = when the principal goal is training for immediate employment.

## Reform trends in the 1990s

Initial trends in the reforms affecting secondary education and training in Western Europe are the merging of previously separate training courses and branches, the elaboration of new core curricula offered mainly in the first years of the courses, and de-specialization or reduction in the number of special subjects taught in technical and vocational branches (Santos, 1989; Garcia Garrido, Pedró & Velloso, 1992; Leclercq & Rault, 1992; Pedró, 1992, 1995; Papadopoulos, 1994; Williams, 1994; Azevedo, 1998).

Curriculum integration is the principal driving force behind this general trend. The trend takes various forms and is present to varying degrees, depending on each country's social context and educational history. While in some cases integration aims at establishing a single type of secondary school, as in Sweden, in most cases the result is a 'sub-structural convergence' model (Kämäräinen, 1995) where, in fact, the various branches and the different types of education and training institutions coexist and only parts of the curriculum are integrated. This process encompasses a wide variety of possibilities—ranging from the duration of the courses, via the organization of the curricula into identical components for all branches, to the possibility of attending more than one kind of school to complete a single programme of secondary education.

De-specialization is characteristic of the curriculum of initial technical and vocational education and training. Table 2 presents some of these situations.<sup>3</sup>

TABLE 2. De-specialization in technical and vocational education in Europe<sup>a</sup>

Country (main year of the reform)	No. of special subjects before the most recent reforms	No. of new areas of training and specialization
Denmark, 1990	(~) 300	85 (basic courses, with gradual specialization)
Finland, 1991–99	(~) 600 (early 1980s)	26 (basic courses, with gradual specialization in up to 157 specific fields)
France, 1992	7 (general education) 16 (technological education)	3 (general education) 4 (technological education) <sup>b</sup>
Italy, 1992	140	18 courses
Norway, 1994	109	13 courses (with gradual specialization)
Sweden, 1991	(~) 500	16 basic courses
Portugal, 1993	33 courses	11 courses <sup>c</sup>

<sup>a</sup> = Spain, Netherlands and Switzerland have used other approaches to introduce integration. In Spain, the number of special subjects in the new vocational training system has increased.

<sup>b</sup> = The vocational baccalaureate (1985) was organized into 32 areas of specialization in 1993.

<sup>c</sup> = Vocational training schools were introduced in 1989.

There are two main types of integration and specialization strategies:

1. The first strives to achieve structural integration between the forms and institutions of general education and of technical and vocational training, providing young people between the ages of 16 and 18 or 19 years with a curriculum that is as fully unified as possible, combining theory and practice, academic education and vocational training. The strategy also fits in with a policy to establish parity between the more vocationally oriented training programmes and the more distinctly general and academic educational programmes. It should be borne in mind that the unity sought by this type of education policy is far from resulting in the availability of a single curriculum, namely a general and common secondary education curriculum. While increasing emphasis is clearly being placed on the provision of a general and universal core curriculum, each young person is still free to construct their own programme on the basis of the remaining, more optional, curricular choices. Thus, while integration is a clear and undoubtedly growing trend, there is also more freedom of choice and curricular flexibility.

2. The second brings together a broad variety of sub-structural integration measures, leaving aside—at least for the time being—the integration between educational and training establishments, which generally have very different backgrounds. The essence of this strategy is to break down barriers and bring together educational streams previously differentiated and compartmentalized. The goals of the strategy are, in general, to make courses more versatile, to permit movement between the various branches and to ensure their legal parity.

In addition to these rather widespread trends in the recent history of secondary education and training, there are others that are concomitant and shared by several Western European countries:

1. The persistent long-term trend towards longer schooling, which consists of increasing the length of the unified study cycles and the consequent prolongation of the basic cycle, which is common and compulsory, as in the cases of Italy, Spain and the Netherlands, including raising the age at which students must choose between various training branches.
2. The creation of new systems for moving freely between the various educational and training branches, both general and vocational, by establishing passages between the courses. This has been accomplished with varying degrees of difficulty during the transition phase. Countries introducing this system include Spain and France—albeit very rigidly—and Denmark, Sweden, Netherlands and Finland, the latter country being the most flexible.
3. The creation of new core programmes, similar for all branches of secondary education and training, generally lasting one or two years, after which specialization in a particular branch may be chosen, with the degree of specialization varying according to the country. This reformist path was particularly evident in Denmark, Finland, the Netherlands, Norway, Sweden and Switzerland.
4. The transformation of the secondary education and training curriculum into a model of several components, the first of which is the whole set of general subjects taken by all students, followed by a specific selected course of study, an optional individual course and, in some cases, practical training in a company, which has to be arranged by each school. In Finland, France, Italy, Norway, Sweden and Switzerland students must also complete an individual project or attend a workshop.
5. The actors involved, and employers in particular, are in several countries beginning to play a more direct role in drawing up the secondary education and training curriculum—nationally, regionally and locally. These partners are increasingly prominent in Denmark, Finland, France, Italy, the Netherlands, Norway and Spain. This trend is frequently associated with the decentralized administration of these segments of education and training and a greater autonomy for schools and training establishments. This is the case, to varying degrees, in all the countries mentioned above.
6. Expansion of the options available to students after they complete their compulsory education through the establishment of a vast range of training programmes and courses and the adoption and forging of links between the academic, dual

and non-formal models, with a view to serving the largest possible number of young people in the corresponding age groups. Most countries are combining the merging of education and training modalities with greater internal diversity of options and courses.

7. Some of the reforms discussed in this paper have introduced into the curriculum compulsory periods of work experience of varying lengths. These are designed for students seeking a technical and vocational diploma. This movement is particularly strong in Denmark, Finland, France, Italy, Spain and Sweden.
8. Lastly, several countries have emphasized in their reform policy the goal of introducing greater flexibility in secondary education and training. Flexibility is related to a number of aspects: the possibility of combining subjects from different types of programmes and even schools—Finland being the extreme example; the permeability already mentioned between branches and courses; the need to respond to the diversity of interests and skills of young people and to their needs for guidance—as demonstrated in the cases of France, Norway and Switzerland; the need to bring certain third-cycle and optional course components more into line with the local needs of the productive sector—as in Norway; enabling schools to organize separate courses based on a specific set of criteria—as in the case of France.

## A pressure cooker

The crisis in secondary education and training in Europe reflects the—possibly insurmountable—tensions and conflicts breaking out around and within it. Some of these tensions are notable for their contemporary relevance and their links to recent reform trends in secondary education and training.

1. The tension between a *selective function* and a *social function*, relating to the promotion of human development for all young people. From a diachronic perspective, and taking an idea of Martin Trow (1978), the predominant trend in European public education for youth in the 16- to 19-year-old group is the 'lycée matrix' or education traditionally designed for an elite and serving as an introduction to higher education.

As this age group failed to gain access to the job market and the demand for secondary education increased, bipolarization began to grow: on the one hand, education and training viewed as preparation for higher education—university or otherwise; on the other, a more multi-dimensional view of education and training in which preparation for further studies coexists with other relevant social functions and in which secondary education and training finally acquire greater autonomy, with their own educational goals.

This bipolarization may also be analysed as a tension between mass secondary education—a second stage in universal and compulsory education, which brings the secondary level increasingly closer to the organizational goals and configurations of basic education—and a popular but strongly hierarchical higher-education system

which leads to the top-down organization of the secondary level, a regressive structure determined by the goals of stratification and selection of young people in relation to access to the high-level degree programmes.

Nevertheless, this level of education and training has perceptibly developed more as a container expanding in a linear fashion to accommodate the growing demand than as an array of modalities and branches genuinely and qualitatively oriented towards meeting the pressure of socio-cultural diversity or towards promoting the various facets of human development in each young person.

Between the more explicit mission of the secondary level, which is set forth within a promotional, democratic and pluri-dimensional referent (cf. the legal instruments establishing them), and the more implicit and usually unstated mission, there is an enormous conflict which confuses and disorients policy-makers and the occupational circles involved and which, as a result of being hidden and not open to debate, results in a loss of consistency, quality and relevance in the education and training available.

2. The enormous tension between a selective mission and one seeking to encourage the development of each young person is reflected in other conflicts typical of secondary education and training. Noteworthy among them are the conflict between *preparation for working life* and *preparation for higher education*, and the conflict between academic and technical streams: lycées and technical and vocational schools.

Although not readily apparent, the tension between these different poles is reflected in the debate on the selective mission of secondary education and training. In fact, if education and training were to be organized around students' daily life and the development of multiple skills, within a multidimensional perspective, as preparation for free and responsible citizenship and for the exercise of a great variety of social roles (occupational included), and as a means of encouraging the construction of personal life projects, the 'major' question of whether secondary education and training should prepare young people for working life or for higher education, and whether they should go to lycées, or technical or vocational schools, would become completely subordinate and almost irrelevant.

At this stage of human development, where orientation and the quest for personal identity constitute a central educational question, any type of school and all branches of education and training must serve this essential objective.

The predominance of selectivity is clearly visible in the type of differentiation promoted, on the basis of different types of curricular organization and various systems of examination and access to higher education, which necessarily give rise to different kinds of social demand for the different arrangements.

In the end, preparation for working life may even—where such training is not too specialized and dependent on specific job profiles—prove to be a more relevant educational goal than preparing youth for higher education. In fact, such preparation often just means socializing young people into the hidden curriculum and implicit purposes of adaptation to the established social order.

The 'logic' of secondary education as preparation and secondary education as an end are thus confronted within the selective context of secondary education and

training, which tends to occupy the entire arena of the debate, leaving room for little else. Moreover, these same 'logics' continue to keep education locked into an impersonal and collective socializing function.

3. Tension arises between a *unifying perspective* and a *perspective in which branches and institutions are differentiated*. Furthermore, there is a great variety of traditions and situations regarding the time at which diversification occurs, with models of both early and late diversification, and the kind of integration and unification sought and what is actually achieved.

Secondary education in Western Europe is generally diversified; there are, nonetheless, increasingly insistent and controlled movements to bring the various branches and courses more closely together, thereby reducing diversity. This is true, for example, of the reforms already mentioned that seek to reduce the number of special technical and vocational courses and to increase the general academic education subject range.

Attempts at integration and unification very often achieve little more than better juxtaposition of the various branches and courses, either by nominal grouping or through convergence between the study programmes, without significantly altering the relations between the different branches and types of schools and, above all, between different types of diplomas and the status associated with them (Kämäräinen, 1995).

Furthermore, in several Western European countries, as the integration and unification—both curricular and institutional—of this segment of the education system progress, diversification tends to be transferred to the next higher level, post-secondary and higher education, where new forms of training and diplomas are being introduced.

Integration and unification are looming larger politically, moving into the forefront of the bid to legitimize secondary education reform. This trend rests on three main foundations:

- (a) Politically speaking, more emphasis is being placed on the economic contention that the widespread use of the new information and communication technologies calls for an increasingly skilled workforce. And such is the speed and scope of the changes occurring in production systems, what is being produced, markets and the organization of work that it is essential for initial education and training programmes to move increasingly in the direction of general, multi-purpose training capable of promoting the acquisition of 'general and transferable skills' (Organisation for Economic Co-operation and Development, 1989). Training of this kind, it is asserted, is the only way to prevent knowledge and skills from becoming obsolescent during the course of the unpredictable careers that are taking shape today.
- (b) This economic argument tends to be reflected in educational reforms seeking to reinforce what is known as 'general' (more precisely, academic) education, or the socio-cultural training of young people. This is seen as a means of ensuring the multi-faceted skills and adaptability that future professionals need in order to enter the job market.

- (c) In response to the shrinking of the first-time job market and the attitudes of employers and their specific recruitment strategies,<sup>4</sup> there is an increasingly strong social demand (notably in Germany, where the 'dual' model prevails) for a greater number of general or academic programmes, not because they are more educationally relevant but, more precisely, because they lead more directly and rapidly to the highest academic credentials, which are indeed the main bulwark against unemployment and the key to social mobility.<sup>5</sup>

This line of reasoning has been given tangible form in what some authors call 'neo-professionalizing reforms'. 'Neo-professionalism' is a recent movement in European education policy which is based on the four lines of emphasis already mentioned, which can be encapsulated as follows: (i) fewer special technical and vocational subjects; (ii) the introduction and strengthening of universal core training curricula and a significant increase in general academic education in all those branches; (iii) the establishment of new systems of equivalent rating and the creation of passageways between courses and branches; (iv) the development of a vast range of courses and forms of secondary education and training, creating a new and extensive education market for young people aged 16 to 18 or 19 years.

Likewise, neo-professionalism is credited with instilling a belief in the potential of curriculum flexibility and in new interchanges between the general and vocational components, either as an antidote to a certain technical determinism, opening up a new understanding of work and its ethical, cultural, political and economic configurations or bringing a more socially diverse group of young people into an education system with a broadened scope.

The neo-professionalist ideology shares with traditional professionalism two important characteristics: (a) it is entirely optimistic as to the capacity of technical education and vocational training and of all training for work and careers to bring about change, while keeping the education system in a functional and occupationalist milieu; (b) it also maintains the dichotomy between general education and technical and vocational education, using various policy mechanisms to diminish the separation between the general and the vocational sectors. In a sense, it might be said that, what with a post-Taylorian production mode and new forms of organization of work, neo-professionalist reforms are in a state of tension; yet, on the other hand, they seem to keep the academic and the occupational arenas apart. In Europe, less social stigma attaches to the kind of secondary education that is related more closely to the world of work. There is a move to create 'clean' secondary education and training, without offices, without professional specialization, greaseless and without mechanical lathes, serving as a prelude to further study and designed to keep young people out of the job market for as long as possible.

### **The promising ambiguities of the reforms: from neo-professionalism to meta-professionalism**

Another concept that is related to the previous ones and strives to resolve some of the dilemmas posed by them is 'meta-professionalism'. Meta-professionalism corre-



sponds to another phase in the evolution of education systems, where the 'student/trainee' is no longer regarded as the central focus of the interplay between the economy and the production of skills, but rather as the subject who wants and is also able to construct his or her social status and other types of relations between those social arenas. The meta-professional perspective questions and casts doubt on neo-professionalism, including its bid to bring vocational education closer to general academic education, using a more realistic framework to analyse the relationship between education and economics.

The history of secondary education and training in Western Europe is a long social process in which innumerable questions and answers have been formulated about the usefulness of this level of education and training, in a constant quest for multiple supporting arguments. Technical-economic functionalism, linked today with the rhetoric of globalization and a new economic mandate, remains as the principal referent of educational reform at this level.

There is, however, in addition to that referent, a significant cultural referent subsumed within a humanistic rationality emphasizing the personal development of young people, more all-round training and the strengthening of 'general' education, and essentially endorsing functional support for secondary education and training.

In this context, the logic is closer to a cultural mandate whereby various social actors (parents, teachers, decision-makers, reformers) attribute to secondary education and training a multi-dimensionality which is an integral part of a humanistic referent, incorporated into European culture, which assigns to education the fundamental goal of human development. This does not make the neo-professional reforms, as educational policies incorporated into this humanistic and necessarily multi-dimensional matrix, any less ambiguous. The 'new general culture' referred to by Jean-Marie Domenach (1989, p. 143)—and the question of who should profit socially from secondary education—is not based on or reflected in a specific curricular 'corpus' depending, for example, on its productive and economic utility, but is justified as an educational platform seeking to promote human development as the ultimate end of development (Delors et al., 1996). It is for this new general culture to achieve the higher goal of bringing out the authenticity in every individual and to educate creators rather than subordinates (da Silva, 1990).

However, to the extent that the renewed recognition of 'general' training is equivalent to a defensive reinforcement of education and training around academic education and a more integrating form of specialization (Young, 1993), the humanistic approach of the neo-professional reforms does not actually mean the establishment of a new culture, but rather a better pseudo-cultural educational accommodation and adjustment, both to a post-Fordist sector of the economy and to the new social demand. The dichotomy between general and vocational education remains. General academic education, with its traditional elitist profile, as the product of a powerful general abstract consensus, apparently without paternity or place, emerges as the best way to carry out the new vocational training and develop the new skills.<sup>6</sup> This was probably not the intention of the reformers, but these seem to

be the practical directions, as demonstrated moreover by many empirical analyses carried out since the 1970s (e.g. Foster, 1978, 1992).

What these neo-professional reforms confront, and only resolve in a very limited way, is the need to reorganize the actual pattern of educational institutionalization, traditionally linked to academic rationalism and economic rationality, redefining the place of ethical, aesthetic, general, technical and vocational training in the development of physical and personal expression, and the place of preparation for leisure and for business (non-leisure). The reorganization of this pattern of institutionalization will, it seems, have to take place—locally, nationally and globally—within a rationality that calls for the renewal of political thinking in all those respects.

At the fortieth session of the International Conference of Education (1986), it was already being recommended to the Member States of UNESCO that they restructure their secondary education systems, going beyond their traditional academic orientation, and linking, in a new balanced, harmonious and diversified system, the general, technical and vocational education that together formed the education for every individual. As Roland Paulston put it in 1992, we need an ecumenical rather than a separatist spirit. But it is perhaps necessary to go further, that is to adapt education to the diversity of interests, talents and social expectations of youth, restructuring processes, methods and places, ensuring that each and every individual is integrated into the system and making room for their differences, and taking into account individuality to achieve true integration so that each person has, in the school or in the vocational training centre, the possibility of studying and learning, and the opportunity to construct personal life projects.

## Notes

1. The term 'secondary education' is used in this text to mean upper-level secondary education or second cycle secondary education, as defined in most European countries.
2. The concept of 'secondary education and training' is a more accurate description of the education available today for 16- to 18-year-olds. It encompasses the entire traditional academic education and initial vocational training, either within the framework of work/study programmes or through academic programmes.
3. In some cases, for example in Spain and Portugal, the range of special subjects remains available in secondary education, except that it is transferred from regular education to the new methods of initial vocational training (e.g. vocational modules in Spain and vocational schools in Portugal).
4. Cf. the studies on Portugal (Azevedo, 1991 and 1999) with regard to the actual recruitment practices of employees.
5. Here it would be appropriate to introduce more detailed reflection on the crisis in credentials taking place in Europe, given the unemployment crisis among higher education graduates, which, in some countries, is already affecting many thousands of young people looking for work.
6. I defend the standpoint that this abstract general consensus arises from the functioning of the world education system and that the world education system tends to homogenize policy-making.

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## ISSUES FOR THE ASIA-PACIFIC REGION

*Phillip Hughes*

### **Basic education: an expanding menu**

The Asia-Pacific region is the largest and most diverse of all UNESCO regions. It includes nations with the world's largest populations, that is China and India, together totalling over 2 billion, as well as some of the world's least-populated countries, such as Nauru and the Maldives. There is a wide range of climates and levels of economic development. During the twentieth century, the region experienced enormous changes in population density, methods of governance and economy as well as demographic structure. Just like all other regions of the world, it was heavily influenced by the Universal Declaration of Human Rights, which was adopted in 1948 and established a consensus on the basic claims to which each person is unqualifiedly entitled. A major element of the Declaration is the right of all people to receive adequate education. For the countries of the Asia-Pacific region, this has been a powerful factor in their evolution. The underlying momentum is supplied by the awareness that the capacity of nations to succeed in the twenty-first century will depend heavily on the effectiveness and relevance of their education systems:

The most significant expansion in access to education around the world at all levels has taken place during the last 100 years. Educational opportunity thus came to be perceived, in the

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collective consciousness of many in the middle of this century, both as a fundamental human right and as a gateway to social opportunity. [...] Education is the greatest single predictor of life chances (Reimers, 1999, p. 482).

This expansion is taking place because decision-makers have come to the realization that every person, not just the select few, has to have an assured access to schooling. Although the importance of knowledge has been evident in all eras, it is true that in the past most people could satisfy their basic needs without formal training. It was the appearance of mass production that introduced clear-cut borderlines between the respective spheres of work, living and learning. The advance of industrialization established the need for general basic education, including literacy, and this in turn required a novel institutional framework.

By the mid-twentieth century, the universalization of primary education (UPE) had become an international objective. UNESCO, UNICEF, UNDP and other UN organizations, which were founded around that time in order to help build a peaceful and sustainable world society, included this aim in their charters. It was not an easy task: in 1960, fourteen years after UNESCO proclaimed its commitment to education as a basic right for all, almost half the children in the world were still receiving no formal schooling:

There are about 550 million children aged 5–14 in the world today and 300 million boys and girls are enrolled in school. For 250 million no schooling is possible. [...] The economic, social and individual effects of this deprivation are well-known. The provision of education is indispensable for social and economic progress (Fernig, 1960, p. 31)

The world total of primary students rose from 206 million in 1950 to 668 million in 1997 and the growth in Asia-Oceania was even more dramatic—from 84 million to 410 million, that is almost two-thirds of the world total (UNESCO, 2000, p. 41). This world-wide result undoubtedly represents a major achievement; however, there are still almost 100 million children out of school. Between 1980 and 2000, the figures changed in the following way:

- in Sub-Saharan Africa, from 26 to 43 million;
- in Southern Asia, from 48 to 35 million; and
- in Eastern Asia/Oceania from 27 million to 1 million (UNESCO, 2000, p. 47).

The need to ensure basic education for all people in all societies was enunciated most strongly at the 1990 World Conference on Education for All (WCEFA), jointly organized in Jomtien, Thailand, by UNESCO, UNICEF, UNDP and the World Bank. The Jomtien Declaration was also important in that it offered a generic definition of the central concept:

Every person—child, youth and adult—shall be able to benefit from educational opportunities designed to meet their basic learning needs. Those needs comprise both essential learning tools (such as literacy, oral expression, numeracy and problem solving) and the basic learning content (such as knowledge, skills, values and attitudes) required by human beings

to be able to survive, to develop their full capacities, to live and work in dignity, to participate fully in development, to improve the quality of their lives, to make informed decisions, and to continue learning. The scope of basic learning needs and how they will be met varies with individual countries and cultures, and, inevitably, changes with the passage of time (WCEFA, 1990, p. 15).

Jomtien formulated the commitment to achieve basic education for all by the end of the century. In doing this, all participants had to keep pace with the social and technological changes in every aspect of human life, as illustrated in Table 1.

TABLE 1. Social changes in the period 1950 to 2000

	World population	Life expectancy (years)	No. of students enrolled in education	Percentage of population in large cities	No. of illiterate adults	Adult illiteracy rates
1950	2.5 billion	47	300 million	30	849 million	54%
2000	6.1 billion	64	1.2 billion	45	875 million	21%

What these data show is an uneven progress, its fluctuations reflecting the struggles for improvement in the face of external pressures, such as population growth. Let us highlight the most important features:

- The world's total population has more than doubled; yet, remarkably, health measures have succeeded in increasing overall life expectancy by 17 years.
- The manifest tendency to urbanization has proved to be ambiguous in its effects: increased opportunities for some are accompanied by the severe deterioration of living conditions for many. The percentage figures obscure the massive increase in the absolute numbers of urban inhabitants: in 1950, 30% represents 0.75 billion people, in 2000, 45% represents 2.7 billion. Much of the Asia-Pacific region is rural and some is lightly populated, but at the same time fifteen of the twenty-five cities with over 10 million people are in the region and the rural-urban migration creates a major social problem. Moreover, the region has thirteen of the world's fifteen most polluted cities (Asian Development Bank, 1997).
- Student numbers have grown from 300 million to 1.2 billion; yet there are still almost 100 million children of school age who remain outside schools.
- Adult illiteracy is facing major obstacles. The Asian 2000 figures show clear differences in development: in Southern Asia, the number of literate adults is 521 million against 415 million illiterate, whereas in Eastern Asia/Oceania, the figures are 1.189 million literate adults against 192 million illiterate.

Against this mixed background of progress and continuing need, the near achievement of universal primary education stands out as a major success. As with many victories outlined here, new battles are emerging. One of them concerns the nature of basic education extension:



Expectation for the performance of basic education is a continuum. All countries require new investments and, therefore, share a common dilemma. Requirements for social cohesion and economic competitiveness raise new expectations for basic education, resulting in a demand for system-wide effectiveness larger than the public resources available. This has led to a greater understanding of the educational sector and, in particular, the degree to which various functions depend upon each other for efficient operation and the realization that a concentration of attention on any one part of education, such as basic education, can have a distorting effect on other parts (Heyneman, 1997, p. 502).

This comment by someone who was then active at the World Bank is significant, given the long commitment by the Bank to primary education as the key priority. His emphasis redirects attention to the system as a whole and its interactions. In this respect, key points in the experience of countries in the region include the following:

- There is a need for extended and higher-quality education that promotes vocational training and health care, community development, environmental awareness and respect for the rights of others.
- The increase in the numbers of students finishing primary school puts pressure on secondary schools to provide admission to the secondary stage.
- The experience of countries that have moved towards universal secondary education shows that in their present forms, most educational systems are unable to provide satisfactory 'basic' education for a substantial section of the secondary population.

## **Secondary education: the need to reform not just numbers**

### THE CHALLENGE OF GROWTH

Secondary education is involved in an extension of purpose as well as in numerical increase. As shown in Table 2, the growth has been massive.

In the Asia-Pacific region, numbers have risen from a low of 15 million in 1950 to the present figure of more than 240 million, that is over 60% of the world's secondary students. Although this growth has been consistent throughout the region, some areas have not been able to outpace population growth. In Southern Asia, the out-of-school numbers of secondary age youth remained at 97 million between 1980 and 2000, whereas for Eastern Asia/Oceania these numbers dropped from 80 million to 58 million during the same period. Looking at the two largest countries, a major effort to introduce nine years of compulsory education brought the enrolment rate in China between 1990 and 1996 up from 49% to 70% of its 103 million secondary age population. In India the rise was from 44% to 49% for the relevant age group of 139 million people. Some other countries attained substantially lower figures, often not reaching the threshold of one-third.<sup>1</sup> The region thus presents widely varying scenarios for secondary education (PROAP, 1997).

TABLE 2. Secondary school enrolments (in millions), 1950–97.

	1950	1960	1970	1980	1990	1997
World	40	79	169	264	315	396
Africa	1	2	5	14	24	34
Asia/Oceania	15	37	84	146	184	241
Europe *	16	25	47	63	63	70
Latin America	2	4	11	17	22	29
North America	7	11	22	24	22	25

\* Europe figures for 1950 and 1960 include former USSR countries; for later dates, these are included in Asia/Oceania figures.

Although the quantitative dimension remains a serious concern, the issues of access, equity and quality demand have commanded attention as well. Low enrolment countries cannot concentrate exclusively on increasing enrolments at the cost of conveying disappointing outcomes to students.

## Reform: access, equity and quality

The size and diversity of interests, abilities, family backgrounds and ethnic origins inherent to the new world population raises fundamental issues. One of them is the appropriate form of school organization with respect to the primary/secondary divide. The available patterns include separate schools for general and vocational education, multilateral schools with separate streams for groups classified according to ability, and comprehensive schools involving all students in a single stream of courses. The difficulty of valid early selection into separate streams or schools led to wide adoption of the comprehensive pattern. The ‘compulsory education’ period, previously comprising six to seven years of primary schooling, has been expanded, for example, to nine years in China, Japan, Republic of Korea and Indonesia, ten years in Australia and eleven in Kazakhstan. There is a tendency for enrolments to move towards the full twelve-year period of secondary education in the region, as elsewhere.

### ACCESS, EQUITY AND QUALITY

Many of the inequities in opportunity, already visible at the primary level, emerge in an even more dramatic fashion at the secondary level.

At the primary level, high enrolment figures often mask low attendance, high proportions of repeating students and inequities revealed in different enrolment rates for particular social groups. As pointed out by Tilak, a total of 66% of Indian chil-

dren were attending primary school in 1996, 63% in rural areas and 78% in urban areas. For the 20% of people with the lowest income, however, the mean length of school attendance was 2.30 years (in contrast to 6.42 years for the highest-income group) and the rates of drop-out from primary and secondary schools were 44% and 89% respectively. Furthermore, attendance rates for girls consistently tend to be lower than for boys (Tilak, 1999, p. 523). Similar proportions are reported for China:

As recently as the early 1990's, evidence showed substantial variation in enrolment by socio-economic status, urban/rural residence and region of residence, and ethnicity. Among rural children and particularly among rural children residing in poor conditions, girls were less likely to be in school (Hannum, 1999, p. 574).

These findings are symptomatic of the whole region. Thus, the overall increase in enrolments, welcome as it is, ultimately masks numerous differences that have adverse effects for the already disadvantaged groups within societies.

Differences in access (on the basis of gender, ethnic origin, geographical location or family economic status) eventually lead to differences in performance; for some groups, these grow even greater during the secondary years. As shown by Hill, the literacy gap between the top 10% and the bottom 10% of readers in the third year of basic school is already equivalent to five years of schooling. By the tenth year of school, this gap widens to ten years. Such a gap is almost unbridgeable, and carries on into every aspect of schooling, employment and social life. Yet the research results indicate that a determined and individual effort at an early stage can bring the weaker performers up to satisfactory levels (Hill, 1998).

#### ASPECTS OF REFORM — NEW DEMANDS

The urgency of secondary school reform has become increasingly apparent to international organizations in recent years, with UNESCO playing a leading role following the Report of the International Commission on Education for the Twenty-First Century. As elaborated by Delors:

Secondary education must be seen as a crucial point in the lives of individuals: it is at this stage that young people should be able to decide their own future, in the light of their own tastes and aptitudes, and that they can acquire the abilities that will make for a successful adult life. Education at that level should thus be adapted to take account both of the different processes whereby adolescents attain maturity [...] and of economic and social needs (Delors et al., 1997, p. 125).

With social and economic needs changing continually, any reform must include ways of identifying and preparing for such changes. As pointed out by Ordoñez, transformation of schooling has to include fundamental rethinking of its function:

But beyond these foundation skills (of literacy and numeracy) what is it we should teach? We tell children to go to school because it will be useful to prepare them for the future but what if we have the wrong idea of the future? [...] The world has changed and the schools, instead

of leading the change are lagging behind it or even resisting it. You go to a bank today and it is radically different from a bank of twenty years ago, with ATM machines, computerised services (etc) [...] You go to a school today and it is much the same as twenty years ago, with the same teaching styles, the same subjects, the same lesson plans, even the same examinations. Sooner or later this must and will change (Ordoñez, 1998, p. 46).

Many countries have succeeded in meeting at least some of the needs but no government has been able to put all the partial achievements together in a unifying way. Many of the problems have no clear answers and further research is required to develop solutions. It is difficult for any single institution or even an entire country to focus sufficient resources towards identifying effective methodology or to conduct all the research needed to provide new answers. The only way is to seek a combination of available resources.

#### NEED FOR COMBINED ACTION

UNESCO initiated a new approach to development partnerships, highlighting the necessity for international bodies and donor communities to co-operate. Moreover, a growing number of UNESCO Member States as well as other international agencies, are becoming aware of the magnitude and complexity of the issues they have to face and are increasingly keen on working together. And finally, the international agencies themselves are increasing the extent and number of the programmes they offer. Co-operation is clearly a considerable advance forward wherever priorities mutually coincide, but even in all other cases it is useful to seek common agreement, ensure positive results and avoid conflict or confusion. To this end, UNESCO initiated a representative inter-agency meeting on secondary education in 1998 with the objective of formulating individual priorities and considering options for co-operative effort. The meeting yielded agreement on the key importance of secondary education and on the manifest need for substantial reform in that area. It defined areas of co-operation and the decision was made to pursue the following aims:

- to initiate a major review of the state of secondary education world-wide, so as to note current strengths and problems and to consider long-term solutions;
- to establish a website for information exchange and thus create a database on secondary reform, to be of immediate use to member countries and agencies;
- to reconsider the relationship between vocational and secondary education;
- to ensure involvement of young people;
- to consider issues of curriculum reform, including promotion of fundamental values such as citizenship, peace, sustainable development and health education;
- to support efforts to improve the training, working conditions and social status of teachers;
- to consider the role of information technology, distance education and non-formal education in extending access and equity;
- to undertake finance studies on current use of and future possibilities in the resources involved;

- to include initiatives in relation to the management of reform, including decentralization and school leadership (UNESCO, 1998).

UNESCO has already been active in developing co-operative approaches at the regional level through its Asia-Pacific Programme of Educational Innovation for Development (APEID). This organization, intended as a basis for co-ordination between particular national goals in the relevant sphere (Singh, 1986), was initiated at a regional meeting in 1971 and adopted by UNESCO in 1972. APEID has pursued a successful course for almost thirty years, using the resources of the region to solve pertinent problems (Churchill, 1988; Hughes, 1995). At present, APEID administers 199 centres in twenty-nine member countries and secondary education constitutes one of its major priorities. In defining its major programme areas for the period 1997–2001, APEID noted:

A variety of problems plague secondary education in the countries of the region: wastage, low teacher morale, under-trained, poorly motivated teachers, sub-standard teaching of literacy and numeracy, deficient teaching materials and school environments, student health and nutrition problems, low parental support for education, unenforced legislation on child labour and compulsory schooling, inaccurate baseline data including achievement levels and so forth. All these factors, when combined, result in reduced efficiency, quality and equity at the secondary level. [...] secondary education is currently the weakest link in the education chain (PROAP, 1997, p. 37).

In other words, it is the internal linking of the education system that points to secondary education as a priority for combined effort.

Regional co-operation has already yielded positive results. UNESCO has worked on secondary education projects with funding from UNDP, the World Bank and the Asian Development Bank and support from individual countries such as Japan and China. The Joint Innovative Project (JIP) with China has been one of its major successes. It has amplified China's national effort to move to nine years of compulsory education, an effort that had placed heavy demands on resources and personnel. JIP has augmented the national programme, focusing public attention on the qualitative aspects, especially diversification of teaching and learning approaches (PROAP, 1997). In Japan, UNESCO has contributed to the development of values education, as outlined in the recommendations of the Japanese National Council on Educational Reform. In Cambodia, a reform of the examination system for secondary education is under way. The Republic of Korea has performed a major analysis of the quality of educational materials, particularly school texts, through its Korean Educational Development Institute (KEDI). Nepal has launched a programme focused on upgrading the quality of teachers through improved pre-service education. Finally, the University of the South Pacific is involved in curriculum reform with the goal of promoting sensitivity to indigenous cultures.

The variety and extent of these programmes provides encouragement, but activities of this kind have to go much further. Fruitful future co-operation requires that two distinct tasks be fulfilled: first, effective and validated methods have to be systematically collected; second, neglected problematic areas have to be identified and research has to be launched. Neglect of either of the two aspects will have negative effects.

In developing new approaches, the role of research needs to be thoroughly revisited. In areas such as medicine and engineering, far from only creating new technologies, research has revolutionized the institutional pattern, the means of communication and the whole understanding of the profession. In education, however, research still plays only a minor role. Ordoñez and Maclean, who touch on the gulf between researchers, policy-makers and practitioners, make some useful suggestions in this context:

- UNESCO is in a position to take up the issue of research on an international level, since it can make links between universities, research institutes and teachers' associations to commence the type of continuing professional conversation that is necessary.
- More co-operation is needed particularly in the definition of areas for research, where practitioners feel that the questions which concern them most are rarely followed up.
- Researchers need to focus more in their studies to ensure that there is a comprehensive approach to particular topics.
- The language of research reports needs to be made more accessible (Ordoñez & Maclean, 1997, p. 653).

## Research on reform

### TOPICS FOR RESEARCH

A major part of the task is to link together all relevant research. Regional bodies such as APEID, and international institutions such as UNESCO, with its links to the World Bank, UNICEF, UNDP and OECD, constitute an enormous resource that can be further enhanced by continued effort and information technology. In spite of their diverse approaches to educational reform, countries do share a number of common methodological emphases. Some are based on solid research evidence, for others there is only a plausible rationale—but in all cases, more research is required to clarify the conditions under which a particular approach would be most effective. Issues meriting further research include:

- decentralization of decision-making;
- community participation in the operation of schools and/or in creating educational policy;
- the implications of different organizational patterns;
- the learning characteristics of groups of different sizes and compositions;
- implications of school size;
- the effects of different patterns of school–community interaction;
- the evaluation–curriculum interaction; and
- school quality.

### CURRICULUM RESEARCH: RELEVANCE AND MEANING

In addition, research must focus on curriculum, the living core of education. The curriculum is not a mere collection of courses offered by a school; it represents the total panoply of the way the school works and of its interaction with the public. In the final analysis, the curriculum is the sum total of what happens in and through

schooling. Its inner consistency has to be complemented by its integration into a wider social tissue—that is, it has to encourage social participation on the output side and to appeal to young people on the input side. There are too many young people who opt out of the process of education, largely at the secondary level. Although they may be receiving quality courses, they may simply lack motivation for continued learning. In this context, Barber comments:

... perhaps for the first time in educational history, it is possible to arrive at a curriculum that satisfies this dual need magnificently. The economy and democratic society demand increasing levels of educational achievement from everyone, while the multiple threats to the continued existence of the planet give that drive the ultimate justification. The agenda for education, therefore, could hardly be more motivating. Meanwhile, information technology will provide new and exciting ways of teaching and learning. Moreover, we have, at last, a theoretical understanding of children and young people that will assist teachers in their task (Barber, 1996, p. 170).

An aspect of curriculum change of particular concern to countries of the Asia-Pacific region is the development of citizenship education in the schools. This is indicated by many national initiatives and also regional priorities as defined through APEID (PROAP, 1997). To promote the concept of active and responsible democratic citizenship, schools must establish and cultivate close links with the outer society.

The International Baccalaureate Organization (IBO, 1999) is an example of a project aimed at consolidating these links. IBO requires a demanding and productive community service element as a continuing part of primary, middle and secondary school programmes. One of these elements, the Creativity, Action, Service (CAS) programme, requires that students contribute three to four hours per week, over the final two years of school, in order to be allowed to sit for final examinations. The emphasis is on experiential learning through:

- creativity—the use of the arts and the imagination in service projects;
- action—active participation in group and/or individual action; and
- service—community service of value to others, consistent with IBO purposes.

## Teachers, teaching and learning

All reform is doomed without people to implement it; yet, as pointed out by Ordoñez (1998), teaching styles and the subjects being taught have not changed fundamentally since the introduction of mass schooling. Modern technology could be of significant help in increasing the effectiveness of schools, provided that institutions are prepared to adopt new models of organization.

### TEACHERS AS PROFESSIONALS

In the Asia-Pacific region, APEID has identified low teacher morale as one of the leading issues (PROAP, 1997). In the effort to improve learning, the role of the teacher is more important than ever. Longitudinal studies in Australia (Abbott-Chapman et al., 1990) have identified it as crucial to the educational success of

students with disadvantaged backgrounds. In order for a teacher to help all students, not only the educationally advantaged ones, the study emphasizes the concept of 'professionalism'. A professional teacher must:

- be fully qualified to enter the profession;
- be committed to continued professional education;
- subscribe to an agreed and supervised code of ethics; and
- acknowledge service to students as a priority.

Some countries are creating councils to supervise and oversee the professionalism of teachers. Although rigorous, these requirements are essential, given the key role played by teachers in the educational reform processes

#### TEACHING AND TECHNOLOGY

It is reasonable to expect that technology will open up new horizons of opportunity: in reaching the distant or isolated; in creating new links between specialists and learners; in providing unequalled access to information; and in producing an entire new range of learning media and opportunities.

#### TEACHING AND LEARNING CHANGES

New technology increases, rather than diminishes, the demand for high-quality teaching. Further, new approaches to the concept of intelligence open up new possibilities for learning and pose new challenges for teaching. Human intelligence is an enormously valuable untapped resource. This becomes increasingly apparent as we recognize the diverse kinds of intelligence exhibited by human beings. Gardner, for example, has identified eight areas of human intelligence, which he labels linguistic, mathematical, interpersonal, intra-personal, kinesthetic, spatial, musical and naturalistic (Gardner, 1993, p. 23). Gardner's concept of multiple intelligences suggests new approaches to teaching and new goals for our educational systems. Future educational initiatives will need to focus on the development of a wider range of human capacities than ever before, as we seek imaginative solutions to endemic problems (Levin, 1995).

### Conclusion

The Asia-Pacific region has made substantial but uneven advances in education, particularly over the past two decades. The region's countries must share information on successful and unsuccessful approaches to solving educational problems and join forces to explore topics about which educators and policy-makers know little or nothing. On the basis of a history of successful co-operation and a commitment to respecting cultural difference, they can and must collaborate both to improve their own education systems and to contribute to the development of secondary education around the world.

#### Note

1. To cite a few, the growth figures for the 1985–95 period are the following: Cambodia,



23.5–30%; Lao People's Democratic Republic, 23–25%; Myanmar, 23–30%; Viet Nam, 43–47%; Afghanistan, 8–22%; Nepal, 25–37%; Papua New Guinea, 12–14%.

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# EDUCATIONAL RESEARCH

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## IN INDIA:

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### AN ANALYTICAL STUDY

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### OF A RESEARCH JOURNAL

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V.K. Raina<sup>1</sup>

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#### Introduction

Educational research in India is of comparatively recent origin. Buch (1991) reported that it was only in 1943 that the first doctoral degree in the field of education was awarded. During the past fifty-six years, work in this field has increased exponentially. From a meagre ten doctoral degrees awarded during the decade 1941–50, the number of degrees awarded between 1981 and 1990 rose to 1,486. The purpose of this paper is not to study the factors contributing to this phenomenon, but rather to identify some major trends in the content of Indian educational research.

One of the major approaches for assessing this field and identifying the main trends has been to use *Surveys of educational research* (Buch, 1974, 1979, 1989, 1991; NCERT 1997). These surveys have been mostly based on master's and doctoral degrees awarded by Indian universities, with occasional independent research findings also being reported. None of the first four *Surveys* included research findings

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*Original language: English*

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that appeared in the major educational research journals. Therefore, a significant limitation of these surveys has been that they are essentially based on the work of novice researchers-students who are pursuing their research for the specific purpose of obtaining a degree, and who frequently see the dissertation as a hurdle to be overcome as quickly and easily as possible.

## **Analysing research journals: an alternative way of identifying trends**

A helpful technique for identifying trends and issues in different areas is to analyse research journals (Ball, 1984; Newman & Cooper, 1993; Feist & Runco, 1993). For example, a number of papers appearing in the *American psychologist*, *American sociological review* and other journals have attempted to make a critical estimate of contributions regarding, for example, the methodology used in various studies (Koran & Bram, 1988), the number of research studies conducted by each gender (White, Sheehan & Korboot, 1983), the qualifications of the editors (Crandall, 1977), and the manuscript review process (Crandall, 1977, 1986). Attempts have also been made (Koran & Bram, 1988) to look for trends in the methodologies and procedures of a research study/project.

White, Sheehan and Korboot (1983), for example, analysed the first thirty years (1949–78) of the *Australian journal of psychology*. They found that male authors predominated, but that there was steady increase in the number of women authors. In the same way, White (1985) conducted a study in which he analysed fourteen journals of psychology over a period of ten years. White reported that the previous research on the number of female editors and senior authors had indicated that women publish less than men and that they have been under-represented on editorial boards. In White's study, the percentages of women on editorial boards were compared with the percentages of women who were in associated divisions of the American Psychological Association. The results showed that the representation of women on boards increased markedly in the first half of the decade but regressed in the latter half.

With the specific purpose of identifying trends in creativity literature, Feist and Runco (1993) analysed the *Journal of creative behaviour*. In this study, 311 articles published in the journal during the period 1967–89 were examined with a view to ascertaining which topics had been consistently examined and which had gone out of favour. The number of authors, female authors, references, and social and educational articles all showed upward trends. However, the number of empirical articles did not increase during the twenty-three-year period.

These findings and those of similar studies suggest that the trend of analytical research is viable and informative. It not only tells us in which direction the field has gone, but also gives hints as to where it is leading.

Studies such as these suggest that analysing leading journals, especially research studies, can provide very useful information and worthwhile indications regarding the trends in a particular field.

The present study has been undertaken essentially to analyse the content of a leading educational research journal—*Indian educational review*—in order to identify certain trends. Since the purpose of this study did not involve any evaluation of the contributions, not much can be said about the quality of the papers themselves.

### ***Indian educational review: a journal of educational research***

*Indian educational review (IER)* was first published in July 1966 by the National Council of Educational Research and Training, New Delhi, in order 'to provide a medium of dissemination of educational research and exchange of experience among research workers, scholars, teachers and others interested in educational research and related fields and professions'. Originally a twice-yearly journal, it was made a quarterly journal in 1976, but became twice-yearly again as of 1995. Over a period of thirty-three years (1966–98), *IER* has published a total of 1,058 studies, including both full-length research papers and research notes.

Until 1992, the editorial policy of the journal was to invite papers on or pertaining to educational research, with emphasis on research problems in Indian education. Since 1992 an attempt has been made to invite contributions which may comprise scholarly discussion of new issues and developments, reports of research, reviews of research in particular fields, and general or specific debate on educational research. Also invited are contributions reporting all kinds of empirical research in education, whether sociological, psychological, economic or organizational. *IER* covers a wide range of subjects, including interdisciplinary studies.

#### **OBJECTIVES**

The present analysis was undertaken with a view to examining:

1. content area distribution;
2. research methodology/approach;
3. background of contributors (such as position, subject specialization and institutional affiliation);
4. distribution of contributors by state; and
5. gender of contributors.

#### **METHOD OF ANALYSIS**

Ninety-four issues of *IER* published during the last thirty-three years (July 1966 to July 1998) were used for the analysis, together with data from the two earlier analyses made by Raina and Sen Gupta (1979) and Raina, Prasad and Kumar (1993).

#### **CLASSIFICATION OF ARTICLES**

The *IER* studies were classified on the basis of the index in the *Encyclopaedia of educational research* (Ebel, 1970). This index was found to be quite comprehensive

and useful compared with classifications used by other sources. It breaks down the subject of educational research into five categories: foundation areas, function areas, subject areas, personnel areas and administrative areas.

Foundation areas include topics such as developmental psychology, the psychology of learning, human behaviour and social foundations. Function areas are topics such as curriculum, instruction, special education, educational measurement and research. Topics such as tool subjects, cultural subjects and vocational subjects are covered under subject areas. Student personnel, teacher education and teacher personnel fall into the category of personnel areas. Administrative areas include topics such as levels of education, school system, school administration, education finance and educational facilities.

## Discussion of results

### CLASSIFICATION BY CONTENT AREA

Table 1 presents the classification of articles by content area.

It indicates that in terms of content areas the greatest number of contributions relate to foundation areas (36%), followed by function areas (29%) and personnel areas (20%). Contributions relating to administrative and subject areas total 9% and 7% of articles respectively.

These findings highlight some interesting trends in Indian educational research. As noted, most of the contributions relate to foundation areas; and within these the majority relate to the psychology of learning, human behaviour and developmental psychology. In other words, it can be said that educational research in India is still greatly influenced by the study of various psychological processes. This reminds one of Shoben's (1964) observation that 'one still hears occasionally (as usually from odd quarters) that vaunt that psychology has "captured" education, and it is centrally true'. Making an observation on the basis of an analysis of Indian Ph.D. research, Buch (1989, 1991) found that psychology's contribution to developing the science of pedagogy was considerable. He specifically observes that:

The discipline of psychology has contributed the maximum number of studies on education. This is quite understandable as the university departments in these two areas of study have grown more or less simultaneously and quite often under common leadership and guidance. More important than this is that the subjects share a large number of topics as common areas of study such as learning, motivation, testing and measurement, guidance and counseling and personality.

However, the fact remains that the exploration of issues relating to educational research in its socio-cultural, economic and historical contexts has remained comparatively unattempted.

In terms of second priority, the various sub-areas of function areas such as educational measurement, instruction and curriculum have attracted a good number

TABLE 1. Classification of articles, by content area

Content areas and sub-areas	N	%
Foudation	378	35.72
Development psychology	48	13
Psychology of learning	159	42
Human behaviour	110	29
Social foundation	61	16
Function	302	28.54
Curriculum	39	13
Instruction	93	31
Special education	21	7
Educational measurement	92	30
Research	57	19
Subject	79	7.46
Tool subjects	37	47
Cultural subjects	28	35
Vocational subjects	14	18
Personnel	207	19.56
Student personnel	72	35
Teacher education	64	31
Teacher personnel	71	34
Administrative	92	8.69
Level of education	39	42
School system	17	19
School administration	21	23
Educational finance	12	13
Educational facilities	3	3

of contributions. A possible explanation for this phenomenon is that these three aspects constitute important components of the teaching-learning process. A large number of studies have been related to development of diagnostic tools (educational measurement), teaching methodologies (instruction) and status studies of the curriculum employing survey techniques.

Another significant trend in terms of content is the number of studies conducted in the personnel area, which is dominated by the sub-areas of teacher education and its processes. A similar trend was visible in *the Fourth survey of research in education* (Buch, 1991), which reported an increasing number of research projects being carried out in the area of teacher education. It is not difficult to suggest a reason for this, since the majority of contributors to *IER* during the past thirty-three years have had an education background. Thus they have pursued research areas related to their own areas of specialization.

The two areas that have been seemingly ignored by contributors are administrative and subject areas. Though important areas in themselves, they have not been fashionable with Indian educational researchers.

#### METHODS/APPROACHES

Table 2 provides information about the various methods/approaches used by the investigators.

TABLE 2. Classification of methods/approaches used in research papers

Methods/approach	N	%
Survey method	423	40.00
Experimental method	310	29.00
Content analysis	166	16.00
Descriptive method		
(a) Review papers	57	
(b) Theoretical papers	30	8.00
Comparative method	33	3.00
Evaluative studies	22	2.00
Historical studies	11	1.00
Case studies (qualitative)	3	0.28
Participant observation	2	0.19
Action research	1	0.09
Ethnography	-	-

As for the kinds of methods/approaches that have been used in research studies, the three major methods have been survey, experimental method and content analysis, together constituting 85% of all studies. The preferred investigative methods have been those grounded in a quantitative, positivistic paradigm. The virtual absence of methods/approaches rooted in a qualitative paradigm is a serious limiting factor in respect of their usefulness.

These findings are not surprising as this is, by and large, the kind of educational research environment that exists in the developing world, and particularly in the South Asian countries. In the context of the kinds of methods widely used in Sri Lankan educational research, Kularatna (1996) points out that:

the majority of these studies have used the empirical statistical approach and survey research methodology. There is also a considerable number of historical studies and content analysis studies. There have been very few experimental or qualitative research studies.

A similar situation exists in East African countries such as Kenya, Uganda, Ethiopia, Somalia and the United Republic of Tanzania (Mwiria, 1996).

Regarding the absence of use of qualitative research methods in India, support is provided in the observations made by Choksi and Dyer (1996) that:

In India, qualitative research methods in education are not yet widespread. We have conducted interviews among teachers, at various levels of government, and in university settings, and a general lack of understanding of the procedures involved in data collection by qualitative methods has been apparent. This is not to say that there is no interest in their potential, for the limitations of quantitative research in illuminating 'hows' and 'whys' are often self-evident.

Crossley and Vulliamy (1997) have raised similar issues in the broader context of the developing world.

#### BACKGROUND OF CONTRIBUTORS

The present analysis looked at the profile of the contributors: their official positions, the subjects in which they had specialized, their institutional affiliation, their home states and their gender.

##### *Official position*

TABLE 3. Official position of contributors

Official position	N	%
Director	26	2
Deputy/Assistant Director	14	1
Head/Professor and Head of Department	72	6
Professor	81	6
Registrar	3	0.2
Reader/Associate Professor	180	14
Senior Research Officer	16	1
Principal	6	0.4
Lecturer/Assistant Professor	207	17
Statistician	5	0.4
Headmaster	7	0.6
Research Assistant	90	7
Teacher	8	0.6
Doctoral student	15	1
Unclassified	519	42

As to who are the people doing most of the research, the answer is categorical—those at the bottom of the academic hierarchy: lecturers or assistant professors. They are followed by readers/associate professors and then full professors and heads



of departments. It is not difficult to speculate about the reasons for this. The people in question want to do research not because they are motivated or passionate about the subject, but in order to seek promotional avenues or, sociologically speaking, to 'climb the ladder'. Why is it that professors, heads of departments and deans are not academically as productive as their junior colleagues? It appears that intellectual menopause sets in the moment they become full professors. Perhaps also they are aware that 'professional eminence is not related to high research and conceptual ability and to strong professional commitments, but to some other factors' (Strauss, 1966).

### *Subject specialization*

As would be expected, the bulk of research in education is being done by people who have an education degree, followed by persons who have specialized in the social sciences (Table 4). Although it is difficult to make any inferences in quantitative terms from this, it would be interesting to investigate what impact subject specialization may have on the quality of educational research.

TABLE 4. Subject specialization of contributors

Subject specialization	N	%
Education	593	47
Social sciences*	263	2
Mathematics, natural and biological sciences	50	4
Mass communication and training	3	0.2
Language (English, Hindi)	11	0.8
Technology	4	0.3
Management	7	0.6
Agriculture/vocational education	5	0.4
Unclassified	313	25

\*This category includes psychology, economics, history, social science, philosophy and sociology.

### *Institutional affiliation*

The university system continues to be the major supplier of researchers, followed by research and development (R&D) organizations and colleges of education (Table 5). This is perhaps as it should be, since universities have traditionally been perceived as the main source for the generation of knowledge (Schwebel, 1985).

### *Which states are the contributors from?*

A geographical breakdown is provided in Table 6.

TABLE 5. Institutional affiliation of contributors

Institutions	N	%
Research/R&D institutions	263	21
Universities, Indian Institutes of Technology and Management	496	40
Colleges of Education	238	19
State Departments of Education	79	6
Schools	22	2
Others	42	3
Not mentioned	109	9

TABLE 6. Distribution of contributors, by state

State	N	%	State	N	%
Andhra Pradesh	50	4.00	Maharashtra	45	3.60
Arunachal Pradesh	–	–	Meghalaya	1	0.08
Assam	6	0.48	Mizoram	2	0.16
Bihar	30	2.40	Orissa	32	2.56
Chandigarh	19	1.52	Punjab	53	4.24
Delhi	287	23.00	Rajasthan	61	4.88
Goa	1	0.08	Sikkim	1	0.08
Gujarat	85	6.80	Tamil Nadu	20	1.60
Haryana	33	2.64	Tripura	3	0.24
Himachal Pradesh	37	2.96	Uttar Pradesh	200	16.00
Jammu & Kashmir	35	2.80	West Bengal	35	2.80
Karnataka	45	3.60	Foreigners	45	3.60
Kerala	11	0.88	Indians settled abroad	42	3.36
Madhya Pradesh	69	5.52	Not mentioned	1	0.08

Most Indian educational research has emanated from India's capital, Delhi, and other cosmopolitan cities in the state of Uttar Pradesh (the most populous state), followed by the states of Gujarat, Madhya Pradesh, Rajasthan, Punjab and Maharashtra. The contribution of other states is rather marginal. The phenomenon of 'centre' and 'periphery' in knowledge generation in the Third World appears to be at work (Altbach, 1985).

## Gender

As far as gender differences are concerned, we may note that 943 researchers were male (76%) and 306 were female (24%). The finding that a majority of contributors are male is similar to results from other cultures and regions. A number of other research projects reported in the *American psychologist* (Helmreich et al., 1980; Over, 1981; White, 1985) support such findings. A similar trend was noticed in research reported in the *Australian psychologist* (White, Sheehan & Korboot, 1983) as well as in the *Journal of applied psychology* (Cox, 1977). Perhaps concerted efforts should be made to encourage and motivate female researchers to contribute to research journals.

## Conclusion

The present study makes use of an alternative approach to identify research trends in Indian educational research by analysing a journal over the last thirty-three years. The analysis corroborates the earlier findings that educational research is still dominated by psychological processes and has largely ignored socio-cultural, economic and historical issues. The methodologies used to study such issues are mostly quantitative, and it is mostly assistant and associate professors, rather than full professors and heads of departments, who have carried out this research. These academic staff members come from university departments of education and colleges of education, having specialized in education. Some of the trends revealed, such as the predominance of males in carrying out research, are consistent with the findings of similar analysis carried out by Helmreich et al. (1980), Over (1981) and White (1985).

## Note

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