Where is the Focal Point for Reform? Secondary Education as the Key to Change

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Acknowledgment

Education Policy Studies Series

Education embraces aspirations of the individual and society. It is a means to strengthen human resources, sustain competitiveness of societies, enhance mobility of the underprivileged, and assimilate newcomers to the mainstream of society. It is also a means to create for the populace an environment that is free, prosperous, and harmonious.

Education is an endeavor that has far-reaching influence, for it embodies development and justness. Its development needs enormous support from society as well as the guidance of policies that serve the imperatives of economic development and social justice. Policy-makers in education, as those in other public sectors, can neither rely on their own visions nor depend on the simple tabulation of financial cost and benefit to arrive at decisions that will affect the pursuit of the common good. Democratization warrants the emergence of a public discourse on vital matters that affect all of us. Democratization also dictates transparency in the policy-making process. Administrative orders disguised as policies have a very small audience indeed. The public expects well-informed policy decisions-those that are based on in-depth analyses and careful deliberation. Like the policy-makers, the public and professionals in education require a wealth of easily accessible facts and

views so that they can contribute constructively to the public discourse.

The Hong Kong Institute of Educational Research of The Chinese University of Hong Kong provides the space for rational discourse on important educational matters. From time to time, the Institute organizes "Education Policy Seminars" to address critical issues in educational development of Hong Kong and other Chinese societies. These academic gatherings have been attended by stake-holders in education, including policy-makers, practitioners, researchers and parents. The bulk of this series of occasional papers are the fruit of labor of some of the speakers at the seminars. Others are written specifically as contributions to the series.

The aim of this Education Policy Studies Series is to present the views of selected persons who have new ideas to share and to engage all stake-holders in education in an on-going discussion on educational matter that will shape the future of our society.

WHERE IS THE FOCAL POINT FOR REFORM? SECONDARY EDUCATION AS THE KEY TO CHANGE

Abstract

In all our societies, technological and social changes are causing a reconsideration of a wide range of national, institutional and personal activities. Basic to all these consideration is the reform of the education process which is crucial to economic development, social and civic development and personal development. This reform in education is continuing at all levels and in all institutions. However central to all these is the reform of secondary education which acts as a bridge between education as a whole and society. The nature of this reform is being pursued in many countries. This paper summarises some of the major directions to be pursued at the international, national and institutional levels.

The First Era of Universal Education

Education for All

This century has seen the most profound and rapid changes in history, for every area of activity: our work, our leisure, our governance, our religion, our transport, our communications, our patterns of family life, our

education. Further, people and nations are interconnected in a global way as never before so that what affects one society deeply, tends quickly to affect all.

This is also the first century in which education has become of direct concern to all. Education has always been important but previously the informal surroundings were sufficient to provide a foundation for life for most people, with only a few requiring formal preparation. In early history, when people lived by hunting and gathering, that foundation came through family groups, where children learned the necessary arts and crafts for survival through involvement in their family's hunting and gathering activities. This process was effective for many tens of thousands of years. When agriculture became the predominant occupation still children received their basic education in their family groups, in the family tasks. Work, learning and family life were inseparable aspects. Not until the further innovations in technology separated work and living, did learning became separate also. Industrialisation brought mass production. It also brought mass formal education as a distinct entity, the new means to provide the foundation.

Universal primary education as the foundation for participation in society did not become a goal until the end of the nineteenth century. At the beginning of this

century effective universal primary education had been achieved in only a few countries but by its mid-point the universalization of primary education (UPE) became an international as well as a national goal. International bodies such as UNESCO, UNICEF and UNDP took this aim as central to their charters. Still, in 1960, 14 years after UNESCO made its commitment to education as a basic right for all, almost half the children in the world were still receiving no 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.107)

Now, at the end of the century that goal is in sight. Only 35 years after the Fernig assessment, there were more than 650 million enrolled in primary schools, giving a gross enrolment ratio (GER) of 99.6 percent (Appendix 1). Even given this remarkable achievement, there are still more than 100 million children out of school. In some countries the record of school enrolment is still not at a good level. (The gross enrolment ratio for primary education in Sub-Saharan Africa in 1985 was 76.1 percent and this had decreased to 73.9 percent by 1995 (UNESCO, 1998). However the

overall achievement is significant, for example, in China, enrolment rates rose from less than 50% in primary education to the GER of 118.3% in 1995, a very significant achievement.

The motivation for this result is the concept of "basic education," seen as a necessity for all people to enable them to operate effectively in their own societies. This was enunciated most strongly through the Jomtien meeting in 1990, the World Conference on Education for All, an occasion jointly organised by UNESCO, UNICEF, UNDP and the World Bank. The Jomtien Declaration was important in that it gave a broad definition of the purpose of basic education essentially as a means of achieving a broad social competence.

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. (Jomtien, 1990, p.3)

Full participation for all individuals in their own society is seen in the Declaration as requiring a foundation of education.

A Changing Foundation

Basic education, as the foundation education for all, requires continuing reconsideration to match the change and complexity of a modern society. Simultaneously with the broad achievement of universal primary education, the last 50 years have seen drastic changes in every aspect of human life, as in education. Some figures for the period 1950 to 1995 give some indications of the profound changes.

Figure 1. Social Changes in the period 1950 to 1995

	Population	Life Expectancy	No. of students in education	Percentage of population in large urban settings	No. of illiterate adults	Adult literacy rates
In 1950	2.5 billion	47	300 million	30%	849 million	45.7%
In 1995	6 billion	64	1.1 billion	45%	881 million	79.4%

As a picture of progress, the picture is uneven, reflecting the struggles to improve the situation against external pressures such as population growth. Total

population has more than doubled and yet, remarkably, health measures have succeeded to the extent of increasing life expectancy overall by 17 years. Urbanisation has grown substantially with increased opportunities for some but a deterioration of living conditions for many who have left rural living for a precarious urban existence. From a figure of 300 million, student numbers have grown to 1.1 billion but still with more than 100 million children of school age outside schools. The total number of adult illiterates increased but only due to population growth as literacy programs have increased the literacy rate from less than half to almost four-fifths. Against this mixed background, the achievement of UPE stands out as a major success. As with many victories, new battles emerge to be fought.

One of those battles is in the extension of basic education as the necessary foundation.

Twenty years ago it was common to assume that investment in basic education was a problem limited to low-income countries, but this is no longer the case. 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 dilemma commonly leads to a tough questioning of traditional mechanisms...This has [also] 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, 1998, p.502)

This comment from Heyneman, at the World Bank, is significant given the commitment over a long period by the Bank to primary education as the key priority for basic education. The need for universal secondary education and higher levels of participation in tertiary education emerge as priorities.

It is not enough, however, simply to transfer the concept of foundation education to the combination of primary and secondary education. It is clear that secondary education in its present form will not meet the need. This is in spite of very substantial changes in this period in secondary schooling. Formerly an experience only for a selected minority, now, in reality in many countries and in prospect for all countries, we have the period of universal secondary education. As

such it has become the cross-roads in education for the whole sector, the link between primary education, vocational education, higher education and work. Yet the countries where secondary education has become universal have experienced severe problems in achieving the major purposes of this sector, vocationally, socially and personally. As we enter the new century, reform in secondary education has become the key to the satisfactory operation of the whole system. Yet whereas in the past the search for basic education could be satisfactorily fulfilled by achieving primary education, the same is not true for secondary education in its current form. Change is not enough: reform is required.

Secondary Education: The Need for Reform, not Just Change

Secondary education has been the site of continuing change. As mentioned above, it was designed for an elite. A common pattern in industrialised countries was for approximately one third of primary students to continue on to secondary education, with about one tenth of the cohort to complete this phase and up to 5 percent to go on to higher education. With increased demands for higher levels of education for employment, there was a corresponding growth in the proportion of the age-cohort continuing into secondary education, a growth which in recent years has spread generally as shown in Figure 2. In China, for example, where a formal policy of nine years of compulsory

education was adopted, the 1985 enrolment of 51.7 million students rose to 63.8 million by 1995, an increase in the GER from 39.7% to 66.6%, a really significant change.

This expanded secondary population led to controversy as to the form of organisation, with various forms of secondary schooling being tried: separate schools for general and vocational education; multi-lateral schools with separate streams; and, comprehensive schools, involving all students in the one stream of courses. The difficulty of valid early selection into separate streams or schools, led to a wide adoption of the comprehensive pattern. The "universal education" period for a technological society was seen first as ten years and now, this expectation has risen still further, with twelve years becoming the norm. Figure 2 shows the results of that dramatic increase.

Figure 2. Enrolments (millions) and gross enrolment ratios (GER) in secondary education

Year	1985		1995	
	Enrolment	GER	Enrolment	GER
World	291.6	48.5	372.0	58.1
More developed regions	72.3	92.3	75.3	105.8
Transition countries	36.0	94.6	40.7	86.9
Less developed countries	183.3	37.7	256.1	48.8

NOTE: further detail in Appendix 1.

The changes in numbers and the changes in organisational forms have not been matched with a fundamental reform of purposes. Power describes this situation in terms of three sequential crises, which we have not yet succeeded in resolving.

> ...the dramatic growth in secondary education...is forcing us to rethink the basic purposes of this pivotal stage in lifelong education, and thus has led to fundamental changes in the structure, content and methods of our schools. These changes are the result of three successive crises which most developed systems of education have had to face:
>
> 1. The crisis of numbers – not enough secondary schools and teachers.
> 2. The crisis of quality – inadequate curricula, assessment methods and teacher training.
> 3. The crisis of legitimacy – the challenge of the 21st century and the isolation of youth.(Power, 1997, p.4)

In each of these crises, the immediate problems have dominated attention so that secondary education has undergone a major change of role without a corresponding redefinition of purposes. Where formerly the aims were clear the new situation demands a rethinking to meet needs which have become so much more complex. At present, the third crisis identified by Power, the crisis of legitimacy, subsumes all three

aspects: quantity, the degree to which secondary schooling can adequately deal with the needs of the total age cohort; quality, the relevance, standards and long-term validity of the provision for all students; legitimacy, the recognition and acceptance of the provision by relevant audiences. The challenge for secondary schools is to carry conviction as to their legitimacy in this dual sense, provision for all but also a quality education for all, to these multiple audiences -- students, teachers, parents, policy-makers, employers and the general public.

Where provision for all has been achieved, quality for all has not been realised. An imperative task for reform is to make quality education for all a reality, not merely provision for all. This need was emphasized in a recent paper by Lo in his study of educational development in China and Hong Kong.

> In any society which claims to uphold justice in its governance, considerations for quality and equality are actually two sides of the same policy coin. (Lo, 1998, p.5)

Lo points out in his study that, while achieving one of these characteristics is no guarantee of success in the other, neither are they incompatible. This dual purpose is as important for developing as for developed countries. It is a global issue. In considering this

situation, the issues to be addressed require some analysis before we decide on the directions to follow.

Directions for Reform

In 1993, UNESCO set out to develop a policy direction for the future in education. This was the International Commission on Education for the Twenty-First Century which conducted studies and discussions worldwide for three years before presenting its report to UNESCO. The report recognised the continuing commitment to good quality basic education for everyone but stressed also that this implied a commitment for an adapted secondary education, written into the agenda for the next century.

> 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, 1996, p.53)

What are the issues to consider? In terms of these comments, three – the processes whereby adolescents attain maturity, economic needs, and social needs.

The transition of young people from dependence to become participating members of their society is an important but also a complex process. For a healthy society, the success of that transition is vital. Young people are, of necessity, the future society and their commitment to its development in a constructive way is crucial to all societies. The development of an alienated group, with disruptive characteristics, is not merely a present problem but also a future loss. Those who should be committed to preserving what is valuable, and renewing what is of no further use, become a negative factor in both preservation and renewal. This is observable in dramatic fashion in countries where violence has become the norm and where the young have been recruited and trained as soldiers. Their skills and attitudes developed for this task are disruptive to peaceful development. Many other groups of young people are also alienated, although in less obvious ways. Young people need to feel that they are a valued part of society and that they have a genuine and important part in its future. In building such an involvement, gaining productive work plays a key role. Employment is not only a means to economic independence but becomes a wider symbol of the person's perceived value.

In the past this transition from dependence to independence happened naturally, as a part of normal living and within the normal institutions, particularly the

family. As we have seen, it is only within this century that the transition required a universal period of formal education, in the first place primary education and now 12 years of primary and secondary education, with vocational education and/or higher education and/or work to follow. This longer period of economic dependency coincides with other changes which add further to the problems of transition:

- in industrial societies, the age of puberty for girls has fallen during this century from age 16 to age 11, a dramatic change particularly in view of the much later occurrence of financial independence and in many societies, later marriage and the later commencement of child-birth;
- changes in family patterns, with decreased interaction between parents and children due to a variety of factors including a large increase in the number of women working outside the home, a major increase in marriage break-up, and a significant rise in the number of single parent families;
- considerable uncertainty about employment, with high rates of youth unemployment, long periods of unemployment, increases in patterns involving short-term and part-time employment, alternating with unemployment, chronic unemployment in particular families with 2 or 3 generations of a family in this situation. In many developing countries, the too-early employment of children is another dimension,

robbing them of the chance to become more productive over the long term;
— the growth of a youth culture has been accompanied by an emphasis on material consumption which has made the youth market an attractive target for advertisers, emphasising further for young people the importance of economic independence.

These factors for young people all contribute to a sense of exclusion from society, a sense of meaninglessness of life, which tempts people to experiment with dangerous activities including drug abuse, crime and unsafe sexual practices. At base, this crisis is not one of economics, of work patterns or of family life, but a crisis of values. Without a sense of purpose, of hope for the future, of being valued members of society, the anti-social patterns will continue and become even more severe.

The Japanese Government has adopted recommendations from the National Council on Educational Reform making a specific emphasis on the value of the individual. Five emphases were adopted:

...further development of "kokoro;" focus on the basic contents, respect for individual differences, development of lifelong learning, ability to cope with internationalism. (Okamoto, 1992, p.11)

"Kokoro" represents the idea that education is not for skills but for:

> ...completion of character, such concepts in English as heart, mind, spirit, mentality, humanity. (Okamoto, 1992, p.11)

Economic Needs: The Preparation for Employment

There is a deep sense in which all young people are made marginal to the major functions of society by the long period needed to gain entry to an adult world. In this setting, a significant proportion is further marginalised by the fact that they lack even the long-term promise of real involvement.

A recent OECD (Organisation for Economic Cooperation and Development) study emphasises the problems of early school leavers, particularly but not exclusively with respect to employment.

> The prospects of early school leavers for integration into employment and social life more generally are becoming increasingly negative in all countries. Given that employers use qualifications as well as work experience to select workers, early school leavers are at a double disadvantage. They tend to spend a long time in the search for a first job and, when they do secure a first job, are likely to end up with jobs which are of poor quality.

Although low-paying jobs can be a stepping stone to better employment, there is evidence that such jobs are often only temporary, and that the unqualified young person soon returns to the unemployment pool. (OECD, 1998, p.57)

One of the major purposes of the foundation period of education, then, is the successful preparation of students to be eligible for productive employment. As will be stressed later, this cannot be an isolated purpose but it is a vital aspect.

New work patterns have led directly in most countries to high levels of unemployment, generally, and even higher levels for young people. This has heightened the emphasis in many minds on the role of education in preparing for work, but at a time when that connection is more difficult to make. The expectations are unreal. Most vocational preparation, in the sense of specific skills, is now best learned in the work situation. What can be learned effectively at school are the more generic competencies, necessary for all work and applicable in a wide range of circumstances. These include numeracy, literacy, problem-solving capacity, ability to work effectively in teams towards a common goal, good communication, initiative, and flexibility. These broader competencies require that schools develop different approaches than have been traditional but are now essential to develop maturity.

Social Needs: Participation and Citizenship

Equitable Participation

The challenge of providing a common foundation is made more difficult by the gap in capacity between the more able and the less able students. This gap develops early in the school years and is substantially increased during secondary education, rather than being reduced. This is documented by the research of Hill and his colleagues in Melbourne, working co-operatively with researchers from many countries. Hill confirms:

> ...the existence of a "learning gap" of at least five years of schooling between the top and bottom 10 percent of students in each of years 3 and 5...[Thus] as early as year 3 the gap between the "haves" and the "have nots" is already wide, if not unbridgeable. By year 10, students at the 10th percentile in reading had progressed no further than the level of students at the 50th percentile in year 3. (Hill, 1998, p.14)

A common result of the perceived failure of schools to deliver useful results is a disenchantment with schooling that often appears in the early secondary years and grows stronger during those years. This leads to increased truancy, to drop-outs from the later years to behaviour problems ranging from passive non-participation to active disruption, as reported in many studies. (Barber, 1996)

Gender Equity

Gender is a major factor in achieving equity in participation. In many countries girls have much lower participation rates at all levels of education than do boys. UNESCO has adopted the education of girls and women as a major priority, since their progress in education has such major implications, not only for the individuals concerned but also for their families and communities. This remains a major concern. Surprisingly, when greater progress has been achieved for girls and women, the education of boys appears as a problem. The disaffection and poor results which occur among students in countries with high participation rates are more significant for boys than for girls. This disconcerting finding has been duplicated in many countries. A report in *The Economist*, "Tomorrow's Second Sex," quoting research from America and Europe, concluded:

> ...that girls are doing better than boys at every age in school, except university where girls are narrowing the gap...The trouble with men appears early – at school. Though men take up half or more university places in most countries (America is an exception), at primary and secondary school girls are increasingly out-performing boys. In England and Wales, for example, girls score higher than boys in tests conducted at seven, nine, eleven, and – which is less often realised – at five. In America,

boys are much more likely than girls to be held back a grade and twice as likely to drop out of school. This pattern is repeated all over Europe. (*The Economist*, 1996, p.17)

As *The Economist* pointed out this has long-term implications and the failure shows up not only in school but in unemployment, in family disruption and in crime figures.

One aspect that is encouraging in this gloomy picture, gloomy that is for men, is the reflection that the turn-around in performance for women and girls has followed a determined and purposeful campaign, not only to increase access for girls but to improve their performance. If such a campaign can be successful in a difficult area of educational reform it will have implications for us in other areas. Again, however, there are lessons to be learned about the requirements for reforms to begin to have an impact: the need for substantial time for a reform to function before an impact is felt, and the need for a society-based approach to reform. For the first, it is over a 20-year period that this effect has emerged. Second, this was not a campaign aimed at schools alone but at all aspects of society and it obtained strong social support.

Active Social Participation

A key social need is for schools to play a

significant role in preparation for citizenship. The demands of citizenship in a democratic society cannot be learned without specific purpose and deliberate activities. Governments and institutions in many countries are seeking to find effective approaches to this problem.

From Sweden, for example,

Developments in society encompass increased demands for influence on the part of citizens and being able to choose between different alternatives. The school has an important role in providing education for citizenship...This implies also the habit of working in democratic ways and participating in our cultural heritage in a broad sense. (Swedish Ministry of Education and Sciences, 1992, p.2)

This sense of both social and cultural participation is common to the new understanding of citizenship. This requires an approach by schools aimed at the development of attitudes and capacities which can only arise through active involvement in democratic processes. Schools will need to look at the total process of schooling, to consider the opportunities for involvement that currently exist and to decide what new activities will need to be developed. What is clear is that schools as we have known them must be quite different

if they are to play an active and effective role in education for democratic citizenship.

Postman points to a major difficulty for schools where they seek to develop values. They are in direct competition with the mass media which occupy so much time in the lives of young people and which propound different values, even if only implicitly.

> Television is a medium that stresses instancy, not constancy; discontinuity, not coherence; immediate, not deferred, gratification; emotional, not intellectual response. In the face of this, perhaps the most important contribution schools can make is to provide young people with a sense of purpose, of meaning, and of the interconnectedness of what they learn. At present the typical school curriculum reflects far too much the fragmentation one finds in television's weekly schedule. (Postman, 1983, p.107)

In recognising the part that schools must play, the limits of what they can do alone must be remembered. The school must not only look at internal changes but at links with the other major social institutions in a task which must be a commitment for the total society.

In summary, the hopes for secondary education are high yet the sector must be able to cope with the

legitimate criticisms and show its capacity to deliver the more extensive purposes now required.

The Nature of the Required Effort and Reform

The International Level

The issue of education as a means for peaceful development is seen so seriously that it is an issue for international agencies, such as UNESCO, UNDP and UNICEF as well as the World Bank. Given the global nature of the issues facing education there is a strong case for national systems to co-operate in such an endeavour. Three UNESCO initiatives are under way and seek wide support.

A Worldwide Review

UNESCO has undertaken the Review of Secondary Education recommended by the Delors Report and further commended by the Asia-Pacific Conference on Education for the Twenty-First Century in Melbourne. This review will be a substantial endeavour, based on careful study and wide discussion as it has the potential to make a global contribution to policy and practice in secondary education. This does not mean a monolithic pattern but a thorough revisiting of the purposes of education for this age group, in the light of both global trends and local cultures.

The Review, while centred in UNESCO, will need to draw on the best information and research available.

A suitable start will be to assemble the necessary information to guide the extensive discussions which will be necessary but yet to leave key decisions to the individual countries.

The words of the Director-General of UNESCO for the opening of the Melbourne Conference states clearly a central issue:

> It is vital to meet this challenge (to anticipate change) because although the acceleration of change has brought benefits it has also left many people behind. This period of transition to a new century is one of glaring and often growing gaps. There are unacceptable gaps both within and between societies in terms of access to basic human rights, dignity and adequate living conditions. There are stark gaps in access to knowledge and also what I call "gaps of understanding," with cultural, linguistic and spiritual differences perceived as problematic rather than enriching. Education for the 21st century must be an education which bridges gaps. We must now harness the power of change to spread human development much wider, to build bridges between cultures, peoples and economic systems. Education is an essential tool for building these bridges. (Mayor, 1998, p.23)

Case studies of reform

A second initiative is through case studies of reform in various countries and institutions to provide information on various innovations, with their reasons for success and failure. Given that we can rarely take a pattern directly from one setting to another, we can nevertheless learn greatly from detailed studies of what is happening and how and why the results emerge as they do. UNESCO, with its worldwide contacts is in a unique position to supply information and provide opportunities for connections and visits between centres with mutual interests. From the reports made to UNESCO a variety of examples can be drawn. In Asia, there is already a reservoir of experience which can be drawn upon. Countries such as China, Singapore, Malaysia, Thailand and the Special Administrative Region of Hong Kong all offer examples whose study would be illuminating. There is much discussion as to what factors are universal in application and which are culturally bound. Without genuine exchange, such views are untested and of limited value.

Research on reform

A third initiative will be the gathering together of research relevant to the area and to the process of reform. Such sources include bodies such as ACEID, the Asia-Pacific Centre of Educational Innovation for Development, a network of 200 major institutions in 60 countries throughout the region and one which can

harness substantial resources. In this task UNESCO would also be greatly assisted through co-operation with major international bodies which have parallel interests and have built up their own knowledge and networks. These include the World Bank, UNICEF, UNDP and OECD. Taken together, even in terms only of what already exists, these constitute an enormous resource. Given what continued effort can provide and the power of information technology to make interconnections, this resource will be even further enhanced. Research and the exchange of information on experiences has never been more important. There are many patterns of change being adopted in the search for reform. These include such concepts as:

- decentralisation of decision-making;
- community participation in the operation and/or policy of schools;
- re-engineering, i.e. reconsidering the whole process of schooling;
- the implications of different organisational 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;
- school quality.

These and other patterns for school improvement have persuasive arguments to back them but in general they lack a strong research validation.

Purposes at the National Level

In the final analysis what will constitute a basis for national decisions is a clarification of purposes, particularly to the extent they are relevant globally, to national systems, to regions and to individual schools. The major purposes are summarized by the words quoted above "an education which bridges gaps." This is further developed in the four pillars of the Delors Report: to learn to know, to learn to do, to learn to live together, to learn to be.

To learn to know

This includes but goes beyond a set of basic skills, building on the idea of basic learning needs defined from Jomtien. This is the foundation for our learning growth, that rich blend of knowledge, understanding and commitment which enables continued learning. The basic gap in knowledge must be bridged if we are to have the capacity to bridge other gaps. To learn to know – what are the issues which emerge?

1. **The growth of knowledge.** How can we cope with the growth of knowledge? This has always been a problem but is now so rapid and extensive that it is no

longer conceivable that one person can be acquainted with the whole field. A continual updating of basic information is an essential requirement to cope with this growth but it also implies the need to increase the capacity to assess the relevance of current knowledge and the access new knowledge.

2. **Knowledge in depth.** Equally crucial is the capacity to develop knowledge in depth, to understand extensively a particular field. The value of a foundation is that it provides a base on which to build. That process of building, of exploring an area or areas in depth, has a merit that cannot be provided by broad studies that do not require continued and sequential study.

3. **A sense of meaning.** A major issue for young people at this stage is to make sense of their studies. Many students feel that their studies have no direct value, in terms of issues that matter to them, such as employment, the environment or personal relationships. They also claim that their studies look at the past rather than present or future, that they are mere collections of past thoughts and ideas (Collins, Clark, Moran & Warhurst, 1980). How can we help students to feel something of the excitement of those who discover, create, develop or reorganise knowledge, the poets, musicians, scientists, politicians?

To learn to do

Our ideas, no matter how good, remain empty until we put them into practice. What are the issues which emerge?

1. **Competency.** A major emphasis is being made in many countries on the concept of competency, the capacity to apply in practice the skills and knowledge previously learned. This includes the idea of generic competencies, those which are applicable in many situations including work. To do more of this at school demands that students are given meaningful tasks to perform, demonstrating in the most practical way that their studies have practical use.

2. **Vocational education.** The obvious link between learning to do and vocational education has some important implications also. Given the specialized nature of knowledge, the more specific vocational skills are best learned on the job. What can be learned usefully at the school stage is the nature of a variety of work situations, a broader understanding of the work phase and familiarity with different settings.

3. **Situational learning.** The reverse also applies. The work setting can be a valuable place for learning to enhance the studies undertaken at school. Raizen, in her research has explored ways in which the links between education and work can be productive. She has looked particularly at the link between the acquisition of cognitive skills and knowledge with

real world activities and sees the workplace as a valuable learning setting. (Raizen, 1994)

To learn to live together

As much as we need to value diversity, we also need to value unity, the abiding sense, beneath our differences, of our common humanity, our need for community. The first two pillars, considered above, are normally part of the school situation although we are exploring more effective approaches. This one, learning to live together, has not been such an explicit purpose of schooling in the past. As the Delors Report reminds us, it is now, and must continue to be, a vital element. It is important at a number of levels, in individual relationships, with groups, at a national level, and, increasingly, globally.

> The contemporary world is too often a world of violence that belies the hope some people placed in human progress. There has always been conflict throughout history but new factors are accentuating the risk, in particular the extraordinary capacity for self-destruction humanity has created in the course of the twentieth century. Through the media, the general public is becoming the impotent observer, even the hostage, of those who create or maintain conflicts. Education has up to now not been able to alleviate that state of affairs. Is it possible to devise a form

of education which might make it possible to avoid conflicts or resolve them peacefully by developing a respect for other people, their cultures and their spiritual values? (Delors, 1996, p.61)

Learning to live together – what are the issues to emerge?

1. **Citizenship – Civic membership and responsibility.** This has not been a central concern of schools until comparatively recently, although many countries have had courses in civics or history. However, many countries now see the area of active citizenship as being important to the very existence and successful development of a democratic society. There are chilling examples of countries where the mechanisms and the motivations to live together harmoniously have failed dramatically. This calls for an approach to citizenship quite different to any that have been in common use. To develop citizenship as an active and not a passive concept will require quite different approaches than has been standard.

2. **The school as a learning community.** Schools face a challenge in this knowledge-based society. While learning will be highly valued, there is no guarantee for the role or even the continued existence of current institutions such as schools. The means for providing information have been greatly increased and there are now many non-school sources available, particularly

through the computer. The best information and the best teachers are available through such means outside schools. In addition, private providers are entering the field of education, purely as a business, initially at the tertiary level and also now at the secondary level in direct competition with schools and universities. If schools are to survive it is because they offer strengths not available through electronic means. It is in the interactions between people, the development of a community that schools have a unique strength, given the capacity and will to use it. That community also has a special focus, on learning.

3. **Intercultural understanding, peace education.** Many schools and school systems are working in this area. The experience already gained in many situations is invaluable and should be the basis of further progress. Again it will be important for programs to be successful, to include practical activities which embody the values sought.

To learn to be

This strand explores the spiritual dimension that is an aspect of all our cultures, to seek the full diversity of talents, of human capacities, on which we may call. The Delors Report called one of those resources, *The Treasure Within* (Delors, 1996), implying by that term the treasure which we all possess and can develop. Treasure has a particular ring to it which excites our hopes. In Australia, there is a legendary treasure called

"Lassiter's Reef." Lassiter was a gold prospector who, when lost in the desert, believed he had found a reef of pure gold. Without food or water he had to leave his treasure, planning to return when he had supplies. He searched throughout his life for it but never located the reef again. He ignored the many places he knew, where gold could be mined at the cost of time and work, to seek this special place he dreamed of, where treasure lay, waiting just to be picked up and carried away. We all long for the treasure which will banish our problems. In doing so, we may be like Lassiter, ignoring what is at hand for what is out-of-reach, ignoring the "treasure within," our human capacity to learn and grow and develop. It is to this we must look, not only to the personal treasure that lies within us but the cultural treasure we share with our society. These are the treasures which can enrich our world.

In this century, we have seen the magnitude of human capacity. The capacity to hurt, to despoil, to destroy, to kill. Our past century has been the most destructive century in human history. We not only destroy so much of what is beautiful and valuable but in doing so we use precious resources which could be used so differently. But it has also been the most creative century in history, providing a richness of resources which could allow all people to live in dignity. Can we emphasise the creative tendencies and control those which are destructive?

Learning to be – what are the issues which emerge?

1. **Dependence, independence, interdependence**. One of the major challenges for all human beings are the moves we make, first from dependence to independence and, then, equally importantly, from independence to interdependence. A major task is to find activities at the school level, although not necessarily in school, through which young people can find ways to make and confirm these steps. This involves not only the development of a sense of self but also a sense of community and the interconnections.

2. **Arts education**. Given the emphasis on education for the economy which has dominated discussion for so long, the arts have fared badly in priorities in many places. Yet, with their contribution both to employment and to leisure, as well as their cultural value, it is time to renew the emphasis on the arts as a central aspect of culture and thus a part of basic education.

3. **Moral education**. There is a continual call for greater adherence to moral values but little consensus on what should be done. Increased crime rates among young people, drug abuse and the problems arising from undiscriminating sexual relations are all used as arguments for attention to morals. This is one of the more difficult areas and one of the most important.

Decisions and Actions at the Working Level

What should emerge from an agreement on purposes such as outlined above? The issues are universal, can the solutions be universal? Each society will have to consider its answers to this question. We shall look at three crucial areas for decisions – the curriculum, the heart of the education process, organisation and connections, the means, institutional and otherwise, to make that curriculum real, and teaching staff and students, the people who are at the heart of the educative process.

The Curriculum: A Framework for the Future

A curriculum is an artefact of a particular society, an expression of what that society values. A part of that curriculum will be the core, the knowledge, skills and values which the society values for all its members. Beyond that, there are elements to meet the needs of individuals, as argued above. Each society needs a process whereby the distinct types of decisions can be made.

1. The core or common curriculum

The core could at one time be described in terms of a limited literacy, e.g., the verbal and numerical skills needed in the early stages of the Industrial Revolution. Given the major technological advances since those early changes many other sorts of literacy need to be attained.

Scientific literacy is an obvious requirement, the basis necessary for all citizens to understand the role of science in our society. Technological literacy is equally necessary in a world where radio, television, cars and computers are only some of the sophisticated additions to everyday life. Political literacy is also a requirement where the right to vote for one's government, for so long the subject of struggle is now increasingly the pattern. Cultural literacy: a strong argument has been mounted by Hirsch for this capacity, an awareness of the stories, myths, traditions, means of communication and representation which are part of the substructure of exchange in a society (Hirsch, 1988). Value literacy — those common values to which a society subscribes and to which it seeks commitment by all its members. These will include such things as respect for others, respect for the law, concern for the environment, adherence to conflict-free methods of resolving disputes.

Putting all these new "literacies" together, we have a requirement that every society must take seriously, to develop continuously the concept of what is basic, the common necessities for membership of a society. These need continual re-appraisal and redefinition. On this foundation will the capacity for lifelong learning depend. This new literacy is the capacity to use a particular body of knowledge and skills to cover a much wider range of human activities: science, the humanities, the arts, technology, economics, politics,

mathematics. To achieve this in any society will require a penetrating and ongoing cultural analysis to define this new foundation. This involves both technical and value decisions. This area might be described in terms of curriculum breadth.

2. Curriculum depth

Equally as crucial as breadth is the capacity to develop knowledge in depth, to understand extensively a particular field. The value of a foundation is that it provides a base on which to build. That process of building, of exploring an area or areas in depth, has a merit that cannot be provided by broad studies that do not require continued and sequential study. This provides an opportunity to diversify studies, to offer students choices to follow up special interests. As Gardner points out in his discussion of multiple intelligences there are many approaches to learning, and schools have traditionally valued only two of these. Many students who have been alienated from schools have felt that their interests and abilities were undervalued. Equally important as the nature of the task in such cases is the way that they are evaluated. The concept of student exhibitions developed by Sizer in his Coalition of Essential Schools offers good examples (Sizer, 1991). An important corollary of the need to specialize is, as has been emphasized, the capacity to communicate. Without that, the worth of specialized knowledge is limited.

3. Curriculum Meaning

A major need for students is that they see their school curriculum as meaningful, both to their immediate lives and to their capacity to build a future. There are different aspects to this provision of relevance.

- **Meaning through relevance.** In the final analysis, the curriculum is the sum total of what happens in and through schooling, through explicit or implicit intentions, through the sum total of actions and policies. What schools do internally is important and must tell a consistent story. What happens outside schools is equally vital and, to be effective schools must be part of a major coalition of efforts. Thus schools must explicitly deal with the perception of so many students that their curriculum is not relevant to their lives. This can only be done where schools, in co-operation with other agencies, show the relevance of school studies and other activities to work and life beyond schools.

- **Meaning through motivation.** A new curriculum must meet two requirements. One, as emphasised is to provide the basis for social participation. Secondly, it must appeal to young people as worthwhile. At present, too many young people opt out of the process of education, largely at the secondary level. Motivation for continued learning is a necessity of the same order as having worthwhile courses and

experiences from which to learn. If schools are to be
part of the continuum of lifelong learning, they must
be as concerned for the will to continue to learn as
they are concerned to ensure that learning has
occurred. Barber comments on this dual need:

...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.153)

In outline the curriculum may look similar from
place to place: literature, language, the arts,
humanities, science, technology, health, physical
education and personal relations, and religion, for
example. What is vital is that there is a process for its
definition involving discussion with the key
participants, continued study and evaluation to allow
growth and development.

- **Meaning through coherence.** As mentioned earlier, a sense of interconnectedness is important. Too often the courses in schools are presented as parallel but unconnected studies. It is to this need to build a sense of the interconnectedness of knowledge that Postman's earlier comments were directed. This requires more integration in the planning within schools, between different subject areas. It may also benefit from special studies. Interdisciplinary studies may be valuable, given the importance of co-operative work in later life. A valuable innovation in this regard, aiming to understand the nature and growth of knowledge, is a course such as that provided in the International Baccalaureate, the Theory of Knowledge, described briefly in Appendix 2.

Organisation and Relationships – Patterns to Support Learning

1. The School – A Community for Learning

As mentioned above, it is in the development of a community that schools have a unique strength, provided that they develop the capacity and will to use it. The implication is already clear. To learn to live together requires situations where we actually live together in order to learn. The development of the school as a learning community is a vital part of reform. If learning is the central purpose, for all associated with the school, students, teachers and parents, then what

happens internally will be organised for this purpose and external connections will also aim for that goal. The building of community is not an automatic affair but must be done deliberately and with the full co-operation of all those involved.

2. The School – A Centre for Interaction

The capacity to apply knowledge now very often means the capacity to work with others, since knowledge is becoming so specialised. Peter Drucker in a recent book writes that this is the age when knowledge has become the key resource and when "knowledge workers" will play a dominant role. But he points out that in this new age knowledge in application is specialised, with the workforce consisting of highly specialised people, that it is truer to speak of knowledges rather than knowledge. According to Drucker this particular shift offers tremendous opportunities for individuals but the shift also:

> ...demands for the first time in history that people with knowledge take responsibility for making themselves understood by people who do not have the same knowledge base. It requires that people learn – and preferably early – that people learn to incorporate into their own work specialised knowledges from other areas and other disciplines. (Drucker, 1995, p.12)

He notes two other implications of specialised knowledge: the need for knowledge workers to be able to operate in teams and in many different teams for different purposes; the need to have access to an organisation, e.g., the surgeon, part of many operating teams and with access to an organisation, the hospital, capable of supporting many teams. This requires generic competencies such as teamwork, communication, co-operation and leadership. Drucker's comment that this needs to be achieved early has a special significance for schools. A major part of the reason for the continuation of the school in the future will be the fact that it gathers together many young people, offering opportunities for learning how to operate in groups of different kinds. To make space to do this, schools will have to use new technologies for some of the tasks that they currently do. The school as a community becomes a learning resource in its own right.

3.   The School – Part of a Wider Community

Raizen, in her research has explored ways in which the links between education and work can be productive. She has looked particularly at the link between the acquisition of cognitive skills and knowledge with real world activities. She notes the strong evidence that learning and motivation for learning are most effectively mediated through activities which are embedded in a context that makes sense to the learner and which is important to the learner. Research on "situated learning"

highlights the need for and the importance of providing a realistic context, both physical and social, for education and training intended to prepare people for the world of work. Most effective would appear to be the creation and provision of learning situations which make more explicit both a knowledge of the task and also problem solving capacities. This approach is likely to be of much more value than merely in its preparation for vocations. A major problem for many alienated students is what they see as the unreal nature of the school situation. This is one arena in which actuality can be brought to the learning situation and as such will be of particular value in secondary schools (Raizen, 1994). To do this effectively schools will have to make more productive links with their communities -- with work settings, with service opportunities such as homes for the elderly, with outside organisations such as sporting clubs and service organisations. A major function of the school community will be to build these interconnections with the wider community. A useful example is found in the program for the International Baccalaureate Organisation (IBO). This involves 900 schools in more than 90 countries in an agreed program, including curriculum and assessment development, teacher training and other services. The purposes include not only intellectual rigor and high academic standards but also strong emphasis on international understanding and responsible citizenship. Appendix 2 lists a number of the activities which range from links

with overseas programs to local community service. The emphasis on reflection by the student enhances the educational value of the activities.

4.   The School and Moral Education – Citizenship and Civic Responsibility

There is a continual call for greater adherence to moral values but little consensus on what should be done. Increased crime rates among young people, drug abuse and the problems arising from undiscriminating sexual relations are all used as arguments for attention to morals. Etzioni has written significantly about the role schools might play by developing a sense of community, as one of the more potent sources of moral standards and behaviour. He says,

> Youngsters are enrolled in many public schools – and quite a few private ones – with their characters under-developed and without a firm commitment to values. The basic reason is that their families have been dismembered or the parents are over-worked or consumed by other concerns and ambitions. As a result, the children tend to be poor students. Moreover, if their lack of character and moral values are not attended to while they are at school, they will graduate to become deficient workers, citizens and fellow community members. (Etzioni, 1995, p.43)

He points out that for many young people the only moral community to which they belong is the school and that it is there that the lessons of living together harmoniously must be learned, it is there that they can learn to live in communities, it is there that they can learn how to solve differences of opinion without conflict, how to make collective decisions. The point is made strongly by Victoria Camps as she speaks of two essential ideas:

> ...(a) that education must be the guiding light of democratic culture; and (b) that education is not possible unless it conveys moral values. At a time when modern societies are tending to subordinate all development to the dictates of the prevailing economic orthodoxy, we need to find a way of overturning this monopoly that has the effect of eroding political participation and citizenship. (Camps, 1997, p.498)

Given the role of schools in an area such as citizenship, there is an explicit commitment to the teaching of values which will be an important part of the purposes of schools. To teach skills is a necessary part of a foundation education, but it is not sufficient. The capacity to make moral decisions based on a coherent and socially acceptable value-system is equally necessary. For this aspect of education, learning, guidance and discussion in a social setting is essential.

One can only learn respect for other people in interaction with other people. Responsibility can only be learned through taking responsibility.

As mentioned above, to do this task effectively requires a more active approach, a more explicitly values-oriented approach than schools have customarily used. The learning community concept offers quite new opportunities. Two separate trends are of value here and seem to offer a promise of synergy, given sufficient creativity and good will. One trend is the wish of young people to be involved in constructive and worthwhile activities, such as environmental conservation or service to others. The second trend is the interest of many countries, as mentioned, in developing citizenship as a means of improving the harmony and coherence of their societies. Citizenship that contributes to such purposes involves much more than teaching about history or institutions or respect for others, although these aspects are helpful. It involves creating a culture of commitment to the community, of service and helpfulness. Young people could, in the same set of activities, carry out useful tasks of value to the environment or of service to the elderly or infirm, gain valuable experience and knowledge and contribute personally to the development of the community culture.

In this whole range of activities, education systems first have the task of improving the sequence of learning

and experience within their own boundaries, not only between sectors such as primary, secondary and higher education but within those sectors. Secondly, much more needs to be done to improve the links with other agencies outside the school: social services, health, legal. Thirdly, they can benefit greatly from improved connections with the community generally, both with respect to work and social opportunities. We cannot now re-develop our organisations from the beginning. We must, however, re-conceptualise their operations and interconnections to make the continued learning of students their key priority.

The People Central to Change: Students and teachers

There is no more important area for attention than the people who will be the major means through which any reform will be delivered. Yet, the setting in which teachers and students work and the patterns for that work have not changed fundamentally since the introduction of mass schooling with its adoption of an assembly-line approach to the organisation of schools. That industrial model has never been appropriate for schools and is now not even felt to be so for industry whose patterns of operation and organisation have changed fundamentally with the use of technology. Technology is not the main reason for changes in the schools but it can provide significant help to approaches which are based on the need for more effective learning and which are prepared to adopt quite new patterns of

organisation. Above we have listed equally significant items which are relevant to changes for the people centrally concerned.

1. Students as decision-makers

Much of what has been said, for example about building community, implies that students will be part of the decision-making process. Since at the end of schooling we expect students to be responsible decision-makers in many areas of life and work, that basis must be laid in school. This requires a growing involvement of students in the life of the school: its procedures for running, its discipline, its celebrations, its rituals, and, above all, its teaching and learning processes.

2. Teachers as professionals

In the effort to improve learning, the role of the teacher is more important than ever. Longitudinal research studies in Australia (Abbott-Chapman, Hughes, & Wyld, 1990) have identified the role of the teacher as being crucial to the educational success of those students who come into education from disadvantaged backgrounds. The study emphasises the value of the concept of "professionalism" for the teacher whose work is effective in this special sense, as being of significant help to all students rather than only to the educationally advantaged students. The conception of the teacher as a professional is of a person fully qualified to enter the profession, committed to

continued professional education, subscribing to an agreed and supervised code of ethics, with first priority for service to the students. These are stringent but appropriate demands for the exacting role of the teacher. The nature of the pre-service and the in-service provisions is important to them.

Barber has suggested in his recent book a concept which accords with that of the teacher as professional. This is the idea of a learning contract for each student, negotiated with and managed by the teacher, drawing on all the resources for learning, both inside and outside the school. The contract would be up-dated each six months. (Barber, 1996)

Many countries are considering the formation of a Teachers Council to initiate and supervise the concept of professionalism. Given the key role that teachers play in the reform process, they require strong support for the task. The wider recognition of standards of capability and of ethics could enhance both the quality and the status of teachers. When so many people presently teaching are inadequately prepared for the task, even by current accepted standards, it may seem reckless to embark on a course which will involve a more exacting preparation and a more coherent continuing education. The improvement of the status of teachers, however, is a necessary accompaniment to the achievements of better education. Pre-service and continuing professional

development provisions are central to this achievement.

3. Teaching and technology

Considerable hope is invested in the concept that technology will open up new horizons of opportunity in reaching the distant or isolated, in making links between specialists and learners, in providing unequalled access to information, in producing a whole new range of learning media and opportunities. Technology can deliver possibilities, however, personal interaction is required to realise those possibilities. At the moment the introduction of technology into schools is very uneven, threatening further the opportunities of the disadvantaged, between nations and within nations. The introduction also usually concentrates on the hardware policies, neglecting the necessary involvement and preparation of teachers.

4. Teaching and learning changes

The new technology and the availability of more information puts an extra, rather than a diminished, demand for high quality teaching. Further, new approaches to the concept of intelligence opens up new possibilities for learning and poses new challenges for teaching. Of all the world resources available for the future, the largest untapped area is in human abilities. Neurological studies confirm that, in all people, most of the brain cells remain undeveloped. Other studies begin to offer hope that we may learn to recognise and develop

a wider range of human abilities. Gardner, for example, has identified eight areas of human intelligence:

> ...linguistic intelligence, logical-mathematical intelligence, spatial intelligence, musical intelligence, body-kinesthetic intelligence, interpersonal intelligence, intra-personal intelligence, and naturalistic intelligence...In my view the purpose of school should be to develop intelligences and to help people reach vocational and avocational goals that are appropriate to their particular spectrum of intelligences. People who are helped to do so, I believe, feel more engaged and competent, and are therefore more inclined to serve society in a constructive way. This view leads to the notion of an individual-centred school, one geared to optimal understanding and development of each student's cognitive profile. (Gardner, 1997, p.347)

Whether or not we accept Gardner's educational prescription, the concept of multiple abilities in each person awaiting development is educationally rich. Gardner's approach opens up quite new possibilities in teaching strategies as well as purposes. It is clear that future initiatives will have to recognise the value of developing a wider range of human capacities at a time when our need is so great for imaginative approaches to solving endemic problems.

5.   Leadership in schools

Factors that contribute to a school's commitment to learning centre around its leadership. Effective learning communities have leadership that ensures: that there is a clear set of purposes with an explicit valuing of learning; that the purposes are widely understood and supported; that communicates a vision for the school which includes high expectations for students and an orderly environment; that ensures the availability of required resources; and that provides curriculum and teaching guidance and support to teachers. This support may not require full autonomy over budgets, curriculum and personnel.

School leadership needs to support classroom conditions that are known to foster learning. As with leadership, the students of teachers who have high expectations for their students and who offer rewards and incentives for academic achievement learn more. Also, when teaching methods respond to the behavioural and learning styles of students and when classes are disciplined so that learning time is high, student achievement is usually higher.

Systems can foster school leadership and classroom conditions to encourage learning by ensuring that these factors are prominent in the selection and training of teachers, school principals and administrators and that they are central objectives of

school supervision, inspection and support activities (Chubb & Moe, 1990; Levine, 1990; Purkey & Smith, 1983).

It is increasingly unlikely that the demanding characteristics of good leadership will arise by chance, during a regular teaching career. The daily experiences are quite different and it can not be a useful part of initial training. The pattern adopted by many countries is to establish "leadership centres," specifically designed to provide the necessary pre-appointment training and also a continuing professional education throughout the career in leadership. The specialist medical colleges, with their demanding levels of entry and their high quality and relevant continuing education provide valuable models.

Conclusion

The joint challenges of providing a high quality education and of equitable provision for all are inescapable. Secondary education is a focal area for reform in meeting these challenges. From the nature of the issues, resolution can come only from a coherent and cooperative approach involving all levels, international, regional, national, local and individual.

Appendix 1

Percentage ratio of 6–14 year olds to the population aged 15-64

	1985	1995	2005
World	31.9	29.6	25.8
More developed regions	19.1	17.3	16.0
Transition countries	22.2	23.0	16.7
Less developed countries	45.6	46.1	40.8

Estimated illiterate population (millions) aged 15 and over

World	885.9	884.7	869.5
More developed regions and countries in transition	22.5	12.9	8.6
Less developed countries	863.3	871.8	860.9

Enrolments (millions) and gross enrolment ratios (GER) in primary education

	1985		1995	
	Enrolment	GER	Enrolment	GER
World	567.2	99.1	650.2	99.6
More developed regions	61.8	101.9	62.7	104.5
Transition countries	29.8	99.0	28.9	98.6
Less developed regions	475.7	98.7	558.6	99.1

Enrolments (millions) and gross enrolment ratios (GER) in secondary education

	1985		1995	
	Enrolment	GER	Enrolment	GER
World	291.6	48.5	372.0	58.1
More developed regions	72.3	92.3	75.3	105.8
Transition countries	36.0	94.6	40.7	86.9
Less developed countries	183.3	37.7	256.1	48.8

Enrolments (millions) and gross enrolment ratios (GER) in tertiary education

	1985		1995	
	Enrolment	GER	Enrolment	GER
World	60.3	12.9	81.7	16.2
More developed regions	25.1	39.3	34.3	59.6
Transition countries	10.9	36.5	10.8	34.2
Less developed countries	24.4	6.5	36.6	8.8

Number of teachers (all levels) per thousand population in the age group 15-64

	1985	1995
World	16	16
More developed regions	22	23
Transition countries	24	27
Less developed countries	13	13

UNESCO. (1998). *World Education Report 1998*, pp. 105–108.

Appendix 2

Activities of the International Baccalaureate Organisation

The Theory of Knowledge

This study aims to give coherence to the IBO program by a course in the last two years of the baccalaureate through a reflection on all aspects of their work throughout the program.

> For example, students are encouraged to reflect on the nature of poetic truth in literature and to contrast such truth with that obtained in other systems of knowledge – the historical fact, the scientific fact, the mathematical proof and so on. They also examine the grounds for the moral, political and aesthetic judgements that individuals must make in their daily lives. Emphasis is placed on the role of language and thought and on the development of the student's critical thinking skills. (IBO, 1997, p.5)

An approach such as this is desirable to help students come to grips with the nature of knowledge now so much more complex.

IBO Community Service Options

In addition to a strong liberal arts curriculum including both humanities and sciences, the IBO requires a community service element as a continuing part of the program for the Primary Years (3 to 12), the Middle Years and the Diploma Program for the final two years of secondary school. This is a demanding and productive requirement as indicated by the special activities required for the last two years of their course, the Creativity, Action, Service (CAS) activities.

To satisfy CAS requirements, students must contribute 3-4 hours per week, over the two-year period if they are to be able to sit for the final exams. The emphasis is on experiential learning through:

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

This strand is seen as providing a challenge to students through an opportunity for service, giving balance to the academic demands of the course, encouraging the development of practical skills and interests and relating the schools involved to their own community and the wider world community. At the end

of the CAS activities, the students are required to produce a self-evaluation analysing their own work and its effects and the school also evaluates the project in terms of the aims. A great variety of activities results.

Land-Mine Clear-Up. The Atlanta International School, Georgia, became concerned with the issue of land-mines, given the information that there were 110 million land-mines in 70 countries and these were killing or maiming 26000 people per year. The students launched fund-raising activities in their own community, which dramatically raised the profile of the issue and raised over $US1 million towards the clean-up program.

Huruma Community House in Nairobi, Kenya. Students at St Mary's School, Kenya, became concerned with the children and other vulnerable people in the Huruma community where unemployment and poverty are major threats, particularly to old people, often without any support, and to young people. The students commenced a regular program, through Huruma Community House, feeding children, working with young people on educational programs, assisting the disabled, talking with older people and staffing the library.

The Yao Minority, Canton Province, China. The students at Li Po Chun World College, Hong Kong were concerned to develop their understanding of minority groups in China. They formed a link with the Yao minority, a small ethnic group living in isolated conditions in the Canton Province. Now, each year a group of the students go to live in the area, visiting and working with the Yao people in their fields, building houses, improving roads and, in particular, forming relationships with the young people.

Water Supply for a Village in Ghana. Students of the Gmeiner International college had worked with the young people of Kakasunaka Village, assisting with education programs. They noticed the heavy work done by the women, in carrying water for a long distance by containers from the nearest stream. They discussed with the village people the long-felt need for a constant supply of good water, organised to provide water pipes and worked with the villagers to dig trenches and lay pipes. Now, with a guaranteed supply of clean water, the students continue their work with the village, building a study centre and helping with study programs.

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