

From Reality to Virtuality: Commonwealth Education in Transition



Council for Education in the Commonwealth

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Ladies and gentlemen:

I am honoured that you have invited me to be here to deliver this address. You are very kind to me, as I know that there are many here who know more than I do about the Commonwealth, its educational traditions, recent developments and emerging needs. Therefore, I will refrain from tiring you with details of what you already know and attempt to discuss with you a few specific challenges that confront educational planners, policy makers and practitioners as they aspire to move away from high cost, elite, institution-centred provision to one where the focus is very much student centred, affordable and mass in nature. In doing so, one invariably must consider the practice of distance education as an important option in any attempt at coupling mass education and low cost (this may or may not be so but at least that is the perception) in most parts of the developing Commonwealth.

2. Not too long ago, a Commission was set up by the Commonwealth Secretary General to consider means to promote the study of the Commonwealth. One of the findings of the Commission, which in many ways confirmed its own intuitive knowledge, was how important an ingredient education has been and continues to be in the formation, growth, development and continuing bond among the nations of the Commonwealth. As the Commissioners pointed out in their report, more than any other co-operative effort on the part of member nations, educational interchange has been amongst the most fruitful mechanisms binding and bringing the Commonwealth together. The relationships from shared ideas, ideals and values arose out of an educational culture that provided the "intellectual and spiritual framework for the Commonwealth's evolution; it has fashioned

in large measure the Commonwealth as we know it today". From legal systems to parliamentary governments, from medical ethics to agricultural practises, from literary traditions to engineering standards, the Commonwealth's educational systems and values demonstrate a common thread that is the envy of the world. This system is in transition today; its emerging opportunities are enormous as are the threats to it. The opportunities are driven by technology, demand, globalisation and universal interdependency while the threats come in the forms of competition, narrow linguistic and political nationalism. In the next 30 minutes or so, I will attempt to describe, from a development point of view, where the Commonwealth is in terms of these issues and submit some concerns for your consideration. I will do this in three parts:

(i) In Part 1, I would like to review the global situation in terms of the educational challenges confronting humankind as it faces a population of some ten billion people by the middle of the next century;

(ii) In Part 2, I would like to describe to you where some Commonwealth nations are in terms of using distance, resource-based or technology-driven education; and

(iii) In Part 3, I wish to highlight a few challenges that these nations and others may have to overcome in order to realise the many opportunities that technology and our experience of distance education can provide as we move away from a narrow to a broader provision of education.

PART 1: A Question of Numbers

3. Almost every projection that has been made so far seems to confirm the fears of Ehrlich and others that the population of the world will continue to expand over the next ten to fifteen years at an annual average rate of about 1.6%; in 1993 the world population was at 5.5 billion; by the year 2000, it is expected to reach 6.2 billion and the year 2050 will see population figures around the 10 billion mark. Some 35% of the world population inhabit the 53 countries of the Commonwealth of which four have the unique distinction of being among the nine most populous countries of the developing world (Table 1).

Table 1: Projected Changes in the World Populations (numbers in millions)

Region	1990	1995	2000	2005	2010
World Total	5,295,300	5,759,276	6,288,254	6,688,159	7,149,499
CAGR		1.7%	1.6%	1.4%	1.3%

More Developed Regions	1,211,138	1,244,176	1,277,963	1,310,427	1,340,532
CAGR		0.5%	0.5%	0.5%	0.5%
Less Developed Regions	4,084,162	4,515,100	4,950,291	5,377,732	5,808,967
CAGR		2.0%	1.9%	1.7%	1.6%

CAGR: Compound Annual Growth Rate (for previous five-year period).

Source: P.M. Callan, Future Scenarios: Education and Work. Report on the Conference on Directions: Education and Training for 15-24 Year Olds. Sydney, Australia. 1994.

4. The growth, however, will not be even. Highest growth rates will be encountered in the poorest of countries, while in the rich and industrialised countries it will remain stable and may even show a minus growth. By the end of the century, according to UNESCO, the share of the developing countries in the population pool will be around 95%. There is also another twist to these statistics which has an impact on education and this is the structure of the population itself. The richer but slower growth countries are also those that are ageing - in these countries, the proportion of the over 65 years of age are increasing, going up to about 19% by the first quarter of the next century while in the developing parts of the world the numbers of the young (those below 15) will explode (anything up to 1.2 billion by the early part of the century, (Table 2)). It is the poorer countries with large numbers to be educated also that currently have the least provision for education both qualitatively and quantitatively; a short supply of teachers, books, library and laboratory facilities and many other necessary infrastructures needed for good education.

Table 2: Projected Changes in the 15-24 Year Old Population (numbers in millions)

Region	1990	1995	2000	2005	2010
World Total	1,014,940	1,031,809	1,070,638	1,159,319	1,240,839
CAGR		0.3%	0.7%	1.6%	1.4%
More Developed Regions	180,760	177,252	175,345	175,800	174,967
CAGR		- 0.4%	- 0.2%	0.1%	- 0.1%
Less Developed Regions	834,179	854,566	895,293	983,520	1,065,872
CAGR		0.5%	0.9%	1.9%	1.6%

CAGR: Compound Annual Growth Rate (for previous five-year period).

Source: P.M. Callan, Future Scenarios: Education and Work. Report on the Conference on Directions: Education and Training for 15-24 Year Olds. Sydney, Australia. 1994.

5. Even as we approach the 21st century, access to all levels of education in the poorer nations of the world continues to be appalling. Roughly, 960 million or about one-fifth of the world's population is still illiterate; a further 900 million (another fifth) can read and write but are, for all intents and purposes, functionally illiterate; a further 700 million may have, at most, a mid-secondary level education making it difficult for them to aspire for anything more than low-skilled jobs and wages. Anything up to two-thirds of these populations are found among the 53 nations of the Commonwealth and even more depressing is the fact that up to two-thirds of these groups are made up of girls and women.

6. While the poorer countries face the challenge of illiteracy, under-education, under-supply of education and quality of education, on the other end of the scale the challenges of the richer nations are equally daunting. Their (Australia, New Zealand, the United Kingdom and Canada) major (educational) concerns are centred around unemployment of the young, under-employment, the long-term unemployed, functional illiteracy, new migrants, isolated and marginalised communities and provisions for the chronologically old but mentally alert parts of their population.

7. There is yet another aspect of the demographic picture that needs to be taken into account as we review the educational situation.. This is the level of educational attainment of the world's populations. Whilst we bemoan the fact that illiteracy and semi-literacy is on the increase, it must also be recognised that over the last quarter of the century, remarkable progress has been achieved in educational provisions world-wide. Participation rates at primary, secondary and tertiary levels have increased, especially in the developing parts of the world. It is estimated that some one billion are currently in school (compared to about 300 million, 50 years ago), and it is predicted that a significant number of them will seek opportunities for further education (Table 3). Using present growth trends, it is possible that some 150 million more post-secondary places, in addition to the present 60 million, will have to be created in the next 25 years or so to meet this new demand. The demand will come mostly from the developing parts of the world.

Table 3: Rates of Education Participants by Level (World Totals), 1970-1990

First Level		Second Level		Third Level	
1970	1990	1970	1990	1970	1990
89%	99%	36%	50%	8.5%	12.7%

Source: P.M. Callan, Future Scenarios: Education and Work. Report on the Conference on Directions: Education and Training for 15-24 Year Olds. Sydney, Australia. 1994.

8. The 'demand' picture is also confounded by a global recognition that education does not necessarily stop with an initial qualification but is a continuous lifelong activity. This means that educational providers must be able to not only provide basic education to 18-year olds but also make provision for the regular updating, extending, upgrading, supplementing and broadening the skills and knowledge that are needed for productive work places and participatory citizenship. Some 80% of today's workforce, about 2 billion people, can be expected to continue working well into the first quarter of the next century. Meeting the educational needs of such people will require us to question the paradigms of present practice of space and time sensitive, institution centred curriculum and assessment systems. In North America and large parts of Europe, part-time learners now outnumber full-time learners and their educational needs and expectations of measuring that outcome is beginning to appear in the political agenda of many governments.

9. Bill Gates, in his book *The Road Ahead*, said "We are all beginning another great journey. We aren't sure where this one will lead us either;" he is one of many in our generation who has expressed this view. We are the first generation that know for sure that we do not know what the future would be like. Frequent career changes are becoming a familiar phenomenon and with these changes come the need to learn new skills and acquire additional abilities. The rapid pace of technological changes has convinced nations and businesses of the need to have flexibility in the quality of the labour force. This requires not only keeping abreast of technological changes but even ahead of them. A recent UNESCO Report considers them as evolutive skills which are tied in with knowledge and know-how. Educational institutions, therefore, can no longer contend themselves with training a labour force for stable industrial or even agricultural jobs, instead, they must train individuals to be innovative, capable of evolving and adapting to a rapidly changing world of work.

10. The direction that education will take as we near the end of this century may therefore be governed by a number of forces, but three may stand out to be critical. They are:

. A diversity of participants (or learners) in the activity: schooling will not be limited to those between five and 24. Education and training will be of potential interest to all individuals at all stages of their lives, i.e., from literacy courses to those wanting to enter the University of the Third Age;

. A diversity of goals: learner of choice will study for a variety of reasons and objectives, learners will make decisions on what they want, whether it is for skills enhancement or intellectual development; and

. A diversity of contexts: full-time study within the time-tabled constraints of the classroom is only accessible to a few; for the many who wish to study, learning will have to happen at a time and place of their personal choice.

11. It is in this global context of increasing and diverse demand and supply that I wish to explore the application of distance education in the Commonwealth.

PART 2: From Distance to The Virtual

12. It is said that, globally, between 10 and 20% of all participants in post-secondary education do so through the distance mode; the Commonwealth may account for as much as 50% of this figure. Pushed by a desire to open up access on the one hand and pulled by the need to economise on the other, distance education has become a very important vehicle in almost all the populous countries of the Commonwealth, very often transcending both the formal and non-formal sectors. The form and shape of the practice as well as the nomenclature used in describing it is limited only by the enthusiasm and imagination of those practising it - flexible learning, multi-channel learning, off-campus programmes, external studies, correspondence education, radio and tele-education, and in keeping with the emergence of the cyberculture, the virtual classrooms and lectures which are beginning to appear wherever you can find a guru, a server and a computer. In one way or another, these institutions seem to address one, a few or almost all of the following demands of their communities:

- . Balancing past inequalities to access;
- . Offering a second chance;
- . Mass education and training; and
- . Educating rural and marginalised groups.

13. More than any other continent, the Commonwealth nations of sub-Saharan Africa present the most glaring evidence of the gaps between those who are educationally well provided for and those who are not. Except for South Africa, the Commonwealth nations of this continent are mostly low-income, agricultural and industrial economies. To cope with the challenges of the next century, whether it is conflict resolution, agricultural production or environmental management, better and more education is needed in every sector. In the 1996 Human Development Report, it was stated that roughly half the children who enter Grade 1 barely finished Grade 5 (a 50% wastage rate) and some 80 million boys and girls are still out of school; the school life expectancy of a child is as low as 350 days, and at the tertiary level in the worst-off parts of the continent there are less than 16 university places for every 100,000 head of population. It is therefore inconceivable that neither local resources nor international assistance will be able to meet the needs of and demand for education using conventional delivery methods alone. For most of sub-Saharan Africa, educational opportunities can only be satisfied by the use of mass distance education.

14. There is a long tradition of distance education in many of the African countries in almost every sector of education. UNISA (The University of South Africa) claims to be the largest and oldest of the dedicated distance teaching institutions in the world. Besides UNISA, the Technical College of South Africa (TECHNISA) - pre-tertiary technical education - also provides technical and trade related distance education in the country.

Further north, the Republic of Tanzania has an Open University, Zimbabwe and Malawi are planning theirs. Mauritius recently set up its Open Learning Agency after many years of debate and discussion, thus bringing all of its distance education under a single umbrella. There are also numerous departments of external studies offering a variety of courses and programmes leading up to formal qualifications. A number of Non-Governmental Organisations, notably INADES Formation, has a pan-African character delivering non-formal education using distance education methods.

15. Distance education in Africa is very much at the basic level; print continues to be the main vehicle for delivery in the formal sector, and print and radio play important roles in the non-formal sector. Even at entry level, good practice in distance education requires trained academic and support staff, reasonably equipped study centre facilities, functioning postal and communication systems and political commitment at the highest level. There are a few pockets where all of these come together and systems work reasonably well but, by and large, inadequate human and physical infrastructure result in poor materials, unsatisfactory distribution systems, inadequate student support resulting in massive dissatisfaction all around. Despite these difficulties, distance education has shown persistence, and recent initiatives by governments and international agencies are making it more central to educational delivery on the continent. One such initiative involves the World Bank which is attempting to pilot an African Virtual University on the basis of applying new and emerging information technologies to delivering tertiary level education on user paid basis. The details of this ambitious venture is still vague, but it is proposed that the source of knowledge is believed to be an American university or a consortium of American universities and delivery will be effected via a Geo-synchronous satellite provided by one of the big American corporations. Even virtual universities need a certain type and level of infrastructure at the learners end and the success or failure of such a venture will depend on that infrastructure. It will be interesting to watch this development as it unfolds.

16. Australia has one of the world's most comprehensive educational system with almost total participation at primary school level but gradually diminishing to between six and 10% at the post-secondary level. Those of us who have been following the Australian debate on the value of education, skills training, continuing and lifelong education and the economics of it all, know that the debate is far from over. The application of high technology to education seems to have extended the scope of this debate even further. Despite the uncertainties of a few years ago, there is a major resurgence of interest in distance education once again. Australia has always presented the greatest diversity in the practise of distance education, with a great tradition of taking knowledge and skills to widespread and isolated communities. In recent years, the Australians have also been among the most aggressive vendors of educational products both in their own vicinity as well as (almost) pan-globally. It is difficult to predict where distance education will move towards in this country. There is no single award granting institution that is totally dedicated to delivering education at a distance; a multitude of technical and further education colleges, universities, professional

associations (engineering, accounting, medicine) are all engaged in some kind of distance education programmes. Open Learning Australia, established some five years ago, acts as a publicist, promoter and broker of distance education courses of/for its members at the post-secondary level, however, it does not create its own credit granting courses. Given the Australian's love of and for technology, one can anticipate a lot of activity in wanting to go 'virtual'. Some remarkable experimental efforts in the use and application of multimedia and other emerging communication technologies, which are underway, are worth tracking. Even as education goes virtual, the concern in this country is not about human capacities and talents (there are plenty); it is not even about fiscal resources (though there is some concern here); it is more about a lack of co-operation among co-ordinating practitioners, fragmentation of efforts and provisions, and unnecessary competition. This, one suspects, removes a great loss of choice and flexibility for the users of this provision given that one primary reason in wanting to go virtual is to give the people a greater choice without, in anyway, denying the benefits such a choice engenders.

17. In the South Pacific, New Zealand shows some similarities to its bigger neighbour in the north, though the Correspondence School and the Open Polytechnic extend their services throughout the nation. In the university sector, a number of Universities including Massey at Palmerston have a long tradition of delivering courses at a distance. The situation is totally different among the Pacific Islands Group of 13 different countries, 60 cultures, about 1.5 million people in total and made up of small populations and dependent on a small range of activity (plantation agriculture, tourist services and external trade) to drive their economy. Education needs therefore seem to be very much at the secondary school and vocational sectors. The University of the South Pacific has been and continues to be the main provider of distance education for the past 25 years. Most of the resources needed for education is aid-dependent and the concern here is the absence of adequate indigenous capacity to sustain the continuance of this programme should external aid cease.

18. Distance education is firmly established in the Caribbean. A few years ago, there was concern that chronic under-funding, bad practice and dubious status would impede the growth of distance education; the persistence, perseverance and success of a few projects seemed to have brought interest in and enthusiasm for distance education in this part of the world. Notwithstanding these successes, the challenges still remain, as generally there are many initiatives with all the best of intentions, but because of poor funding and lack of trained talent, end up by delivering very poor quality education.

19. The countries of Commonwealth Asia fall into three socio-economic groups. There is India that is autarkic, large, self sufficient in agriculture, has a large manufacturing base and with sufficient personnel in science and technology to comfortably participate in the information age. However, the country is also confronted with eradicating illiteracy, improving the quality of its primary and secondary education and changing the almost total culture of its higher education sector. The second group of countries, made up of Sri Lanka, Pakistan and Bangladesh, fall into the low- to middle-income industrial countries,

and as they prepare to move even further up the economic ladder through participation in high technology manufacture, improvements in secondary school and post-secondary vocational education are imperative. The third group of countries, made up of Singapore, Malaysia and Brunei, enjoy high incomes and at the same time, in the case of the first two, have made successful inroads into high technology manufacture and export. These countries have excellent educational systems at the school and university levels. As they become integrated more and more into the knowledge economy, their challenge will be to keep their work force upgraded and reskilled to be globally competitive. In a curious sort of way, all three groups need to look at non-traditional ways of delivering education to meet their needs. Not surprisingly, the continent is home to the biggest and most complex distance teaching systems in the world (India, Pakistan and Bangladesh). Even in those states without open universities (Singapore and Malaysia), provisions for the delivery of formal studies outside campus walls are available. Challenges to Asian institutions include addressing the needs of some 659 million illiterates, about 100 million out-of-school children, and many millions of aspirants for post-secondary education in isolated and marginalised communities; issues of quality, use of appropriate technology and funding are also beginning to attract attention at both institutional and governmental levels. Of great interest is the leadership being provided by the Indira Gandhi National Open University and the National Open School in the application of newer technologies to educational delivery. One hopes that this application will go beyond delivery.

20. I should not be bringing coal to Newcastle and attempt to describe what is happening in this country. However, it was surprising to read Jenkins in a recent report that some 50% of all universities in this country are engaged in some form of distance education. The nature and quality of some of these ventures will need some scrutiny, but it is commendable that despite the questions of quality, mass higher education is becoming a reality in the UK. Work at the Open University's Multi-Media Institute, British Telecom among others, is creating interest in the use of the newer interactive technologies but, at the same time, a whole range of other questions from curriculum, assessment, copyright, fees, learner autonomy and choices are also being raised.

21. In Canada, just like its southern neighbour, provision for education in all sectors is large. Participation in pre-tertiary education is universal, and at the tertiary level some 50% of school leavers can expect to find a place. Despite this, most provinces also have provisions for self-learning. Recent years have witnessed some ruthless trimming of educational budgets by governments confronted with massive deficits. This, along with concerns of ageing populations and shifts in the economy seem to stimulate interest in the delivery of education by non-traditional mechanisms. Given the country's active telecommunication industry, technological innovations and long experience in delivering education to remote parts of their vast land, Canadians are engaged in a variety of discussions and debates on the pros and cons of telecommunication-driven education. From Prince Edward Island to British Columbia, both political and academic interests in the virtual classroom are increasing not only from an access and economic point of view but also from a desire to conserve Canadian traditions and culture. Provinces such as New

Brunswick, Alberta and Ontario are actively pursuing opportunities to develop virtual classrooms and campuses. The country's telecommunication infrastructure has the capacity to carry the interactive academic content; the ball seems to be firmly in the academic court awaiting its response.

22. I would like to conclude this part of the presentation with a short statement on dual mode institutions. It would not be incorrect to say that long before the arrival of the dedicated distance education institutions, many colleges and universities across the world have been providing access to off-campus learners; many still do, especially India, Malaysia, Canada, Australia, the USA and, increasingly, the UK. In India, there are more students learning at a distance through conventional rather than open universities; in Malaysia, all public-funded universities are being encouraged to become dual mode. With the growing nature of the educational demand, the opportunity to develop a new source of income, the increasing versatility of the newer technologies and a desire to demonstrate efficiencies, it is likely that during the next few years a large part of the tertiary sector will be engaged in delivering instruction to non-campus-based students. The questions to ask:

. Is there a capacity to construct learning materials that are interactive, learner-centred and have the capacity to use the enormous information contained in the data banks?

. Are enough provisions being made for learner support?

. What provisions are being made for equity and access for all aspirants desiring to study through such systems?

. Is the Institution's administrative machinery capable to support the remote learner?

PART 3: Emerging Issues and Challenges

23. In a report written for the OECD, my friend Bill Renwick had this comment to make: ". . . The quality of learning and teaching and how to improve it, and how to make it available to a larger, more diverse student population is thus an essential part of the policy agenda for face to face as well as distance teaching institutions. One of the questions being asked is how far excellent face to face teaching and excellent distance learning derive from the same pedagogical principles even though they might employ them differently. Another question is how far excellent teaching and learning in both modes can be supported, enhanced and made more effective (in both the educational and economic sense) through the judicious use of information and communication technology." The future for those having a vested interest in the subject of education in the Commonwealth boils down to four fundamental things. They are the learners, the curriculum, the technology and the skills (both pedagogical and administrative) to manage this change.

24. The New Learner requiring the services of educational institutions will be different from the one we are serving now. In terms of both prior knowledge and learning skills, we are going to be confronted, on the one hand, by individuals who will be comfortable and

competent with using the tools of the knowledge century and, on the other hand, with people who will need basic literacy and numeracy training. It will be a mistake to presume that these two groups will fall neatly into the north-south, rich-poor or developed-developing nations dichotomy. Every community will have different users and educational providers must prepare themselves to provide access to both groups. Technology, rather than being an impediment, will be an asset in meeting this challenge. In many cases, though not all, the majority of the new learners will also be learners of choice who will expect to pay for the service and in return demand that the service be provided efficiently, effectively and skilfully; in this, they will have the backing of their political representatives and governments. The new learner will also expect to be mobile and to be a global worker and citizen, and this will require that he or she has the skills to work in multicultural teams. Institutions of learning will be expected to provide them with these skills while governments will be required to establish the necessary communication infrastructure needed for such ventures.

25. Providing skills for the new learner will require a curriculum that recognises globalisation and universal interdependency in an information age which would require people to understand themselves through a better understanding of the world. I believe that these social and professional skills must become the core universal objectives which curricula must incorporate. In the recently published Delors Report, the UNESCO Commissioners called for four pillars of education which would form the basic framework of a global curriculum. These are:

- . Learning to know, by having a broad overview of things and the skills to work in depth on selected fields; learning to learn and thereby benefit from the opportunities to learn throughout life;
- . Learning to do, by acquiring vocational skills and the competencies to work in different situations and to work in teams;
- . Learning to live together, and appreciating other cultures and people, respecting pluralism, peace and managing conflict; and
- . Learning to be, so as to better develop one's own personality, acting with autonomy, judgement and personal responsibility.

26. The call for curricula reform is not a new one. Political forces, governments, international agencies, non-governmental organisations, professional fraternities have all been pleading with the educational community, especially the post-secondary sector, to produce graduates suited for life outside campus walls. It seems to me that in the next few years this demand will become even more greater. The forces outside the campus walls may eventually force the powers within the campus walls to examine their curricula, and to meet users needs rather than perpetuate the traditional practice and belief that academic freedom and autonomy do not allow a say for the consumer to demand that what is relevant, good and desirable for him or her and their communities.

27. Providing learning to diverse groups of individuals separated by space, time, prior learning skills and new training requirements will need an infrastructure that is global in reach, interactive in nature and affordable in cost. Institutions preparing to deliver education in this climate will begin to make greater use of technology in their teaching and learning, than today. Though it is unlikely that access to computing and communication technologies will be within the reach of ALL those who aspire for an education in the remaining five years of this century, one can only be optimistic in one's belief that as we progress into the 21st century accessibility will become more universal than today (Fig. 1). The technology industry has a history of making the software friendlier, hardware cheaper and operations inexpensive at every stage of its development. There is no reason to doubt that this trend will not continue (Figs. 2 and 3).

Fig. 1: The Evolution of the Age-Structure of the World's Population, 1980-2010 (percentages)

Fig. 2: Computers for 100 People in Selected Countries, 1995

Fig. 3: Information Processing and Telephone Costs between 1975-1995

28. However, to make this happen, national governments may have to build an infrastructure to support such a teaching and learning environment. This infrastructure should have, among other items, the following:

- . That all those who deliver content to the distant learner must use teaching methods that are resource based and require students to take responsibilities for their own learning;
- . That such teachers are expected to use the technologies of electronic networks, CD-ROM's, telephones, computers, and a range of emerging multi-media tools as part of their professional skills;
- . That institutions must provide all teaching staff with configured work stations located in their offices and linked to libraries, knowledge bases, media centres colleagues and students;
- . That students must be mature as independent learners and need to have access to technology and must be technology literate;
- . That students have the capacity to pay part of the cost of their learning;
- . That the management of institutions reconfigure institutional resources and invest in the production of knowledge products and pathways to deliver them; and
- . That management prepares itself to coping with a diversity in the make up of its students, their goals and the context within which they learn.

29. The better endowed parts of the Commonwealth will probably make this investment happen, but for about 45 or so countries of the Commonwealth that certainty is less. Added to this will be other barriers such as:

- . The design of communication and information technologies that are culture specific;
- . The design of software packages which have an industrial country origin;
- . A dearth of appropriate databases and content; and
- . A dearth of relevant human resources to make such systems work.

30. The mandate of the Commonwealth of Learning and the modest position it currently occupies in bringing about co-operation in distance education makes it a useful organisation to develop such strategies that are necessary to enable those 45 countries of the Commonwealth to benefit from these new innovations in educational delivery. The reconfiguring of educational delivery and building support for independent learners are enormously expensive. Partnerships and collaboration are one way of getting more for the 'buck'. Successful partnerships rely on, among other things, some of the following:

- . Complimentarity;
- . Mission clarity;
- . Commitment; and
- . Leadership.

31. Perhaps an honest broker such as the Commonwealth of Learning can be the new catalyst in building real bridges for virtual classrooms to occur.