

EDUCATION FOR KNOWLEDGE ERA

Open and Flexible Learning



Education for Knowledge Era

Open and Flexible Learning

100%

100%

100%

100%

100%

100%

100%

100%

100%

100%

100%

Education for Knowledge Era

Open and Flexible Learning

V.C. Kulandai Swamy

Editors

Suresh Garg
Santosh Panda



© 2002 V.C. Kulandai Swamy

Apart from any fair dealing for the purpose of research or private study, or criticism or review as permitted under the Copyright, Designs and Patents Act 1988. This publication may only be reproduced, stored or transmitted in any form or by any means, with the prior permission in writing of the publishers, or in the case of reprographic reproduction in accordance with the terms of the licences issued by the Copyright Licensing Agency. Enquiries concerning reproduction outside those terms should be sent to the publishers at the undermentioned address.

Kogan Page India Private Limited
4325/3 Ansari Road
New Delhi 110 002

ISBN 81-7554-178-4

Published by Vinod Vasishtha for Kogan Page India Private Limited,
4325/3 Ansari Road, Daryaganj, New Delhi 110 002 and printed at
Replika Press Pvt. Ltd., Delhi 110 040

Contents

<i>Preface</i>	<i>vii</i>
<i>Editors' Note</i>	<i>ix</i>
<i>Abbreviations</i>	<i>xi</i>
1. Evolution of Open Learning	1
2. Prosperity Through Pooling Knowledge Resources	14
3. Development of Open Distance Education	25
4. Structure and Management	50
5. Funding Open Universities	60
6. Cost-Effectiveness of Distance Education	74
7. Coordination	145
8. Epilogue	155
References	165

Preface

Experts in the field of higher education are credited with predictions which amount to stating that education will undergo a vast transformation and the educational campuses as such will disappear before long; there will be no cluster of classrooms or laboratories; no libraries, no student houses or staff colonies. While such observations may sound extreme, they do give expression to the trend in education and visualise the academic world at a distance. The substance of the message is that efforts in the domain of higher education will get distributed in space and take place in classrooms, offices, workshops and at residences. It will also get really distributed in terms of age from youth to twilight of one's life.

Whatever be the manifestation that learning takes, two operations remain basic:

- (i) Instruction
- (ii) Self-study

Instruction requires a teacher and Self-study a set of resources. The use and the form of these two may vary from person to person and constitute the subject of all our studies.

My credentials for writing on subjects related to distance education are not based on scholarship acquired through deep study or organised training under any apprenticeship. The content is based on experiences gathered in handling issues associated with imparting knowledge or enabling the acquisition of knowledge. The experiences have been varied and the opportunities have been diverse, made possible by my positions as an academic and as a Vice-Chancellor of three major universities and in three different domains, namely:

- (i) Madurai Kamaraj University—a general University of Arts & Science;
- (ii) Anna University—a Technical University; and
- (iii) Indira Gandhi National Open University—a Distance Education University.

The educational process that I have gone through ranges from learning by writing the alphabet of my mother tongue over a spread of sand on an uneven floor in a small village school, and moving from there in my career in measured steps to Vice-Chancellor, IGNOU, having the opportunity and experience of introducing Teleconferencing for instruction, using a specially allotted transponder in an Indian satellite, I have been a spectator as well as a participant in the onward march of education from its stage of craft to high technology.

The book is not composed of chapters written specifically for this publication; but is a collection of materials drawn from convocation addresses, keynote speeches and publications made on different occasions over the period of last ten years. The editors have done an amazing feat of knitting them together and imparting continuity and coherence into the collection. Their task has been that of a craftsman who polishes pebbles to add to them some dazzle as to deserve a place in an ornamental wear. It is difficult for me to thank them adequately: more so because they took the initiative to obtain the material from me after long and insistent persuasion and ultimately gave it a form so that some of my thoughts may find a wider audience and endure for a longer time.

I have often said that if a society does not bring about mini revolutions, now and then, it must be prepared for a major revolution. While in the last two centuries industrial revolution and the onset of high technology brought about far reaching changes leading to a great productivity revolution in every area of activity, imparting education in the classroom has remained a craft and has not experienced any great increase in productivity. In the second half of last century, distance education emerged on the scene heralding the arrival of technology in education. Since then and in a short period enormous progress has been made. Distance education has already seen five generations.

In the 1960s when distance education made its appearance in a reasonably well defined form as U.K Open University (UKOU: 1969), some of the developing countries managed to follow suit, within a reasonably short period, with similar institutions in their country. The Allama Iqbal Open University (AIOU: 1974) in Pakistan, Sukhothai Thammathirat Open University (STOU: 1978) in Thailand, Open University of Sri Lanka (OUSL: 1978) in Sri Lanka and Andhra Pradesh Open University (APOU: 1982) in India, now known as Dr.B.R.Ambedkar Open University (BRAOU) are some of the examples.

As we stand at the beginning of the 21st century, we realise that the Internet has burst on the scene and the advanced countries are well on their way to the advent of high technology in imparting education. The developing countries may acquire the technology, but the clients stay far behind. The developing countries again face a threat of technology divide and they must devise ways of facing it.

It is realised much to our dismay that in the 19th and especially 20th centuries, when the world marched ahead into prosperity riding the waves of science and technology, it has left behind a vast mass of humanity many of whom go to bed with a hungering stomach. This did not happen on this scale even during those days when humanity was moving into the beginnings of civilisation from relatively primitive existence.

Whether the developing countries welcome it or not, the age of knowledge has arrived. It manifests in the form of liberalisation and globalisation. Universal education, lifelong learning, continuous updating and innovation are needed for survival in the present age. Distance education meets many of the challenges and provides the developing countries an opportunity to move faster and narrow the divide. We need to use all our ingenuity to develop this tool to extend it to its possible potential and use it to its ultimate capacity.

It has always been my faith that we must do today's job with today's tool; if we do today's job with yesterday's tool, tomorrow we would be out of business.

Editors' note

Scholars endowed with prowess of original thinking are so engrossed in with their work that they care little for collating them. The print medium comes in handy when it comes to preserving their knowledge and transmitting, the benefits to later generations. Even if they are convinced of this, persuasion and perseverance is necessary because they would like to be sure about the quality of reproduction and have complete faith in the intentions and ability of those who propose to put them together. We are extremely honoured and grateful to the author to have reposed faith in us. This is the attraction, as also the charismatic personality of the author, that guided us into this task. In the process, we have realised that our experiences on education and particularly distance education, have been enriched.

Growth and development of open distance education in the Asian region, and more so in the Indian sub-continent has been truly phenomenal in the last three decades of the twentieth century. There has been exponential growth in the number of academic programmes, learners and those engaged in their design, development, implementation and evaluation, as also perceptible improvement in the quality of their organisation and management. The present volume *Education for knowledge era—Open and flexible learning* is based on keynote and special addresses of Professor Kulandai Swamy in this area. It describes and analyses critically the growth and development of ODL system to address issues of access and equity, coordination and management, collaboration and networking, funding and cost-effectiveness. We have tried to update data depending upon its availability, without interfering with the original ideas. We hope these efforts have resulted in an enriched and coherent reading.

We acknowledge the help extended by our colleagues, Dr. Manjulika Srivastava and Dr. V. Venugopal Reddy, in bringing coherence to the volume. Any omissions or mistakes should be ours.

Suresh Garg
Santosh Panda

Abbreviations

A/V	: Audio/Video
AC	: Average Cost
AICTE	: All India Council for Technical Education
AIOU	: Allama Iqbal Open University
AIU	: Association of Indian Universities
AOU	: Association of Open Universities
APOU	: Andhra Pradesh Open University
B.A	: Bachelor of Arts
B.Com	: Bachelor of Commerce
B.Ed	: Bachelor of Education
B.G.L	: Bachelor of Graduate Law
B.Lib.Sc	: Bachelor of Library Science
B.Litt	: Bachelor of Literature
B.Sc	: Bachelor of Science
B.Tech	: Bachelor of Technology
BAOU	: Baba Saheb Ambedkar Open University
BRAOU	: Dr. Bhim Rao Ambedkar Open University
CABE	: Central Advisory Board of Education
CCI	: Correspondence Course Institute
CS	: Conventional System
CU	: Conventional Universities
DEC	: Distance Education Council
DLS	: Distance Learning System
EADTU	: European Association of Distance Teaching Universities
EDEN	: European Distance Education Network
EFA	: Education for All
F2F	: Face-to-Face
FM	: Frequency Modulation
FTE	: Full-Time Equivalent
GDP	: Gross Domestic Product
GNP	: Gross Net Product
GOI	: Government of India
GUA	: Global University Alliance
HDI	: Human Development Index
ICT	: Information Communication Technology
IEES	: Improving Efficiency of Educational System
IGNOU	: Indira Gandhi National Open University

xii Abbreviations

IIIT	:	Indian Institute of Information Technology
IIM	:	Indian Institute of Management
IIR	:	Institute for International Research
IIT	:	Indian Institute of Technology
IT	:	Information Technology
KOU	:	Kota Open University
KSOU	:	Karnataka State Open University
L.L.B	:	Bachelor of Law
M.A	:	Master of Arts
M.Com	:	Master of Commerce
M.Ed	:	Master of Education
M.Phil	:	Master of Philosophy
M.Sc	:	Master of Science
MBA	:	Master of Business Administration
MHRD	:	Ministry of Human Resource Development
MPBOU	:	Madhya Pradesh Bhoj (Open) University
NAAC	:	National Assessment and Accreditation Council
NBA	:	National Board of Accreditation
NIME	:	National Institute of Multi-media Education
NOU	:	Nalanda Open University
ODA	:	Overseas Development Agency
ODE	:	Open and Distance Education
ODL	:	Open and Distance Learning
ODLAA	:	Open and Distance Learning Association of Australia
OLI	:	Open Learning Institute
OU	:	Open University
OUSL	:	Open University of Sri Lanka
PG	:	Post Graduate
Ph.D	:	Doctor of Philosophy
S&T	:	Science and Technology
SAARC	:	South Asian Association of Regional Cooperation
SC	:	Scheduled Caste
SCC&CE	:	School of Correspondence Courses and Continuing Education
ST	:	Scheduled Tribe
STOU	:	Sukhothai Thammathirat Open University
TC	:	Total Cost
TV	:	Television
U21	:	Universitas21
UG	:	Under Graduate
UGC	:	University Grants Commission
UKOU	:	United Kingdom Open University
UNDP	:	United Nation Development Fund
UPRTOU	:	Uttar Pradesh Rajarshi Tandon Open University
UT	:	Universitas Terbuka
VCR	:	Video Cassette Recorder
VU	:	Virtual University
WWW	:	World Wide Web
YCMOU	:	Yashwantrao Chavan Maharashtra Open University

Evolution of open learning

Introduction

As we stand at the dawn of the 21st century, and review the achievements of the 20th century, it is not the breakthrough in nuclear science or the invention of the versatile tool—the computer—or the adventures in space or the advances in biology that stand foremost. The most remarkable development of this century is the emergence of knowledge as a resource—a resource that is renewable: that could compensate for the absence or inadequacy of any natural resource. All resources are meant for development and when we look at knowledge as a resource, we move on to the issue of development of human resources. From land and water resources in the agricultural era and through mineral and oil resources in the industrial era, we have now moved to human resources in the information age or knowledge era, as some choose to say.

In the agricultural civilization, education was an ornament, an embellishment: it had no great economic value. The world depended for food, shelter and clothing, not on literate, but on trained persons. In the industrial economy, development depended on Science and Technology which was not accessible to illiterate people. Education became a necessity: it attained an economic significance and became a tool for development. With the emergence of knowledge as a resource, education has come to occupy the center-stage as never ever.

In the world as a whole, more new universities were established after 1950 than all the universities established in the previous period put together, beginning from Bologna in Italy or Oxford in England. Even in an advanced country like the United Kingdom, there was an explosion of new universities in the 1960s and again in the 1990s, though the phenomenon has been mostly characterised by upgradation of existing institutions. In a matter of three decades, perhaps, the universities have more than doubled in U.K. Today, the governments in both advanced and developing countries spend more money, a higher percentage of their GNP, than ever before, on higher education.

Evolution of education

Education is not a static phenomenon; it is an organic entity. It changes, evolves and grows; it responds to the needs and demands of the economy. One could clearly discern three stages so far in the development of education:

2 Education for knowledge era

- The teacher-disciple system when the student almost learnt at the feet of the master. The *gurukul* system¹ of India, or the Academy of Plato and the Lyceum of Aristotle of Greece represent this model. Even today the work of an M.Phil or Ph.D candidate under a supervisor has many characteristics of this system.
- As the demand for numbers increased and new disciplines grew, the teacher-disciple system was no longer adequate to meet the challenge. We are told that Leonardo da Vinci was a master of all subjects as recently as the 16th century; but today even the tallest expert cannot claim that he/she is the master of one single subject. No single scholar can teach science or engineering or medicine. Consequently, the classroom system came into existence. It did not replace the earlier one, but absorbed it and incorporated additional dimensions.
- The classroom system, involving face-to-face education, meant mainly lectures, instead of discourses, and it flourished over the centuries: it is certainly performing the functions it was designed for. Initially, the functions of a university were preservation, creation and communication of knowledge. Later, to meet the growing needs, it took on itself extension, thus adding another dimension. The universities are now expected to interact with the community. In other words, they have to move outside the campus to make any social intervention as part of their extension activities.

The demands made on education and the challenges that education faces today are many and diverse. The conventional system was not designed to meet these new demands. It has become inadequate. A new system, a new mode was needed and distance education system emerged on the scene, gradually over a century, but decisively in institutional form since the sixties.

The new demands or the new challenges arose from:

- universalisation of education or Education for All (EFA);
- continuing or life long education; and
- issues of access and equity in educational opportunities.

The words in the above phrases may appear familiar; but the concepts that they convey are essentially developments of the twentieth century.

In every society that has a long cultural history, the importance of education has been fully realised. But the concept of 'Education for All' was not in the scheme of things in the ancient civilization. Talking about India, Swamy Vivekananda makes the following observation:

A nation is advanced in proportion as education and intelligence spread among the masses. The chief cause of India's ruin has been the monopolizing of its whole education and intelligence of the land among a handful of men. If we are to rise again, we shall have to do it by spreading education among the masses. The only service to be done for our lower classes is to give them education to develop their individuality.

¹A traditional Indian system/method of learning which involved close student-teacher relationship.

Till about the beginning of the industrial civilization, the situation has been more or less the same in other countries. Coming to developing countries, it is only in 1990 that UNESCO (1990) in its Jomtien conference in Thailand adopted a resolution setting EFA as the objective to be pursued. This is based on the realization that education today is a means of upward mobility for individuals and a means of economic prosperity and overall development for nations. It is in the second-half of the twentieth century that we began to talk of expenditure on education as an investment rather than as a social service. The new demands involve target groups, much larger in number and very different from those in the conventional system:

- The children of school going age constitute 20 percent of the world population.
- Non literate/neo-literate adults comprise another 20 percent of the world population.

In the present circumstances, these two categories together would mean provision for 40 percent of the population to be put in the classroom if we adopt the conventional system. Add to this, the needs of higher education and of continuing education. Half the population, then, will have to be in the classroom. The economy of no country can afford to make such provisions.

Take, for instance, higher education in the US. While in India, we have nearly about 7.4 million students today in the higher education system, in 1992 USA had, with less than a third of our population, nearly 13 million students. But not all of them come strictly under the conventional category. Analysing the composition of students in Higher Education in USA, Croft (1992) said

Out of the thirteen and half million students enrolled today, fewer than two million are 'traditional college students', i.e. eighteen to twenty two years old full time campus residents. More than half the students are over twenty two years of age; 40 per cent are over twenty five; there are more students over thirty five than there are eighteen year olds in colleges; two fifths are enrolled part time and considerably more than a third live off campus.

If we take India, the emphasis today is on universalisation of education with priority for primary education. It needs *not* only money but also trained workforce. According to the *Fifth All India Educational Survey 1992*, there were 3,60,000 untrained teachers in the primary stage and 92,500 teachers in the secondary stage who were on teaching-job (NCERT, 1992). These numbers have grown many-fold. Only the North-East accounts for about 150,000. It *will not* be possible to train them only through about 2000 training institutions that the country has today.

We may take an example in continuing education. The strength of S&T workforce in India is the third largest in the world; being 3.5 million in 1990 (MHRD, 1992). We are aware that in S&T, knowledge doubles in less than five years. Even if we take it as five years, knowledge will multiply sixty four-fold in the thirty year period of one's career. If this is agreed to, we have to provide opportunities for several hundred thousand persons every year for updating their knowledge and skills. This number will keep growing. Similar

4 Education for knowledge era

situations exist in health services, vocationalisation of education, computer applications, agriculture, banking and literally numerous other sectors/fields. How do we handle such enormous numbers in conventional institutions? Not all of these persons can become full-time students either. *Knowledge is better updated continuously rather than at discrete intervals.*

Another dimension of the challenge is accessibility. Enormous number of boys and girls from socially, educationally, and geographically disadvantaged groups of the society, differently-abled and/or marginalised adults clamour for educational opportunities. *In the case of many of them, availability of seats does not mean accessibility.* Between the student and the conventional educational institutions, there are many barriers.

Large numbers: new target groups

Conventional system caters to the needs of learners from a specific age group of the primary, secondary and tertiary education system, provided they could become fulltime students and fulfil certain requirements of on-campus preparation. For those in and outside these age groups, unable to fulfil the on-campus requirements and those that need education and training to gain competence in the jobs and those who need to upgrade, update and broaden their skills, the conventional system does not provide opportunities. In fact, it has not been designed for such purposes. In other words, we have today many target groups who need education and training of certain prescription but are not served by the established system. The two characteristics of the emerging demands are:

- they involve large numbers; and
- they need a system that will suit the convenience and meet the needs of the learners.

In order to handle the numbers and also to improve accessibility, especially for continuing and life long education, we have to satisfy two requirements:

- higher productivity in the system; and
- greater flexibility in the structure.

It is in this context that distance education emerged on the horizon. Distance education is neither a supplement nor a complement to the conventional system. It is not even an alternative. It is a new mode in its own right and meets new demands and caters to new target groups. It has very high potential for transcending all barriers—economic, social, cultural and geographic—and reach its clients.

Application of technology

Let us now consider another aspect. Since the dawn of the industrial civilization, craft has been transformed into or replaced by technology in every area of activity and this has increased productivity. However, classroom instruction has remained a craft all along and

in the centuries gone by, there has been no appreciable increase in productivity in education. In other words, industrial revolution failed to enter the classroom and communication technology did not find many a client there. Distance education represents the transformation of education from the stage of craft to the stage of technology and thereby makes room for increased productivity. While the 19th century was marked by the transportation revolution, the 20th century was marked by the communication revolution. Distance education endeavours to make full use of information and communication technologies through the wide range of media—print, audio-visual and computing; and tools—radio, TV, satellite, computers, CD-Roms, telephone, and Internet.

Tele-communications and open distance education (ODE)

The advent of information technology has reduced the distance to zero, since the learner anywhere in the world can be taught virtually. Besides, a whole range of tele-communication media viz., computer conferencing, audio-graphics, videoconferencing are available to distance education; even communication media like computer-based training, interactive video and CD-ROM are used in which the learner interacts with textual information.

Media can be synchronous and asynchronous. In an asynchronous medium like computer conferencing, both learners and tutors get time to think over their respective responses and prepare messages to be put into their machines at their convenience for the conference. One can read and re-read messages at one's convenience, rather than at a set time. Further, messages go on piling up every day from various corners, and one gets time to read those, reflect upon and respond. The conferencing remains alive through this process though any one individual member may not have contributed to this for days together. However, asynchronous communication, especially for distance learning, has at times been boring since one issue takes longer period of discussion to be finally resolved. In synchronous communication, on the other hand, there is use of voice and vision, and both learners and teachers need to respond then and there. Those who like to think it over or do not feel comfortable with the language of communication and would like to read more references before formulating an opinion, find it very difficult to cope with this kind of communication (Garg and Panda, 2001).

In ODE, there has been an increasing use of telecommunication media in many parts of the globe. First, they provide more flexibility in the 'location of education experience' (Mason, 1994). In case of computer conferencing, learners from home or even from workplace have the freedom to connect to the system at any time (day or night) through their telephone and computer; or from the shared machine and telephone line at the workplace. Second, in comparison to face-to-face provisions, they provide a wide range of course choices. Higher level courses are being offered through computer conferencing; professional and courses on IT itself through telecommunications. Now courses on community and adult education are also available through these media. It has been found that there has been a great change in the very nature of curriculum due to use of these media. New varieties of resource materials are available through Internet, and contributions by learners all over the globe have enriched the discourses and learning experience through these media. However, there is hardly any evidence that increasing use of these media has promoted open learning.

6 Education for knowledge era

Same admission time, contact time, same rules and regulations as in the conventional system have limited the practice of open learning through these media. Therefore, though flexibility is ensured, openness is still in question. Moreover, many claim that telecommunication technologies favour learning by the disadvantaged and challenged learners, provided they have access to such technologies; they can take time to use their own language and to respond to and interact with others and tutors through their own PCs. Computer conferencing has been accorded the highest preference in ensuring access to physically-challenged and to homemakers to promote gender equality. Also, use of such technologies has changed the face of distance education from being the poor cousin of face-to-face (F2F) education to an independent mode of delivery of quality education. Quality of learning experience is enhanced because of increased interactivity, simulated experiences, and rewarding learning events.

In so far as distance education is concerned, use of telecommunications technologies has reduced the barrier between distance and F2F education; it is a step towards seamless convergence unthinkable by both groups. F2F interactions have been enhanced by the use of such technologies; distance education combines technology use with F2F interaction. On-campus students use computer conferencing for advantages of flexibility in timings, greater interaction with peers and tutors, and for global experiences through the use of Internet. On the other hand, distance education has removed the concept of isolated student (working on printed texts and depending on postal system); and these technologies have increased the level and extent of communication far ahead of those possible in F2F situation.

Internet and distance education delivery

In the pre Cold War period, Internet was a text-driven computer-based communications system used by those engaged in academic discourse and scientific research. The Cold War period witnessed its spread to maintain a network for dropping the bomb; and the decade of 1990's embarked on a new era of WWW (World Wide Web) with widespread use of graphics, audio and video, and web sites/home pages. WWW has supported quick delivery of education and training in both campus-based and distance education situations. Though the Internet has not changed the expertise of the teachers and learners to teach and learn, it has helped them to change their needs, skills and ways of operation. Even in F2F situation, its use increases flexibility in delivery and interaction. In multi-channel based open and flexible learning, Internet changes the concept of space and time, and facilitates recognition of prior learning, transfer of credits, and joint degree programmes through modularization, credit transfer, and accreditation. Learners getting their education by negotiating their learning resources over the Internet should find themselves much more acceptable to their employers. Studying through the Internet will also bring to the learners a large amount of curriculum related information which is current.

Talking about alternative modes of delivery and the context of formal school/college education, Forsyth (1996:15) remarks: '... At best formal education could be described as a eclectic activity housed in a rigid time serving framework established for administrative convenience rather than an outcome of the learner'. There has been a transition from

'teaching as telling' to 'lifelong learning'. The role of the teacher has shifted from teaching to facilitating access to and comprehension of information and learning resources. The focus of learning has shifted from structured to an eclectic activity.

Forsyth (1996) describes an anecdote in education, which is very much applicable to distance education that:

- the sum of human knowledge is an amorphous mass;
- historically, a group of people called subject experts and teachers evolved to make sense of the mass of information to others;
- by doing so, they compartmentalized, selected, edited and packaged information;
- structuring was done for parts of the amorphous whole, and parts were left out;
- due to knowledge explosion and growth of the amorphous mass, teachers failed to cope with it; and
- Internet facilitates access to the amorphous mass, building of schemata of knowledge (not confined to anybody's view), and eclectic accesses to knowledge; and involves learners in the use of technology for learning.

For contents with theoretical discourse, Internet can develop metacognition, provide linkages, facilitate bulletin board and chat sessions. However, when there are contents with wider and multiple perspectives and with open-ended question-answers, it fumbles as a pedagogic leader. Further, it is argued that even if 3-D vision and visual movements are possible, it provides only screen-based information; it is a glorified black board. On the other hand, for contents based on practicals/practice, it can simulate, provide drill and practice, structured assessment, bulletin board and structured demonstrations.

Web based learning and the Internet have immense potential. The number of WWW users went up to 50 million within four years of its inception and the number of Internet hosts and e-mail messages were doubling every year as of 1996. It is now doubling every 4–5 months. With the modern technology of WWW, it is now possible to provide education through distance mode to the world at large. But it can serve only that learner group which has access to Internet. At this point of time, access to Internet in the developing world is not so easy or widespread. As per the *HDI Report of UNDP* (1999), in South Asia only 0.04 percent of the population happen to be Internet users (Table 1.1). Only about 10% of ICT users are located beyond industrialized economies. But just like the growth of radio and television education and cable networks in the recent years, it is poised for a rapid growth.

As pointed out by Daniel (1996), we have to keep in mind the fact that 'most people in the world have yet to make a telephone call'. It is certainly a paradox that those who need the benefits of technology most are unable to avail themselves of the advancement because of their inherent limitations. As things exist today, privilege accrues to those who are already privileged. We have to choose the technology on the basis of the ability of the target group to have access to it to enhance equity.

Structure of open learning systems

With the advent of distance education, open universities and other open learning institutions

8 Education for knowledge era

Table 1.1 Internet users—The world scene (1999)

Regions	Regional population as a percentage of world population	Internet users as percentage of regional population
United States	4.7	26.3
OECD Countries (leaving U.S.)	14.1	6.9
Latin American and the Caribbean	6.8	0.8
S.E. Asia and the Pacific	8.6	0.5
East Asia	22.2	0.4
Eastern Europe and the Commonwealth of Independent States	5.8	0.4
Arab States	4.5	0.2
Sub-Saharan Africa	9.7	0.1
South Asia	23.5	0.04
World	100.0	2.4

(Note: The Czech Republic, Hungary, Mexico, Poland and Republic of Korea and Turkey are included in OECD)

have come into existence. It is largely due to the succession of momentous revolutions that are being witnessed in the field of computer science and communication technology and in their convergence/application to delivery of education. The open university came to be understood as an institution with the flexibility of an open system, offering education through the distance mode (after the success of the United Kingdom Open University (UKOU) and its wide acceptance). Though one is a mode of education and the other a system of education, they have been integrated in the term 'open university', and now open universities and distance teaching institutions are used almost synonymously. Though countries in the East had long traditions of advanced learning and developed strong centres like the Nalanda University in India, university education of the modern world is based on the system developed in the UK and Europe, and has a nearly eight centuries old history. The origin and development of correspondence education can be traced to the last few decades of the nineteenth century, and it may be safely said that the open university *per se* began with the establishment of the UKOU. In a quarter of the twentieth century, the system has grown enormously. There are regional and international organisations like the International Council for Distance Education (ICDE), the Asian Association of Open Universities (AAOU), the European Association of Distance Teaching Universities (EADTU), the European Distance Education Network (EDEN), the Open and Distance Learning Association of Australia (ODLAA), and the like that coordinate and promote open distance learning in higher education.

The magnitude of the expansion of this emerging system all over the world is reflected from the data recorded by the Commonwealth of Learning (Tables 1.2 and 1.3). By 1998, there were 103 countries offering distance education programmes through 1117 institutions.

Even during this brief period, the system has exhibited considerable diversity and dynamism. There are today four categories of distance education institutions:

Table 1.2 Regions/continents, countries and institutions offering DE programmes (Till January, 1998)

Continents/regions	Number of countries	Number of institutions
Africa	31	159
Asia	19	109
Australasia*	05	96
Middle East	03	03
Europe	25	412
North America	03	278
The Caribbean	05	07
Latin America	12	53
Total	103	1117

*Australasian countries: Australia, New Zealand, Papua New Guinea, Fiji, and eleven other member countries of the South Pacific.

Source: ICDL (1999) ICDL Database, UKOU

Table 1.3 Number of courses offered in various fields of study (Till January, 1997)

S. No.	Field of study	Number of courses
1.	Arts, Humanities and Social Sciences	8929
2.	Business, Management, Economics, Services	8438
3.	Education and Training	4450
4.	Pure Sciences and Mathematics	3431
5.	Technology, Computers, Environment and Applied Sciences	4432
6.	Health, Social Welfare, Medicine	3629
7.	Agriculture, Fisheries	1424
8.	Law, Law Enforcement, Regulations and Standards	1445
9.	Broad Multi-Subject Studies, Study Skills	1117
10.	Architecture, Surveying, Planning, Building	1168
11.	Personal, Home and Family Affairs	511

Source: ICDL (1999) ICDL Database, UKOU

- Single mode open universities.
- Conventional universities operating in dual mode with parallel establishment.
- Conventional universities incorporating distance education as an integral part.
- Consortium of open universities.

Virtual universities, which operate through Internet and other telecommunication technologies, replace or compensate both the campus-based and home-based learning environments. Access to necessary technology is a pre-condition to entering a virtual university, regardless of their real learning environment. The learning environment in a virtual university is the computer-simulation of the learning environment of a real university.

The FernUniversität of Germany uses multi-media, and other communications and information technologies including WWW, through its Virtual University Learning Environment (Lernraum Virtuelle Universität), for providing information, registration, payment of fees, distribution of learning materials, library services, lectures, seminars, submission

10 Education for knowledge era

and evaluation of assignments, taking exams, learner-learner interaction, both synchronous and asynchronous communication, and conferring of degrees (von Prummer, 1999).

There have been many virtual universities in the globe catering to education and training needs of millions of learners. In India, Tamil Virtual University is probably the latest to join this endeavour. As of now, it caters to the Indian diaspora, particularly from the State of Tamil Nadu, who may not be in intimate touch with the language and culture of their forefathers. Discussing the role of virtual institutions, Tiffin and Bridgeman (1999) point out: '... What they do not do ... is to address the need for a radical rethinking of the very nature of a university if it is to match the needs of the future ...' (p.1). They put forward the case for a Global Virtual University at New Zealand, supported by the ICDE, 'which seeks a new paradigm for a university for the information society.'

All the models noted above have their relevance and strength. We shall discuss these in detail in a later Chapter. However, the point to note is that eventually, every conventional university would introduce in one form or the other, distance education components.

Common components: Difference in emphasis

The open university has many elements of the conventional universities. Essentially, the conventional university system and the open university system are two sides of a coin. Education at the tertiary level consists of two components:

- (i) Classroom instruction (teacher-student interaction).
- (ii) Self-study (distance education).

Distance education in simple terms is a mode of education where a student is separated from the teacher in space and time. Viewed from this angle, 'self-study' is 'distance learning'.

We need to take a close look at the component 'classroom instruction'. It does not mean merely a series of lectures. If so, it can be replaced by well prepared video lectures by some of the gifted teachers. The soul of classroom instruction is interaction – mainly interaction between the student and the teacher and also among the students. For education to be efficient, both these components, namely 'interaction' and 'self-study' are important. The distance education system is based on self-study and endeavours to capture the interaction component of the face-to-face instruction through multi-channel instructional system comprising:

- specially prepared self-instructional materials;
- audio-video cassettes with emphasis on discourse method;
- telephonic contact with the instructor and tele-conferences;
- interactive radio counselling, radio broadcast and telecast;
- computer aided instruction;
- counselling sessions;
- student group discussions; and
- hands-on experience for courses with practical component.

When conventional universities try to meet the new demands of the community on education, they will have to increasingly introduce distance education components. On the other hand, for programmes in sciences, engineering, technology, medicine and similar disciplines, the open universities should opt for more of F2F instruction than they do in the case of programmes in humanities, social science and the like. In general, if tertiary education is a spectrum, at one end will be pure face-to-face instruction and at the other end, pure distance education. Both are theoretical possibilities and may not exist in practice. What we have ultimately would be:

- conventional system, with predominant face-to-face instruction and a minor component of distance education; and
- open university or open distance learning system depending predominantly on self-study with a F2F instruction component of varying magnitude depending on the subject.

Multinational universities

Because of its emphasis on self-study, distance education has liberated itself from:

- the constraints of space and time; and
- the traditional approach of confining education to the early years of one's life.

It has made learning at any age possible because of its *flexibility* and has demonstrated that in the modern world, it is easier to take knowledge to people rather than transport people to the places of knowledge. This transformation has led universities to operate on national, regional and even global basis.

Once a university transcends the boundaries of the classroom, it can transcend the boundaries of the state and the country. In a modest way, like the multinational corporations, *multinational universities* are on the horizon. A few open universities have enrolled students from other countries or have established centres in other countries or are marketing in other countries the instructional materials prepared by them. As of now, the Indira Gandhi National Open University (IGNOU) has its presence in 21 countries. Many Indian and foreign universities are using its course materials by adoption or adaption. This is also true of the OU, Deakin Monash, Athabasca and a few others. We see here a major change; a change that has great potential for transforming the world of education. Students from developing countries have been and are moving in large numbers to universities in advanced countries; now slowly universities are moving to the students in developing countries. Universities in advanced countries are moving to establish their campuses in developing countries:

- The Government of Mauritius is negotiating with the Government of India to explore the possibilities of making available some of its courses for their students and teachers.
- The open universities of Tanzania and Nigeria are using IGNOU materials on payment basis.

12 Education for knowledge era

- The UKOU has many students in Europe registering for its courses.
- In a small city state like Hong Kong, there are 19 overseas universities that have established study centres.
- Monash University from Australia is establishing its campus in Malaysia.

There are many other examples.

Education: A marketable commodity

Education is slowly acquiring certain characteristics of industry. Well prepared distance education materials now have markets outside the country of their origin. It is necessary to invest large sums of money to prepare the instruction material for distance education. To be cost-effective, there should be large number of students. Consequently small countries will do well to buy materials already available in subjects that are reasonably universal in nature. Similarly, many developing countries do not have enough experts to prepare instruction material for distance education. It is prudent to buy them rather than develop them indigenously.

The consequences of such a development are enormous. Education is gradually acquiring many of the inevitable characteristics of industry i.e., *quality, customer satisfaction, quick response to changing needs and, in short, competitiveness*. These qualities of distance education are obvious and undisputed.

The main issue where scepticism exists even today, largely due to ignorance of purists in academia is *quality*. While there were genuine criticisms that needed to be considered, there is still a cultural block and a mind-set against distance education. Russell Edgerton in his foreword to the book on *Mega Universities* (1996) by John Daniel refers to a conference of faculty members from campus-based universities, denouncing distance learning as a threat to quality. While this is the case even in an advanced country, one can imagine the situation in developing countries where acceptance of change is very slow. The need as well as relevance of distance education is significantly more for the developing countries than for the advanced ones. But paradoxically the unpreparedness and unwillingness for accepting this new tool is more in the developing countries. Against this background, Daniel reports that, UKOU in Britain and STOU in Thailand enjoy considerable public esteem. Among 70 universities in UK, evaluated for quality, 13 got the rank of 'Excellent' for 50 per cent of the subjects evaluated and UKOU is one among the 13. A similar survey in India placed IGNOU among the 10 excellent universities in 1999-2000. I can say from personal knowledge that Certificates, Diplomas and Degrees from IGNOU enjoy reasonable reputation among the members of the public. The same may not be true for all open universities in India. As regards Sri Lanka, it has been reported (Ranasinghe, 1992) that 'the OUSL degrees are of the same standard as those of the other eight universities . . . The professional bodies like Council of Legal Education have recognised the OUSL law degree'. The distance educators have a great responsibility to build the image of the distance learning system.

It is now well recognised that comparatively speaking, distance education is cost-effective. UKOU has demonstrated effectively that higher education of good quality could be made available at a lower cost. Ordinary degree programmes in UKOU cost between 39 percent

to 47 percent of the cost in conventional universities. Another example quoted by John Daniel (1996) is interesting: 3500 Colleges and Universities in the USA have an enrolment of 14.0 million students and the annual spending is \$ 175 billion (1995). It works out to \$ 12,500 per student as average annual cost. A list of 11 mega universities in the world, account for an enrolment of 2.8 million and the annual budget is around \$ 900 million, which works out to less than \$ 350 per student.

Towards a major revolution

We have inherited from the 20th century a world where we find that the divide between the rich and the poor countries is very wide and the gap, unfortunately, is increasing. It is now realized that progress and development depend, more than anything else, on the development and utilization of human resources. In this process, education has become the key determinant. *Basic education for all and the highest quality of education for a few* have become the prerequisites for improving the quality of life. Higher education and research have come into greater prominence. The demand for entry into university level institutions is continuously increasing. In India, the increase is mind-boggling and unsustainable in the long run; between 1994–95 and 1998–99, India established 2070 new colleges, i.e. the starting of 10 new colleges every week. Besides the young seeking entrance, there is the increasing demand for continuing education, a relatively recent phenomenon arising out of the rapid growth of new knowledge in S&T and the consequent onset of quick obsolescence. Governments have been finding it difficult to find resources to finance the expanding need; also conventional universities have not been designed to meet these new challenges. It is against this background that the 21st century has in its womb enormous challenges for the academics and we should start preparing ourselves for these.

In every field of activity, a society should undergo a mini revolution at reasonable intervals. The rule is absolute: any society that resists or avoids mini revolutions will inevitably face a major revolution. We academics have somehow resisted change and avoided mini revolutions. A major revolution is now on the horizon. We must prepare ourselves.

Distance education is a new tool: a modern tool. The power of a tool is not in the tool only. It is in the hands of the user. A tool is as powerful as the imagination and ingenuity of the craftsman. We have in our hands a very valuable and powerful tool. We must make the best use of it.

We must do today's job with today's tool: if we do today's job with yesterday's tool, tomorrow we will be out of business. This argument is re-inforced in the observation of Peter Drucker, the management Guru, about the future of higher education: 'Thirty years from now, the big university campus will be relics. Universities won't survive . . . Higher education is in deep crisis. The college won't survive as a residential institution. Today's buildings are hopelessly unsuited and totally unneeded' (quoted in Green, 1999: 15). The point to note is: *Open universities have a great promise to wake up to and a bright future to unfold!*

Prosperity through pooling knowledge resources

Introduction

The twentieth century witnessed many spectacular developments in social, political, economic and intellectual fields of human society. Colonialism virtually ended and human rights gained recognition as never before. Oceans and mountains, and distance between places, ceased to be barriers for contact and communication. More than all these, the overwhelming power that knowledge has acquired stands out as the event of the millennium; it heralded the knowledge era and everyone talks about being in a knowledge society. More than anyone, it is of importance to us academics; knowledge is but the contribution of education and research.

In any society, one person designs, but many build to translate the design. It is true of the edifice as well as of the educational system. A society is as tall as the designers it produces in different domains of its life. A crowd can carry out, but hardly ever create. Open-Distance Learning (ODL) system itself is the creation of a few visionaries, and the Indian sub-continent has also adopted this. Now there is a growing shift towards more flexible and life-long learning. This necessitates repositioning so as to acquire the skills of 'learning to learn'. The UNESCO Education Commission Report of 1996 very appropriately identified the four pillars of learning: *learning to know, learning to do, learning to live together and learning to be*. This calls for review of methods and techniques used in transaction of education. What could be the holistic vision for university education today? Otto Peters (2000), a leading scholar of our times, argues that all universities need to be open universities and practice lifelong learning. This chapter focuses on how the developments and issues pertaining to knowledge era are addressed by the ODL system in the twenty first century.

Disparities revisited

In the 20th century, population of the world increased fourfold and the economy increased seventeen-fold. If one takes the average, everyone must be economically better off four

times. But unfortunately, it did not happen that way—the distribution was lopsided. The increase in population went to what we call the developing countries; the increase in wealth went to the advanced countries (Brown and Flavin, 1999). Now, for the first time in the history of humanity, the world stands divided distinctly into rich and poor countries. This certainly is an extremely harmful development and its future implications are disturbing.

The gap between the advanced countries and the developing countries is not diminishing; over the years it has continued to increase. In 1960, the average income of the top 20 percent of the population living in the richest countries was 30 times that of the bottom 20 percent of the people living in the poorest countries. This became 60 in 1990 and 74 in 1997. The result is that the top 20 percent of the people living in the highest income countries have access to 86 percent of the world's GDP, while the bottom 20 percent have access to only 1 percent of the world's GDP (UNDP, 1999). *Forbes* magazine estimates that the 225 richest people in the world now have a combined wealth of more than one trillion USD, a figure that approaches the combined annual income of the poorest one-half of humanity (Brown and Flavin, 1999). India is one among the poor countries: about 35 percent of its people live below poverty line. In terms of quantitative comparison, the average annual grain harvest per person is 200 kg, providing the average Indian with little more than a starch dominated subsistence diet; it is 300 kg in China. About 64 percent of our children below five years are underweight, which means that they are undernourished (Brown, 1999). In other words, they all suffer from protein deficiency and consequently do not attain their full mental growth. The disturbing fact is: progressive intellectual emaciation of the nation.

It is now established beyond doubt that the basis of the prosperity of advanced countries is not the area of their land or natural resources or the language they speak or the religion they follow. It is the productivity of the people that counts and that in turn depends on their ability to gain knowledge, create new knowledge and transform knowledge into wealth. Though as a nation, we have been extolling the virtue of education, we failed to realise the importance of universal education, i.e. Education For All, even after independence. While we find that all our neighbours, i.e. Sri Lanka, Thailand, Malaysia, Singapore, Philippines, Indonesia and even a populous country like China, have more than 85 percent literacy, we stand at 65.38 percent as per the Census 2001.

A World Bank survey of 34 developed countries over a period of 110 years from 1850 to 1960 showed that in each of the countries, economic development made a beginning only after it attained universal education. So our entry into the knowledge society will depend on our education; our ability to apply knowledge to productivity and also apply knowledge to create new knowledge. Moreover, we can bring prosperity to our people only by pooling knowledge resources.

Indian educational scene

When it comes to education, we have mostly been accustomed to talking in terms of primary schools, secondary schools, colleges and universities which constitute the formal system. Over the years, the non-formal system, which in a way is about the earliest,

16 Education for knowledge era

essentially with emphasis on skills, has now gained in importance and recognition. It is mostly from this system that we get handworkers and even knowledge workers like the typists, shorthand writers, drivers, building-workers and in the recent years, different categories of workforce for computers at the sub-university level. The non-formal system is expanding in scope and increasing in strength. The third is the open-distance learning system, where emphasis is more on learning and teacher is a facilitator.

Each system caters to a well defined target group. In terms of numbers served, both the non-formal system and ODL system have grown considerably in recent years, and have established themselves as recognised modes of instruction in their own right. Not too long ago, both at the state government and central government levels, the formal system was considered and accorded priority when it came to budget provisions and policy statements. Though this still continues to dominate, there is a growing realisation of the immense potential of non-formal and ODL system to cater to the needs of our people; the tenth plan document has allocated enough funds (10 percent of the total higher education) for the development of these systems of education as well. However, so long as there is no serious discussion on education in the Assemblies or the Parliament and no brief account of the 'state of knowledge resources' in the country, one cannot assess the impact of such initiatives.

Formal system

The objective of this chapter is to consider the developments in and growth of the ODL system of education. However, for the sake of completeness, a few observations are made about the other two systems. Table 2.1 lists the number of educational institutions, students enrolled and teachers for the period 1950–1998 at the school level. At the time India got

Table 2.1 Number of schools, students and teachers in the period 1950–51 to 1997–98 (The no. of students is in million and other figures are in thousands)

Year	Primary			Upper primary			Secondary and senior secondary		
	Schools	Students	Teachers	Schools	Students	Teachers	Schools	Students	Teachers
1950–51	210	19.2	538	13.6	3.1	86	7.4	1.5	127
1955–56	278	24.6	691	21.7	4.8	151	10.8	2.6	190
1960–61	330	35.0	742	49.7	6.7	345	17.3	3.4	296
1965–66	391	50.5	944	75.8	10.5	528	27.6	5.7	479
1970–71	408	57.0	1060	90.6	13.3	638	37.0	7.6	629
1975–76	454	65.6	1248	106.6	16.0	778	43.1	8.9	759
1980–81	495	73.8	1363	118.6	20.7	851	51.6	11.0	926
1985–86	529	87.4	1496	134.8	27.1	968	65.8	16.5	1132
1990–91	561	97.4	1616	151.5	34.0	1073	79.8	19.1	1334
1995–96	590	109.8	1740	171.2	41.0	1165	98.1	24.9	1493
1997–98*	611	108.7	1872	185.5	39.5	1212	107.1	27.2	1521

Source: Ministry of Education — Elementary education
(<http://www.education.nic.in/htmlweb/edusta.htm>)

* Provisional

freedom, there was scarcity of educational institutions and whatever were available, were not used fully. In the year 1950–51, we had one teacher per 36 students in primary and middle schools and 12 in secondary and higher secondary schools. The teacher-pupil ratio (TPR) changed to 58, 33 and 18 in 1997–98. The point to note is that in spite of the increase in the number of institutions, higher TPR suggests that there is demand for opening more and more educational institutions at the school level. By a rough estimate, we have one school teacher per two hundred members of population.

The growth in the number of tertiary level institutions and students, based on GOI data, are detailed in Table 2.2. At the tertiary level, the number of institutions increased from 20 to 258 in the period 1947–2000. The corresponding increase registered in the number of students is from 228881 to 7100442. As of 2001, we had 9.31 million students, 350 thousand teachers, 11,831 colleges and 262 universities. We have one college student and teacher put together per 105 members of the public. This number was 135 in 1995. We have in the community of teachers and college students, a vast potential for bringing about general awareness and awakening among the masses, if only we develop an appropriate programme to utilise their services for dissemination of knowledge.

Table 2.2 Growth of higher education institutions and learners

	1947	1957	1967	1977	1987	1998	2000
Institution	20	41	85	123	175	—	258
Students ('000)	229	862	1369	2333	3728	7100	—

Non-formal education

Non-formal system is older than the formal education system. It provided the entire human resource—the mason, the carpenter, the blacksmith, the agriculturist, the doctor, the musician and every form of professional—in the agricultural civilization. Today, the typist, the shorthand writer, the driver, entire labour for the unorganised sector, computer operators in large numbers and in different categories, artists, media persons and numerous others come from this system. Given necessary recognition, encouragement and positive regulation, the non-formal system can substantially meet, at certain level, the human power requirement with reasonable level of skill. Its potential is yet to be fully realised and utilised. It is unfortunate that we do not have much authentic information in terms of numbers and spread and the contribution that this system still makes.

Open-distance learning system

We are aware of the fact that a beginning in Distance Education was made with the appointment of a committee under the chairmanship of Prof. D.S. Kothari in 1961 and the introduction of correspondence courses in the University of Delhi in 1962. One may see four stages of development for this system (UGC, 1990):

18 Education for knowledge era

- (i) The opening decade 1962–72: the decade of offering undergraduate non-science, non-professional courses.
- (ii) The expansion phase: 1972–82, characterised by rapid expansion of offering both undergraduate and post-graduate courses, but confined to those available in the conventional system.
- (iii) The open era: beginning 1982, marked the establishment of open universities in the states and at the centre.
- (iv) Diversification in programme offerings: new need-based, relevant and unconventional programmes leading to Certificate, Diploma and Degree; offering programmes in Science and Engineering, Health Science, Agriculture, Management, and the like.

In terms of instructional methods, distance education in advanced countries has seen four generations (Taylor, 1998):

- The correspondence model: print material by post.
- The multi-media model: Print, audiotape, videotape, computer-based learning, interactive video.
- The tele-learning model: Audio teleconferencing, video conferencing.
- The flexible learning model: Interactive multimedia, Internet based access, computer-mediated communication.

The correspondence education programmes of conventional universities mostly are still at first generation level. Even the print materials are not of acceptable standard. The state open universities can be said to function at second generation level. The Indira Gandhi National Open University (IGNOU), by and large, uses third generation tools but has made a modest beginning with Internet, thereby claiming to have graduated into the fourth generation. The point I wish to make is that on the whole, open universities are better placed in the use of technology, than the formal system. We shall discuss this aspect later.

Present status of strength

The ODL system has seen significant growth. We have today one national open university, nine state open universities, and sixty four universities offering distance education programmes through print material and contact classes. Table 2.3 shows the enrollments in ODL institutions

Table 2.3 Growth of enrollment in ODL institutions for the period 1975 to 2000 (in million)

Year	Enrollments in higher education			Share of open system (percent)
	Conventional system	ODL system	Total	
1975–76	2.43	0.06	2.49	2.6
1981–82	3.15	0.19	3.34	5.7
1990–91	4.99	0.56	5.55	10.1
1999–00	7.73	1.58	9.31	17.0

for the period 1975–2000. It is heartening to note that the share of distance mode has increased from 2.6 percent in 1975–76 to 17 percent in 2000.

Of the total enrolment in higher education in 1999–00, the share of open universities was over six hundred thousand and correspondence course institutes accounted for 964 thousand. The total enrollment increased to about two million in the year 2001 and every fifth student was enrolled with the ODL system.

It was contemplated in the programme of Action 1992 that at the end of VIII plan, the DE programme should account for 16.5 percent of total enrollment. The Ninth Plan witnessed 15 percent growth in student enrollments in the ODL system. (The corresponding growth in the formal system was about 5 percent. It is more appropriate to compare the annual intake in the two systems since the permissible maximum duration for completing each programme in the ODL system is much longer.) But the rate of acceptability of ODL system, particularly for continuous professional development, is now so high that in the years to come it is expected to grow faster. This realisation has led MHRD, GOI to support information and communication technology (ICT) based innovative initiatives through IGNOU to ensure wider reach and use of regional languages. The Tenth Plan document envisages 30–40 percent annual growth for the ODL system against the 5–10 percent growth of the formal system. It means that by the end of Tenth Plan period every third student will be educated through the ODL system. This demands diversification into front-ended technology, driven or enabled and competency based socially relevant programmes by pooling intellectual, infrastructural and financial resources.

Target groups

As mentioned earlier, the development of a society depends on its state of creation of knowledge and the use of knowledge by the people. The level and extent of use depends on the accessibility of knowledge, which in turn depends in a developing country like India on dissemination. The ODL system is well suited to carry knowledge to people. However, there are different target groups and different approaches will be needed to cater to their requirements.

General public

The target groups served by the formal system at the school and university levels are well known as far as their classical functions, namely preservation of knowledge, communication of knowledge and creation of new knowledge, are concerned. In 1990, the UGC in its document on *Policy Frame*, included 'extension' as one of the functions of institutions of higher learning. An institution must function as a resource centre and change agent, and serve the social and economic needs of the neighbouring areas. They may have to use the methodology and techniques of ODL system to fulfil some of its objectives. In India, this component is set to grow faster in future. It is therefore necessary for every institution of higher learning to develop programmes to carry knowledge outside the campuses and disseminate whatever is relevant to the community at large. It may be literacy, health care, environmental cleanliness, agricultural science, rural industries, home sciences, natural

20 Education for knowledge era

resources and the like. They must prepare learning material in print, audio-video cassettes, and lectures. India has enough knowledge in indigenous as well as modern science and technology in its experts, institutions and research laboratories. The major task that awaits us is to provide for mechanisms that facilitate interaction between them and narrow the gap between the land and the laboratory; between the classroom and the classes of people. The government departments and conventional universities cannot achieve this task, unless they adopt unconventional methods. The educational institutions can offer programmes through open-distance mode and prepare persons who already have a moderate education to become change agents in the villages and small towns. The government should promote these endeavours on a large scale and support preparation of print materials, audio-video cassettes for use in radio, television, transistor and VCR. It would only help accelerate the process if the government and the universities include 'extension' as an integral part of the function of every college, and the faculty and a necessary component of the curriculum and syllabi.

Unorganised sector

In India, during the Ninth Plan, the labour force in the organised sector was about 7.82 percent. The balance is in the unorganised sector (GOI, 1997). As mentioned earlier, the wealth generated by a nation depends on the productivity of the labour force. Considering the large size of the labour in the unorganised sector, the productivity of the labour force in the unorganised sector is a major concern. If only we can put this pool to efficient and effective use, our human resources will become an asset.

In India, the dropout rate in primary classes is 34.5 percent, and in the middle classes it is 51.6 percent (Fifth Education Survey). These dropouts and those who drop out by the 10th standard join the labour force without any skill. Naturally, their productivity will be very low. The facilities available for those with 10+ who want to get vocational education are poor. We need a very large number of ITI and polytechnic level institutions in medicine, agriculture, commerce, social sciences, computers, information technology and home sciences to upgrade their skills. And even if such institutions are set up in large numbers, they can only take care of fresh candidates who complete 8+ or 10+, and enter vocational education institutes. There will be the dropouts and those working without any training or skill. All these persons need attention. A carpenter may use better chisel and better saw and make three units of furniture in place of one; an agriculturist may use some knowledge of soil science and fertilizers and grow two grains/crops in place of one. The number of persons in this category in the unorganised sector is so large that even if the increase in individual productivity is small, the sum total will be large. The distance education, open school or open university as the case may be, can make a substantial contribution in improving the skills of the labour force in unorganised sector. The courses organised by IGNOU for the tannery workers at Chennai and Erode, Tamil Nadu are typical examples. This example has to be replicated in a number of industries.

Apprenticeship and open learning

In a country like Germany, candidates, after the period of general education, join academic

programmes or choose to go in for vocational education and training. The government has, in each industry, a certain number of apprenticeship positions which the industries are obliged to provide. The boys and girls join as apprentices and attend classes in the evenings for two or three days to receive theoretical instruction. A large number is handled this way. It may be in industry, agriculture, hospitals, shops, and in numerous occupations. In order to handle the boys and girls who drop out and enter the world of work without any skill, the government may negotiate and obtain positions for apprenticeship for a large number of candidates and arrange to organise necessary theoretical preparation using distance education including counselling and audio-video lectures and exercises. There are now about 25,000 industries that provide apprenticeship training for candidates who complete the diploma and degree programmes in engineering or +2 with certain vocational subjects. This may be substantially enlarged and modified. They may be provided necessary training packages comprising print material, audio-video lessons and demonstrations. The objective is to ensure that the massive work force in the organised sector is given at least minimum theoretical knowledge and skill for the work they are or may be engaged in. It would be advisable if best of educators and professionals are engaged in this task. This will provide opportunity for creative minds to grow.

Organised sector

Educational requirements in the organised sector, that may have to be met by the ODL system fall under two major categories:

- (i) induction training,
- (ii) continuing life-long learning.

For many services in government and private sector organisations, candidates from schools and colleges are directly recruited and appointed. They are almost, soon after appointment, entrusted with the work they have to do. They learn the work on the job with marginal help from seniors and colleagues. Well defined training at the time of induction for a specified period does not exist, except in a few private sector firms and public sector undertakings.

It is recognised all over the world that initial training and periodic retraining are pre-requisites for efficiency and improved productivity. But in India, there exists a pervasive impression that training is only for handworkers and not for knowledge workers. Education imparts knowledge, training gives skill. A.N. Whitehead, the philosopher-mathematician, once said, 'In the paths ordained by the God, he goes farthest whose talents are trained'.

Possession of knowledge is one thing; its use is another. We need skill to use knowledge, whatever be the area of activity; skill requires training. An area where open-distance education can play a major role, being recognised now, is *training*.

As regards the importance of continuing life-long learning, much has been said in distance education literature. The *World Education Report* of 1998 emphasized that 'the time to learning is now the whole life-time'. The phenomenal rate at which knowledge develops, the enveloping advance of obsolescence and the catalytic role of liberalisation have added new dimensions and sense of urgency to life-long learning. It has three basic objectives:

- updating knowledge;

22 Education for knowledge era

- broadening knowledge; and
- upgrading knowledge.

In all the three categories of preparation, continuing education can be used with great advantage. To achieve these objectives, our universities need to restructure, re-engineer and reform.

Equity and social justice

Equality of opportunities is accepted as an important social objective by all governments; it is often taken to mean availability of opportunities to all those who may fulfil certain specified requirements. But availability does not mean accessibility. There are many disadvantaged sections of the society to whom what is available is not accessible. Open-distance learning promotes equality by taking knowledge to the learner instead of insisting on the learner to come to the place of knowledge. This aspect deserves particular mention since equity and social justice will be major factors in funding policy in future.

Collaboration and partnership in delivery of education

The word of mouth has been the dominant mode of knowledge transfer in face-to-face (F2F) situation. It has been traditionally supplemented with the print, which, in turn, has witnessed considerable improvement and change in form as well as content. The delivery of education in the distance mode has been strongly influenced by the proliferation of information and communication technologies with the result that learning materials are being offered through a multi-channel, multimedia mix:

- print materials;
- audio-video programmes;
- personalised interaction—F2F, teleconferencing, interactive radio counselling, educational TV; and
- computers, CD-ROMs, Internet, World Wide Web, On-line initiatives.

Access to Internet and development of WWW in the last decade of 20th century opened fertile channels for professional collaboration by enabling people to work together, improve efficiency by delivering digitally and forge convergence by bridging the gap between distance and F2F modes. The increased use of ICT for dissemination of knowledge necessitates networking and poses real challenges with regard to accessibility and usability of technologies. However, to equitably share the rich global learning environment in a cost-effective manner, partnerships and alliances between institutions in a country/region have to be forged. Since distance education lends itself to networking naturally, the open universities can further interactive and collaborative partnership by

- designing and developing common study materials (print, A/V) and programmes;
- sharing infrastructure (study centres, regional centres, electronic media centre/studio facilities) and work out twinning arrangement;

Open universities

India is one of the earliest countries that applied its mind to the concept of 'open university' after the UK established one successfully at Milton Keynes. The Ministry of Education and Social Welfare, in collaboration with the UGC and the Indian National Commission for Co-operation with UNESCO, organised a seminar on open universities in December, 1970. The seminar was of the view that the time was ripe for establishing an open university in India and recommended that the Government of India set up a committee to study the cost and other aspects of establishing an open university. Later, the Ministry of Education, Government of India constituted an eight member working group (1974) under the chairmanship of G. Parthasarathi, the then Vice-Chancellor, Jawaharlal Nehru University.

The following statement of the Prime Minister in the Rajya Sabha on February 28, 1972 reflected the approach of the government towards the problems of growing numbers, social justice and maintenance of quality:

Now most educational experts in the world are for the curtailment of university education. But we know that in this country it poses a special problem for us. Those people who have not had the opportunity of university education for all these centuries, naturally feel that such a curtailment will affect them and that therefore education will continue to have a kind of class bias. Surely we do not want that. We have to find a balance in which there can be some changes without shutting off a single opportunity from a person or a family who, for the first time, is in a position to avail himself of this. So, any problem which another country or even eminent educationists think of, has to be looked at in the circumstances which obtain in our country. We have no guidelines in this. We have no examples which we can follow. We have to follow our own path step by step. It can only be done if we think more deeply about all these matters and again if we are willing to make experiments (GOI, 1974:4).

The working group examined the issue in the light of the developments in the world and the growing demands for higher education in India and stated:

In a situation of this type, where the expansion of enrollments in higher education is to continue at a terrific pace and where available resources in terms of men and money are limited, one obvious solution if proper standards are to be maintained and the demand for higher education for different sections of the people is to be met, is to adopt the open university system with its provision of higher education on a part-time or own time basis. The Group therefore recommends that the Government of India establish, as early as possible, an open university by an Act of Parliament. The university should have jurisdiction over the entire country so that when it is fully developed, any student, even in the remotest corner of the country can have access to its instruction of degrees (GOI, 1974: 4-5).

However, immediate action was not taken to implement the recommendations. Later in 1982, the committee to enquire into the working of central universities under the chairmanship

28 Education for knowledge era

of Dr. (Mrs.) Madhuri R. Shah recommended that practical steps should be taken for establishing a national open university without any delay. The National Open University, recommended by the committee, was established as the 'Indira Gandhi National Open University' (IGNOU) only in 1985. Moving the bill in Parliament for the establishment of IGNOU in 1985, Sh. K.C. Pant, then Minister of Education, observed:

We are awakening at the dawn of a new educational order. The old system of education has become rigid and centralised . . . We are therefore in search of a system that would be capable of resilience, responsive to the changing needs of tomorrow. There is today an increasing stress on **education for all** as also on life-long **education** . . .

. . . there is sharp focus on educating those sections of society which have remained for long neglected or ignored. It is being increasingly realized that in the long run, it would cost our society heavily if we do not attend to the needs of the **weaker** sections and of the **disadvantaged**". (editors' emphasis)

These excerpts aptly emphasize the need for taking education to the 'unreached' who have not been provided 'equality of educational opportunity' by the formal mainstream system.

The eighties saw the emergence of a few state open universities, besides the National Open University, that is, (i) Andhra Pradesh Open University (APOU) in Hyderabad, Andhra Pradesh, now known as Dr. B.R. Ambedkar Open University (BRAOU) in 1982; (ii) Kota Open University (KOU) in Kota, Rajasthan in 1987; (iii) Nalanda Open University (NOU) in Patna, Bihar in 1987; (iv) Yashwantrao Chavan Maharashtra Open University (YCMOU) in Nashik, Maharashtra in 1989 and a few more in the nineties: (v) Madhya Pradesh Bhoj (Open) University (MPBOU) in Bhopal, Madhya Pradesh in 1992; (vi) Dr. Baba Saheb Ambedkar Open University (BAOU) in Ahmedabad, Gujarat in 1994; (vii) Karnataka State Open University (KSOU) in Mysore, Karnataka in 1996; (viii) Netaji Subhash Open University (NSOU) in Kolkata, West Bengal in 1997; and (ix) U.P. Rajarshi Tandon Open University (UPRTOU) in Allahabad, Uttar Pradesh in 1998. It is now reliably learnt that Kerala, Orissa and Haryana are also about to start open universities.

Growth and distribution

We shall use the term 'Distance Education' to cover both correspondence and the open university programmes. Comparatively, there has been a steady and rapid growth in the enrollment in distance education courses in the seventies and eighties. Table 3.1 gives the growth of enrollment in the formal system and the distance education system. The enrollment in distance education has been steadily increasing and the rate of growth is much steeper than that of formal education. In the period 1982–83 to 1988–89, the rate of growth was 3.9 percent in the formal system and 16.2 percent in the distance education system. Of the 4,54,243 students in distance education in 1988–89, nearly 83 percent were in correspondence courses of the conventional universities and 17 percent were in open universities (AIU, 1991: 4). However, in the 1990s the enrollment in open universities has been growing more steeply than in correspondence courses. This trend is likely to continue in future. In 1999–2000, the DE enrollments stood at 17 percent of the total higher education enrollments.

Table 3.1 Distribution of enrollment in the formal system, DE system and the share of DE as percent of the total

Year	Formal system	Distance education system	DE system as % of total enrollment
1967-68	1,370,261	8,577	0.62
1970-71	1,953,700	40,753	2.05
1975-76	2,426,109	64,210	2.58
1980-81	2,752,437	166,428	5.70
1985-86	3,570,897*	355,090	9.04
1988-89	3,947,922*	454,243	10.3
1990-91	4.99 million	0.56 million	10.1
1999-2000	7.73 million	1.58 million	17.0

Source: University Grants Commission, India and DEC (2001)

* Estimated figures.

The distribution of students enrolled in distance education is markedly uneven in the country. The lopsidedness has grown over the years. The percentage of the total for the various regions is given in Table 3.2 for the years 1975-76, 1982-83, 1988-89, and 1999-2000. As may be noted, there is imbalance between different regions; while learning through open system is more popular in the southern states, the eastern region has been slow to accept it. However, overall enrollments in the central and western regions have shown a steady growth in the 1990s largely due to the establishment of YCMOU and MPBOU.

Table 3.2 Regional distribution of total enrollment in distance education

Region	Enrollment as percent of the total			
	1975-76	1982-83	1988-89	1999-2000
North	58.2	21.4	27.2	35.4
South	37.1	70.0	66.5	47.1
East	2.5	1.2	1.7	2.9
Central and West	2.2	7.4	4.6	14.6

Source: University Grants Commission, India: Theme Paper, Conference of Vice-Chancellors, Ahmedabad, 1990; Basic Statistics relating to DEIs in India, DEC-IGNOU, New Delhi, 2001

While the number of universities, including open universities, offering distance education programmes is 74, the enrollment is mainly in about fifteen universities. As of 1999-2000, the number of universities with enrollment strength less than 5000 was 40, between 5,000-25,000 was 16; between 25,000-50,000 was seven; between 50,000-100,000 was two; and over 100,000 was seven (Table 3.3).

Distribution of enrollment in higher education vis-à-vis distance education within a region is given in Table 3.4 for the year 1988-89. Since then, significant changes have occurred. Within each region, the enrollment varies among the states.

Table 3.5 indicates the tremendous growth of open universities in respect of enrollment, material production, involvement of experts from outside the OU system, media networking, and programme delivery networks. In 2001, all OUs, put together, enrolled more than 625

Table 3.3 Classification of institutions by size of enrollment; 1999–2000

Sl. No.	Category	Less than 5000	5001–25000	25001–50000	50001–100000	Over 100 thousand
1.	Open University (10)	1. NOU 2. UPRTOU 3. NSOU	1. KOU 2. BAOU	KSOU	MPBOU	1. IGNOU 2. BRAOU 3. YCMOU
2.	Correspondence Course Institutes (CCIs) of Conventional Universities (62 in 1999–2000)	All the remaining CCIs of Conventional Universities (37)	1. Bangalore Univ. 2. BhartiDashan Univ. 3. BITS 4. Univ. of Burdwan 5. Univ. of Calicut 6. Univ. of Jammu 7. Univ. of Kurukshetra 8. Maulana Azad Nat. Urdu University 9. Punjab Univ. 10. Patna Univ. 11. Pondicherry Univ. 12. Punjabi Univ. 13. SNDT Univ. 14. Vidya Sagar Univ.	1. Allahabad Univ. 2. Himachal Pradesh Univ. 3. Kakatiya Univ. 4. Maharshi Dayanand Univ. 5. Univ. of Mumbai 6. Osmania Univ.	1. Andhra Univ.	1. Annamalai Univ. 2. Delhi Univ. 3. Univ. of Madras 4. Madurai Kamaraj Univ.

Source: DEC (2001)

Table 3.4 Region-wise distribution of enrollment in higher education in India (1988–89)

	College/University departments	Distance education	Total	Share of DE in total (%)
<i>Southern Region</i>				
1. Andhra Pradesh	299,913	76,075	375,988	20.2
2. Karnataka	274,103	17,615	291,718	6.0
3. Kerala	153,753	10,194	163,947	6.2
4. Tamil Nadu	283,854	198,284	482,138	41.1
Sub-Total	1,011,623	302,168	1,313,791	23.0
<i>Northern Region</i>				
5. Delhi	110,921	55,839	166,760	33.5
6. Haryana	82,588	2,959	85,547	3.5
7. Himachal Pradesh	22,437	19,257	41,694	46.2
8. Jammu and Kashmir	31,256	1,939	33,195	5.8
9. Punjab	146,574	16,303	162,877	10.0
10. Rajasthan	192,990	22,546	215,536	10.5
11. Uttar Pradesh	548,791	4,769	553,560	0.9
Sub-Total	1,135,557	123,612	1,259,169	9.8
<i>Central and Western Region</i>				
12. Madhya Pradesh	287,240	287,240	287,543	0.1
13. Maharashtra	514,809	514,809	535,232	3.8
14. Gujarat	232,602	232,602	232,754	0.1
Sub-Total	1,034,651	1,034,651	1,055,529	2.0
<i>Eastern Region</i>				
15. Assam	87,235	—	87,235	—
16. Bihar	273,303	3,262	276,565	1.2
17. Manipur	11,941	—	11,941	—
18. Meghalaya/Nagaland	10,103	—	10,103	—
19. Orissa	78,771	4,323	83,094	5.2
20. West Bengal/ Tripura/Sikkim	304,738	—	304,738	—
Sub-Total	766,091	7,585	773,676	0.98
All India Total	3,947,922	454,243	4,402,165	10.3

Source: University Grants Commission, India, *Theme Paper*, Conference of Vice-Chancellors, Ahmedabad, 1990.

thousand students, which stands at 30 percent of all distance education enrollment. IGNOU, BRAOU, MPBOU and YCMOU have together crossed 0.5 million enrollment limit per annum; and IGNOU's annual enrollment alone is almost 50 percent of the total DE enrollment. A detailed description of enrollments in a few selected open universities and CCIs is given in Appendix 1.

Organisational structure

An open university differs from its conventional counterpart in several respects such as objectives, target groups, instruction methodology and delivery system. These would consequently require an organisation that would meet the demands which are unique to the

Table 3.5 Open universities in brief (2001)

	IGNOU	BRAOU	KOU	NOU	YCMOU	MPBOU	BAOU	KSOU	NSOU	UPRTOU
Programmes	67	23	22	8	60	30	11	29	3	41
Courses	680	307	195	9	236	49	96	244	18	126
Students ('000)	291	107	9	1.5	114	56	9	33	3	1.1
On Rolls ('000)	751	450	13	1.6	487	109	34	41	3	1.1
RCs	46	21	6	—	10	9	2	4	—	—
SCs	650	137	40	5	1451	667	61	52	36	38
ACs	21,000	4837	541	28	4521	3200	776	2812	733	214
Audio	1100	1759	7	—	298	5	10	285	4	—
Video	1102	298	1	—	189	18	—	132	—	2
Staff	1811	473	324	25	263	69	85	321	51	27

system. The various functions of an open university can be broadly perceived under three categories:

1. Academic
2. Industrial
3. Administrative.

A conventional university has two components, academic and administrative and we have long experience with this system. Even so, the management of a conventional university has many imponderables and the problems do not fall under set norms. In any system, the addition of even one interacting component increases the complexity manifold. The open university with an added component is in a sense a hybrid system combining in it the academic and the industrial, for which a parallel, either in government or in industry does not exist. The advanced countries do have more than two decades of experience in managing open universities but even there, a stable organisational structure has not yet got established. Strictly speaking, India did not have any model that could be followed, much less transplanted. Considerable ingenuity and imagination were needed to evolve an appropriate organisational structure and management philosophy.

Among the open universities in India, the Indira Gandhi National Open University has an organisational structure that has been evolved after wider consultation, serious thought and effort. It will, in the present context, serve as a model for open universities in India. A detailed account of the objectives, governance, instructional methods and the role of IGNOU in distance education in India is given by Ram Reddy (1988) who was also the leader of the team that prepared the project report for establishing the university.

The structure may have to evolve over a period of time depending on the growth and development of the distance education system itself. As for IGNOU, it consists of two major parts: (a) the authorities of the university, and (b) the organs of the university. They have components as given in the following.

Authorities of the university

1. Board of Management
2. Academic Council
3. Planning Board
4. Finance Committee.

Organs of the university

1. The academic components, that is, the schools and divisions that identify educational programmes, prepare instructional materials, printed volumes, assignments, guides, audio and video cassettes and evaluation tools, participate in radio counselling and chat sessions.
2. The support services, that is, the divisions that combine in them academic and industrial operations.
3. The administrative and finance offices that maintain the system in general.

34 Education for knowledge era

The organisational structure of IGNOU is given in Figure 3.1. As is customary with the central universities in India, the President of India is the Visitor. He is empowered to appoint Vice Chancellors and has the authority to ensure that the university is administered in accordance with the provisions of the Act and the statutes and ordinances made as provided for in the Act.

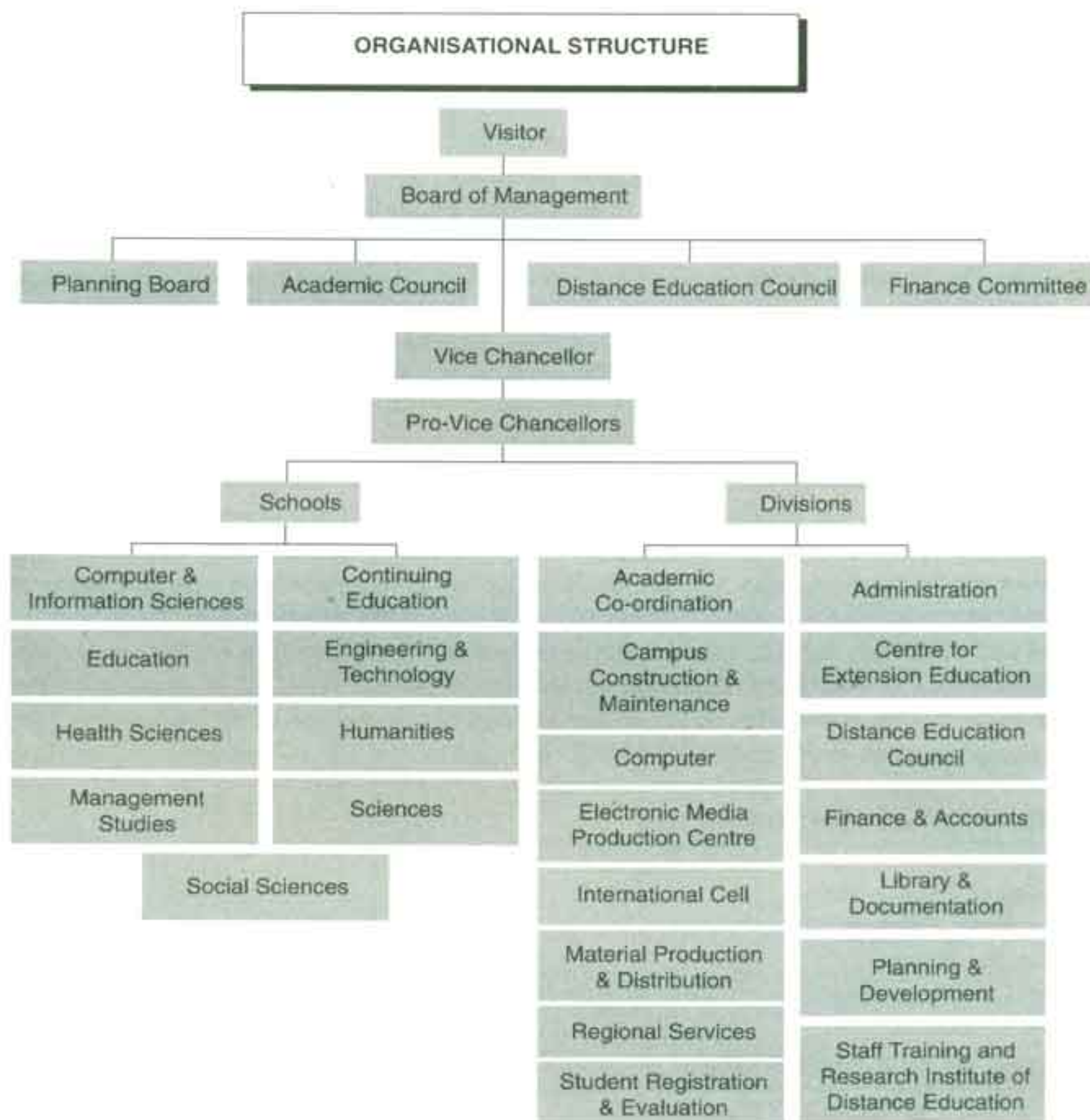


Figure 3.1 Organisational structure of IGNOU

The Board of Management is the principal executive body of the university. The Academic Council is, as in any other university, the principal academic body and is responsible for the identification and formulation of educational programmes and laying down standards. The Planning Board is responsible for the preparation of short and long term plans and for

the monitoring of the development of the university on the lines indicated in the objectives of the university.

The Finance Committee examines the accounts and scrutinises the expenditure. It fixes the limits for the total recurring and non-recurring expenditure for the year, based on income and resources of the university. All proposals relating to revision of grades, up-gradation of the scales and those items which are not included in the budget shall be examined by the Finance Committee.

The Vice Chancellor is the Chairman of all the four authorities and the membership in each authority is drawn from constituencies relevant to its responsibilities. The functions of the schools of studies, various divisions and offices shown in Figure 3.1 are fairly obvious as indicated by the titles and will not be elaborated here for the sake of brevity.

Methods of instruction

It is common knowledge that Distance Education is based on multimedia approach and utilises devices such as print material, television, radio, telephone, audio-video cassettes, computers and counselling sessions. In India, the conventional universities that offer programmes through Distance Education mode make use of mainly printed materials and counselling sessions. A few of them broadcast the lessons over the radio. The open universities, however, have made arrangements to use the multimedia approach more effectively and have added audio and video cassettes to the print material and counselling sessions. The method of instruction employed by the Indira Gandhi National Open University is given in Figure 3.2.

In the case of IGNOU, for subjects requiring laboratory instruction and practical work, appropriate arrangements are made through the study centres. The university has 46 regional centres (29 regional centres and 17 recognised regional centres for the services) and above 650 study centres (January, 2002) covering the length and breadth of the country. Each study centre has a Coordinator and depending on the strength of students, one or more Assistant Coordinators and supporting staff—all on part-time basis. It has a library and facilities for the counselling sessions and the use of audio and video cassettes.

Evaluation is a continuous process consisting of two components: continuous assessment through assignments for each course and a terminal examination for every course at the end of the academic session. Weightage assigned for the former is between 25 percent and 30 percent and for the latter between 70 percent and 75 percent of the total score.

A review of enrollment

We have mentioned earlier that Distance Education has a clientele of its own, meets such needs as may not be fulfilled by the conventional system and transcends economic, social and geographical barriers. It may be worth endeavouring to study the extent to which these objectives are being realized as seen from the admissions made to the courses.

A review of the admission patterns of the following categories of students may help us get a glimpse of the prevailing status:

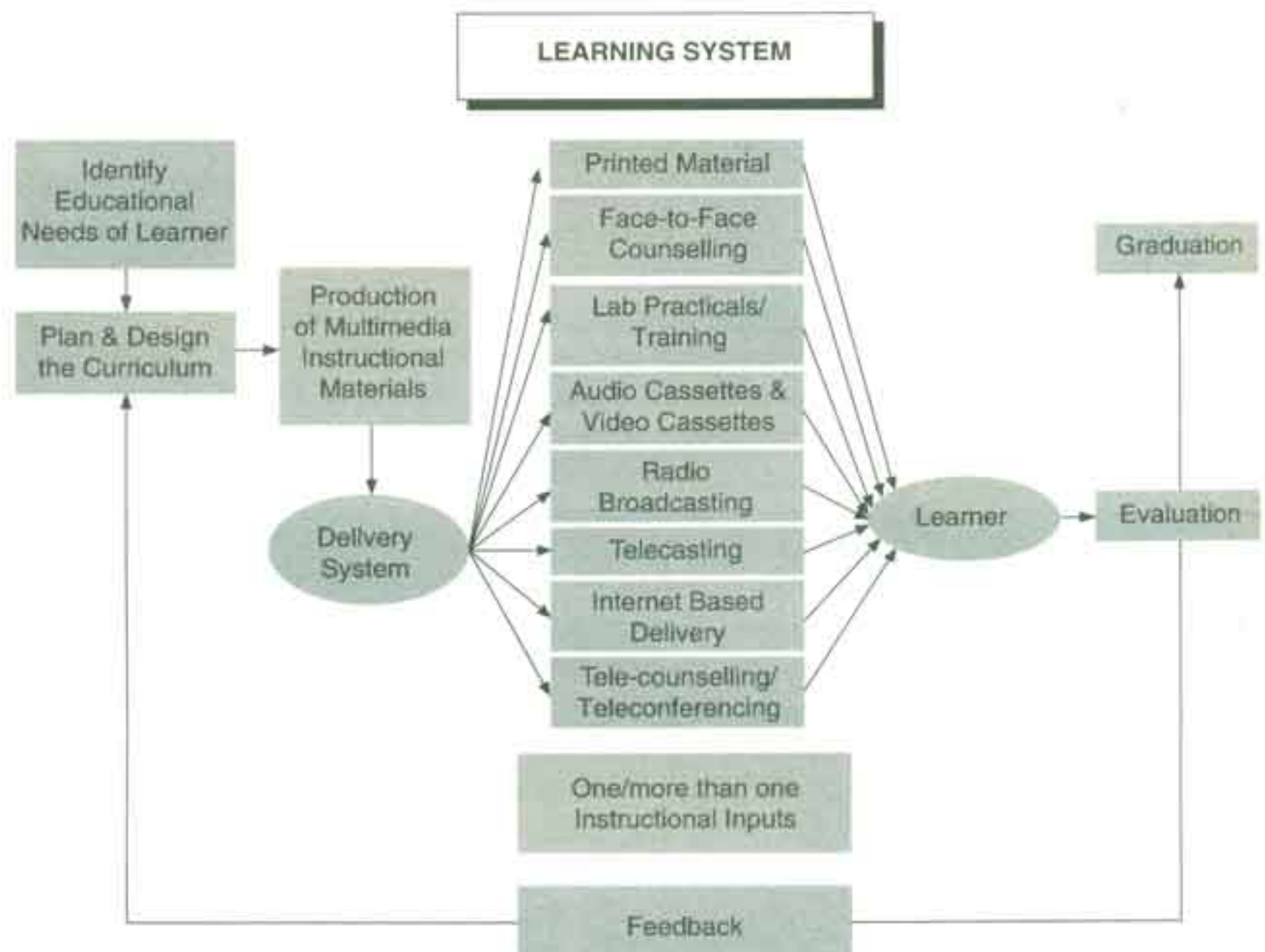


Figure 3.2 Instructional system at IGNOU

- Women
- Persons without formal qualifications
- Age groups of persons admitted
- Employed persons
- Disadvantaged groups

Unfortunately most of the conventional universities have not obtained and maintained information on the aspects mentioned above. Among the open universities, information from IGNOU and APOU only is given. Even in the case of the former, information available is restricted to certain courses only. Consequently, the discussion in this section is based on limited data covering a brief period of experience and is confined to only a few of the programmes offered by the two universities mentioned above.

Women

If we take the total admission in the formal university courses in India, the percentage of women is 31.7 (1988-89). The figure is 41.3 for distance education (1989-90) including

correspondence courses and open university programmes. In certain states the position is very encouraging. The proportion of women in distance education enrollment in central and western region was 57.1 percent; that for the eastern region was 27.3; for the southern region 40 percent and for the northern region 40.8 percent (Table 3.6). Gender-wise break-up reveals that distance education has benefited a very large section of the women and as such further expansion of the system may attract more women who have not been able to avail themselves of the opportunities of formal education. Information given in Table 3.6 is about the four regions. Table 3.7 gives information about a few universities for illustration.

Table 3.6 Gender-wise break-up of distance education students in India (1989-90)

Regions	Male	Female	Total	Percentage distribution	
				Male	Female
<i>Southern Region</i>					
1. Andhra Pradesh	44,754	21,028	65,782	68.0	32.0
2. Karnataka	15,682	6,850	22,532	69.6	30.4
3. Kerala	5,944	1,904	7,848	75.7	24.3
4. Tamil Nadu	105,897	85,130	191,027	55.4	44.6
Sub-Total	172,277	114,912	287,189	60.0	40.0
<i>Northern Region</i>					
5. Delhi	22,675	18,491	41,166	55.1	44.9
6. Haryana	7,427	11,533	18,960	39.2	60.8
7. Himachal Pradesh	11,661	4,599	16,260	71.7	28.3
8. Jammu and Kashmir	1,201	684	1,885	63.7	36.3
9. Punjab	8,789	5,317	14,106	62.3	37.3
10. Rajasthan	5,935	1,985	7,920	74.9	25.1
11. Uttar Pradesh	7,871	2,488	10,359	76.0	24.0
Sub-Total	65,559	45,097	110,656	59.2	40.8
<i>Central and Western Region</i>					
12. Madhya Pradesh	1,431	675	2,106	67.9	32.1
13. Maharashtra	14,917	21,172	36,089	41.3	58.7
14. Gujarat	112	17	129	86.8	13.2
Sub-Total	16,460	21,864	38,324	42.9	57.1
<i>Eastern Region</i>					
15. Bihar	4,596	1,036	5,632	81.6	18.4
16. Orissa	5,073	2,601	7,674	66.1	33.9
Sub-Total	9,669	3,637	13,306	72.7	27.3
Grand Total	263,965	185,510	449,475	58.7	41.3

Source: University Grants Commission, India, *Theme Paper*, Conference of Vice Chancellors, Ahmedabad, 1990.

Note: The break-up of 31,663 students admitted to Indira Gandhi National Open University and 6,211 students admitted to Kota Open University was not available. This explains variation of 37,874 students from the total of 487,349 for the year 1989-90.

38 Education for knowledge era

Table 3.7 Gender-wise break-up of students in correspondence courses (1990–91)

University	Men (Percent)	Women (Percent)	Total (Percent)
Punjabi University	3,334 (59.2)	2,295 (40.8)	5,629 (100)
Madurai Kamaraj University	24,577 (58.4)	17,470 (41.6)	42,047 (100)
Delhi University	27,176 (54.7)	22,535 (45.3)	49,711 (100)
Annamalai University	34,470 (65.2)	18,407 (34.8)	52,877 (100)
Kerala University	2,842 (64.5)	1,562 (35)	4,404 (100)

Source: Information obtained through a questionnaire; figures in parentheses indicate percentage.

Persons without formal qualifications

In general, correspondence courses follow the rules of the conventional system and the minimum qualifications prescribed do not vary. A few conventional universities do admit candidates for the first degree programme without insisting on minimum formal qualifications. They organise preparatory courses for these students to make up for possible deficiencies. But the number of such universities is very small. Over the years, as the correspondence courses gradually adopt the Open University mode, admission requirements may become liberal in these universities too. We may have to consider, for the present, only the open universities.

In the APOU, the enrollment to the undergraduate courses increased from 6,231 in 1983–84 to 16,402 in 1989–90. The strength of formal and non-formal students is given for three years in Table 3.8 for APOU and Table 3.9 for IGNOU. We define formal students as those who possess the minimum academic qualifications for admission as laid down in the formal system. Non-formal students are those who are admitted on the basis of an entrance examination and do not possess the minimum academic qualifications prescribed by the conventional universities.

Table 3.8 Andhra Pradesh Open University: formal and non-formal stream in undergraduate programmes

Academic Year	Formal	Non-formal	Total
1987–88	3,867 (24%)	12,436 (76%)	16,303
1988–88	4,087 (24%)	12,740 (76%)	16,827
1989–90	5,655 (34%)	10,747 (66%)	16,402

Source: P. Ramaiah et al., *A Study of Students' Profile in Andhra Pradesh Open University*, Hyderabad, 1990.

It can be seen that in APOU over 75 percent of the students and in IGNOU about 60 percent come from the non-formal stream. But for the distance education system, higher education would have remained inaccessible to these candidates.

Age group

Age group is another criterion to give an idea of the comparatively increased accessibility

Table 3.9 IGNOU: formal and non-formal stream in undergraduate programmes (B.A. B.Com.)

Year	Formal	Non-formal	Total
1988-89	5,872 (46%)	6,813 (54%)	12,685
1989-90	4,482 (29%)	10,808 (71%)	15,290
1990-91	5,954 (43%)	7,798 (57%)	13,752

Source: Admission Division, IGNOU.

of this system. As an illustration, Table 3.10 gives the age-wise distribution of the students admitted in 1990-91 to various programmes offered in IGNOU. It may be noticed that there is a sizeable percentage of enrollment for various programmes for the age group 46 and above.

Table 3.10 IGNOU admissions in 1990-91: age-wise distribution in percent for various programmes

Programme	Below 21	21-25	26-30	31-35	36-40	41-45	Above 46
Diploma in Management	—	9.61	44.62	23.96	12.88	6.08	2.85
Specialised Diplomas in Management	—	22.40	33.33	20.34	12.72	6.50	4.71
Diploma in Distance Education	5.33	14.06	25.94	20.85	14.79	8.61	10.42
Bachelor of Library and Information Sc.	—	15.80	38.99	22.83	13.33	5.38	3.67
Bachelor's Degree Prog. (Non-formal)	18.58	45.32	17.98	9.52	5.18	2.11	1.31
Bachelor's Degree Prog. (Formal)	19.66	44.27	17.40	9.39	5.12	1.98	2.18
Certificate in Food and Nutrition	14.31	39.19	21.46	11.40	7.37	3.39	2.88

Source: Vice Chancellor's Report, Second Convocation of IGNOU.

Employed persons

In Tables 3.11 and 3.12 are given the particulars of employment pertaining to the undergraduate students for whom information is available in APOU. In the case of IGNOU, except for B.A, B.Com and B.Sc, programmes are mostly meant for in-service persons and employment in the relevant field is a prerequisite for admission. Hence the need for an analysis of this nature does not arise.

The large proportion of unemployed students indicates that the Open University system supplements the formal system in meeting the demand for conventional programmes in higher education.

Table 3.12 shows that there is poor response from the employed section of women. The enrollment of housewives has been increasing. Though there is increase in enrollment, there is a fall in the percentage of public employees. However, this is true for one programme in one open university and may not represent the real position in the country.

40 Education for knowledge era

Table 3.11 Andhra Pradesh Open University: Distribution of male undergraduate students by occupation

Academic year	Manual and skilled workers	Agriculturists	Business men	Public employees	Teachers	Unemployed	Others
1986–87	461 (3%)	210 (1%)	299 (2%)	1,690 (13%)	294 (2%)	8,379 (61%)	2,429 (18%)
1987–88	603 (5%)	167 (2%)	278 (3%)	1,321 (11%)	302 (3%)	6,577 (58%)	2,035 (18%)
1988–89	289 (3%)	218 (2%)	212 (2%)	1,313 (11%)	225 (2%)	6,898 (60%)	2,366 (20%)
1989–90	242 (2.2%)	148 (1.3%)	178 (1.5%)	458 (4%)	272 (3%)	7,377 (65%)	2,691 (23%)

Source: P. Ramaiah et al., *A Study of Students' Profile in Andhra Pradesh Open University* (Hyderabad, 1990).

Table 3.12 Andhra Pradesh Open University: Distribution of female undergraduate students by occupation

Academic year	Unemployed housewives	Manual workers	Public employees	Teachers	Others
1986–87	4,807 (87.2%)	12 (0.2%)	245 (4.4%)	277 (5.1%)	173 (3.1%)
1987–88	4,308 (85.8%)	15 (0.2%)	178 (3.5%)	237 (4.7%)	282 (5.8%)
1988–89	4,610 (86.9%)	25 (0.4%)	215 (4.1%)	259 (4.9%)	197 (3.7%)
1989–90	4,406 (87.5%)	13 (0.3%)	100 (2%)	188 (3.7%)	329 (6.5%)

Source: P. Ramaiah et al., *A Study of Students' Profile in Andhra Pradesh Open University* (Hyderabad, 1990).

Disadvantaged groups

In India, economic deprivation, geographic isolation and social constraints impose disabilities that individuals, on the average, cannot overcome. Disadvantaged groups are many. Here, we consider those who come from rural and remote areas and those who belong to Scheduled Castes and Scheduled Tribes.

Unfortunately information concerning candidates from rural areas is not available for APOU. Information for the 40,824 candidates admitted in five programmes in IGNOU in 1990–91 is given both for rural, urban categories and SC, ST categories (Table 3.13). Also, information given in Table 3.14 for four CCIs shows dismal picture, except the SNDT which enrolled 23 percent SC students in the same year. The latest data received for three OUs and 11 CCIs in Table 3.15 gives a mixed picture where a few OUs and CCIs have improved enrollment of women, rural and SC/ST students (treated separately). The national open university needs to seriously undertake strategic interventions to uphold the mission of reaching the unreached.

If we consider the fact that the population of the SC and ST communities is 15 percent and 7.5 percent respectively their share in admission is poor. It may also be stated that the ST population is heavily concentrated in certain states and regions and their participation

Table 3.13 IGNOU: Urban, rural and SC/ST students in 1990–91 admissions, in percent of the total for some of the courses

Programme	Urban	Rural	SC	ST	Others	Total Admitted
Diploma in Management	87.4	12.6	4.8	0.8	94.4	7,617
Specialised Diploma in Management	84.3	15.7	3.6	0.5	95.9	3,741
Bachelor of Library and Information Science	67.9	32.1	2.6	0.7	96.7	1,872
B.A, B.Com (Preparatory)	70.8	29.2	10.4	4.6	85.0	11,217
B.A, B.Com (Formal and Non-formal)	75.7	24.3	7.6	3.7	88.7	13,752
Certificate Courses in Food and Nutrition	74.8	25.2	3.4	1.3	95.3	2,919

Source: Vice Chancellor's Report, Second Convocation of IGNOU.

Note: The distribution of SC, ST students in the correspondence courses of some of the universities is given in Table 3.12.

Table 3.14 Distribution of SC and ST students in correspondence courses (1990–91)

University	SC Students	ST Students	Others	Total
Punjabi University	539 (9.6)	58 (1.0)	5,032 (89.4)	5,629
Madurai-Kamaraj University	2,650 (6.3)	176 (0.4)	39,221 (93.3)	42,047
Delhi University	2,422 (4.9)	218 (0.4)	47,071 (94.7)	49,711
SNDT Women's University	1,251 (23.0)	196 (3.6)	3,982 (73.4)	5,429

Source: Information obtained through a questionnaire; figures in parentheses are in percentages.

will depend on the facilities and more importantly, the awareness created in these areas. Distance education is only an enabling provision.

Nature of courses

It may be stated that in general, the Schools or Directorates of Correspondence Education in the conventional universities have been offering the same courses as are available with them in the formal system. During the sixties, correspondence courses were restricted to arts, commerce and social sciences at the undergraduate level. In the seventies postgraduate courses were introduced and new disciplines like mathematics, law and education were added. A few universities made a beginning in job oriented Certificate and Diploma courses. In the eighties, Bachelor's degree programmes in basic sciences, library science, banking and commerce were introduced. Diploma Programmes specially designed for the distance education system were introduced in some universities. Courses in professional areas as in

42 Education for knowledge era

Table 3.15 Participation of deprived groups-women, rural and SC/ST students: 2000

Sl. No.	Name of Open Universities	Women	Rural	SC/ST
1.	IGNOU	27	21	7
2.	YCMOU	28	31	20
3.	BRAOU	27	45	27
	Name of Institution (CCIs) (Enrollment over 10000)			
1.	Kurukshetra Univ.	26.44	—	—
2.	Univ. of Madras	42.98	39.88	—
3.	Univ. of Calicut	43.94	—	—
4.	Pondicherry Univ.	26.44	34.91	—
5.	Allahabad Univ.	17.84	—	—
6.	Univ. of Mumbai	49.90	—	—
7.	H.P. Univ. Shimla	38.67	35.60	—
8.	M.D. Univ., Rohtak	40.48	—	—
9.	Univ. of Burdwan, Burdwan	47.95	60.28	—
10.	Punjab Univ., Chandigarh	31.74	25.57	—
11.	Univ. of Delhi, Delhi	46.04	—	5.63

Source: DEC (2001)

education, library science, law, accountancy and management were started. Mention may be made of the introduction of M.Phil, Ph.D, and M.Sc programmes. It may, however, be mentioned here that with a few exceptions, even today the programmes offered under the correspondence courses are the same as those already available in the respective universities in the formal system. The entry qualifications and other requirements also remain the same; the only difference being their availability under the correspondence mode.

The Open Universities, especially IGNOU and YCMOU and to a small extent APOU, charted a new path in designing courses with emphasis on new target groups and relevance. These universities concentrate as a matter of policy on programmes for in-service candidates to help them update and broaden their knowledge and upgrade their qualifications. The courses being offered and planned by IGNOU fall under four major areas:

1. Humanities and Social Sciences.
2. Science, including Applied Sciences.
3. Professional disciplines such as Management, Education, Engineering and Health.
4. Continuing Education courses in different disciplines.

It may however be mentioned that continuing education aspect forms part of the courses offered in every discipline. Courses are designed to help the candidates for either updating and broadening their knowledge or for upgrading their educational qualifications.

The progressive development in the typology of courses offered under Distance Education System, during a forty year period is given in Table 3.16.

Table 3.17 gives the registration of candidates in 1989–90 under different disciplines. It will give an idea of the categories of courses offered under Distance Education system and the enrollment in them.

Table 3.16 Progressive development of distance education programmes from 1962–63 to 2000–01

Period	Conventional Courses UG and PG	Employment oriented courses	
		Certificate, UG Diploma and Degree	PG Certificate, Diploma and Degree
1962–63 to 1969–70	Pre-University Course, B.A, B.Com	—	—
1970–71 to 1974–75	M.A, M.Ed.	B.G.L.	Certificate in Teaching of English
1975–76 to 1979–80	B.Sc (Maths), M.Com	Diplomas in certain areas of Management, LL.B.	—
1980–81 to 1989–90	B.Sc (in subjects with practicals), M.Sc (Maths, Physics, Chemistry and Life Sciences)	Certificate in areas such as Library & Information Science, Journalism, Mass Communication and Rural Development. Diplomas in areas such as Cooperation, Management, Statistics, Population Education, Creative Writing, Criminology and Divinity. Bachelor's Degrees such as B.Ed, B.Tech, B.Lib. Sc, Bachelor of Banking and Commerce.	PG Diplomas in areas such as Management, Public Relations, Distance Education and Accounting. M.B.A, M.Phil, Ph.D in certain disciplines.
1990–91 to 2000–2001		Women Empowerment Disaster Management Bachelor of Information Technology, Rehabilitation	ADIT, PG Diploma in Transla- tion, MBA (Banking and Finance), PG Diploma in Interna- tional Business Operation, B.Ed

Source: UGC Reports from 1962–63 to 1988–89.

Note: The Table is meant to be illustrative of the trend of development and not exhaustive.

Table 3.17 Distribution of distance education students in terms of categories of courses (1989–90)

Course Categories	Enrollment	Percentage
Undergraduate Courses (B.A, B.Com, B.Sc)	260,739	53.50
Postgraduate Courses (M.A, M.Com, M.Sc, M.Phil)	115,836	23.77
Professional Degree Courses (B.Ed, LL.B, B.G.L., B.Litt, B.Lib. Sc, M.Ed, M.B.A)	72,592	14.90
Professional Diploma Courses (in areas such as: Banking, Cooperation and Rural Studies, Several Specialised Fields in Management, Commerce, Education and Communication; Technology and Law)	32,559	6.68
Professional Certificate Courses (in areas such as: Library and Information Science, Law, Education, Agriculture, Technology and Computer Application)	5,623	1.15
Total	487,349	100.00

Source: University Grants Commission, India: *Theme Paper*, Conference of Vice-Chancellors, Ahmedabad, 1990.

Note: In the UGC report, M.Phil. is counted against Professional Degree courses.

Research in open universities

As the Open University System expands, it will have a large number of students and faculty members of commensurate strength. As this new development gets established, certain issues will need policy level decisions, and one such will concern research. Preservation, creation and communication of knowledge, as well as extension are the four functions of a modern university. Research is necessary for the academics to keep themselves up-to-date in their fields of knowledge. Open universities do not practice teaching on the campus as there are normally no students on the campus. The nature of the work for the purpose of launching and maintaining courses may not necessarily include research. If the academics spend their time only in writing and editing courses, it may not be long before they get into an uncreative routine and slowly lose interest, enthusiasm and freshness. If research is to be incorporated, the major question that will arise is whether it will be research for advancement of knowledge in the major disciplines or whether it will have any orientation to the Distance Education system. One can imagine a vast scope for research on topics that may have a bearing on innovations in dissemination of knowledge itself, at different levels, in different environments and in different subjects. Research in an open university must have certain dimensions that improve the effectiveness and efficiency of the system itself. The implication is that investigations in communication of knowledge assume as much importance as creation of new knowledge. In a higher education system, it is essentially the students who do research and the academics provide guidance. In the absence of students on the campus, new strategies have to be developed to promote and sustain this activity. Introduction of M.Phil and Ph.D programmes and recognition of institutions in different parts of the country where candidates can do research under the guidance of academics of the open university with co-guides in the respective institutions may be one approach. Such research initiatives are already in place at BRAOU, YCMOU, KOU, MPBOU, and IGNOU. (The Research Council oversees all research activities and devises policies and strategies from time to time.) Open universities can also have on the campus, research scholars and research projects that focus on innovations in communication of knowledge. However, open universities must address the issue of world-class research, and develop a methodology that will ensure the involvement of the faculty in the creation and communication of knowledge. The question that would often be asked by both the in-house faculty and the conventional counterparts is to what extent research is integrated into the mainstream activities as an instrument of continuing professional development and for the development of the distance education system itself.

Appendix 1 Pattern of enrollment in ODL system

A. Open Universities

(i) IGNOU : 2000

S.No.	Programme	Total	Female	SC/ST	Rural
1	BCA	19036 (100)	3248 (17.06)	878 (4.61)	3799 (19.96)
2	BDP	19240 (100)	5006 (26.02)	2116 (11.00)	5631 (29.27)
3	BED	2277 (100)	1345 (59.07)	295 (12.96)	468 (20.55)
4	BLIS	2253 (100)	1323 (58.72)	198 (8.79)	746 (33.11)
5	BPP	15489 (100)	4350 (28.08)	2719 (17.55)	4251 (27.45)
6	BSCN	505 (100)	450 (89.11)	50 (9.90)	103 (20.40)
7	BTCM	564 (100)	14 (2.48)	59 (10.46)	162 (28.72)
8	BTS	1917 (100)	398 (20.76)	144 (7.51)	431 (22.48)
9	CES	574 (100)	222 (38.68)	32 (5.57)	137 (23.87)
10	CFN	569 (100)	379 (66.61)	38 (6.68)	123 (21.62)
11	CIC	46068 (100)	12658 (27.48)	1803 (3.91)	8857 (19.23)
12	CIG	872 (100)	584 (66.97)	47 (5.39)	179 (20.53)
13	CTE	1131 (100)	774 (68.44)	42 (3.71)	225 (19.89)
14	DCE	591 (100)	314 (53.13)	27 (4.57)	80 (13.54)
15	DECE	763 (100)	682 (89.38)	47 (6.16)	219 (28.70)
16	DNHE	1080 (100)	647 (59.91)	66 (6.11)	284 (26.30)
17	DRD	2197 (100)	657 (29.90)	203 (9.24)	988 (44.97)
18	DTS	1013 (100)	317 (31.29)	85 (8.39)	262 (25.86)
19	MCA	17593 (100)	4993 (28.38)	359 (2.04)	2711 (15.41)
20	MLIS	606 (100)	343 (56.60)	58 (9.24)	156 (25.74)
21	MP	23122 (100)	—	1307 (5.65)	2993 (12.94)
22	MPBF	1930 (100)	—	52 (2.69)	255 (13.21)

(Contd)

46 Education for knowledge era

Appendix 1 (Contd)

S.No.	Programme	Total	Female	SC/ST	Rural
23	MTM	857 (100)	—	26 (3.03)	90 (10.50)
24	PGDDE	532 (100)	—	100 (18.80)	137 (25.75)
25	PGDMCH	672 (100)	—	92 (13.69)	150 (22.32)
26	PGJMC	1045 (100)	—	52 (4.98)	236 (22.58)

Source: DEC (2001)

Note: 1. Programme/Courses having less than 500 enrollment are excluded.

2. Figure in parenthesis indicate percentage of the total in the respective group.

(ii) YCMOU : 2000-01

	Total	Female	Rural	SC/ST
<i>U.G. Courses</i>				
BA/B.Com	32025 (100)	10192 (31.83)	1070 (3.35)	7157 (22.35)
BLISc	1046 (100)	516 (49.33)	494 (47.42)	129 (12.34)
BE.d	1969 (100)	617 (31.34)	304 (15.44)	412 (20.93)
P.G.Courses	832 (100)	85 (10.22)	6 (0.73)	79 (9.50)
<i>Diploma Courses</i>				
Fruit Production	1260 (100)	95 (7.54)	1115 (88.50)	164 (13.02)
Veg. Production	930 (100)	79 (8.50)	797 (85.70)	118 (12.69)
Floriculture & Land scape Gardening	711 (100)	29 (4.08)	566 (79.61)	107 (15.05)
<i>Certificate courses</i>				
Computer Basics Courses	7452 (100)	2373 (31.85)	3268 (43.86)	981 (13.17)
Computer Word Processing	576 (100)	257 (44.62)	358 (43.86)	65 (11.29)
Finance & Account	889 (100)	353 (39.71)	528 (59.20)	112 (12.62)
Office Computing	1802 (100)	736 (40.85)	948 (52.61)	281 (15.60)
Vocational subject	1354 (100)	130 (9.61)	579 (42.77)	352 (26.00)
Journalism	628 (100)	73 (11.63)	268 (42.68)	126 (20.07)
EEDP,CPST	3233 (100)	339 (10.49)	713 (22.06)	465 (14.39)

(Contd)

	Total	Female	Rural	SC/ST
Others				
Preparatory	15758 (100)	5061 (32.12)	8707 (55.26)	3901 (24.76)
Foundation course in Agriculture	3616 (100)	160 (4.43)	2778 (76.83)	173 (4.79)
Total (All Programmes and Courses)	74579 (100)	21200 (28.43)	22884 (30.69)	14786 (19.83)

Note: 1. The programmes/Courses having less than 500 student enrollment are not listed above.

2. Figure in parenthesis indicate percentage of the total enrollment within the respective course.

Source: DEC (2001)

(iii) BRAOU : 2000–01

Sl. No.	Name of the programme	Enrollment	Male	Female	SC	ST	Rural	Urban
1.	U.G. programmes	53474	34452	14022	12295	395	25485	27989
2.	P.G. programmes	4272	2930	1342	1861	345	1282	2990
3.	Master of business admn.(MBA)	3121	2140	981	1340	240	937	2184
4.	Master of library science	180	102	78	42	15	30	150
5.	Diploma	578	452	126	125	37	58	520
	Total:	61625	40076	16549	15663	1032	27792	33833

Note: In the total enrollment share of: Rural : 45 percent, Female : 27 percent, SC/ST : 27 percent, and

Source: DEC (2001)

U.G. Programme : 87 percent.

(iv) Programme-wise enrollment in KSOU : 1998–2000

		1998–1999	1999–2000	Change percent
1.	U.G. programmes			
	BA	8068	3554	–55.95
	B.Com	2267	888	–60.83
2.	P.G. programmes			
	M.A	12,769	12972	0.63
	M.Com	3330	3781	13.54
	M.B.A	877	1132	29.08
	M.Ed.	777	1167	50.19
3.	Diplomas	1034	895	–13.44
4.	Certificate courses	107	63	–41.12

B. Pattern of enrollment in select CCIs (1999–2000)

(i) School of correspondence courses & continuing education, University of Delhi

Subject	Total enrollment	Women	Women (percent)	SC/ST	SC/ST (percent)
M.A. (Hindi)	2059	1574	76.44	543	26.37
M.A. (Political Sc.)	1632	909	55.69	912	55.88

(Contd)

48 Education for knowledge era

Subject	Total enrolment	Women	Women (percent)	SC/ST	SC/ST (percent)
M.A (History)	147	85	57.82	23	15.64
M.A (Sanskrit)	274	229	83.57	17	6.20
M.Com	1456	921	63.25	212	14.56
B.A	61492	33624	54.68	4234	6.88
B.Com	53263	18572	34.86	896	1.69
Average(above)	15040.38	53.29	15.90	—	—
Total	120323	55914	46.46	6837	5.68

(ii) Directorate of distance education, Maharishi Dayanand University

Subject	Total	Women	Women (percent)
B.A	17709	6873	38.81
B.Com	696	165	23.70
M.A	9131	3780	41.40
M.Com	1429	620	43.39
B.Ed	250	103	41.20
Prabhakar	944	606	64.19
B.Lib	302	210	69.53
LLM	155	27	17.41
PGDLL (Labour Law)	27	0	0
Masters in LL	36	4	11.11
M.A, M.Sc	476	224	47.06
Total	31155	12612	40.48

(iii) ICDEOL, HP University

Sl. No.	Name of programme	Total	Women	Women (percent)	Urban	Rural	Rural (percent)
1.	B.A	4728	1413	29.88	3525	1202	25.42
2.	B.Com	1456	408	28.02	820	634	43.54
3.	B.Ed	503	218	43.34	308	192	38.17
4.	M.A(Eng.,Hindi,Skt. Hist.,Pol.Sc., Pub. Ad,Eco, Maths.	18869	7921	41.98	11632	7233	38.33
5	M.Com	9315	3573	38.36	6115	3185	34.19
6.	M.Ed	256	121	47.26	148	102	39.84
7.	PGDPM&LW	473	138	29.17	348	118	24.95
8.	PGDCA	57	6	10.53	41	8	14.03
9.	Total	35657	13798	38.70		12674	35.54

C. Growth of programme-wise academic counsellors in IGNOU

Sl.No.	Programme	92-93	93-94	94-95	95-96	96-97	97-98	98-99
1.	MLISc	—	76	79	123	121	137	138
2.	MCA	—	149	160	184	352	596	600
3.	PGDDE	84	85	85	85	89	95	95
4.	MP	1777	1965	2088	2313	2370	2465	2500
5.	BDP	6271	7177	7392	7690	7279	7468	7657
6.	BCA	—	—	—	—	81	157	203
7.	BLISc	90	119	120	134	121	139	169
8.	BSc	486	608	641	743	1996	2112	2164
9.	BSc (N)	—	128	160	221	250	306	306
10.	BTS	—	—	—	—	97	127	230
11.	ADCM/ADWRE	—	79	143	178	377	385	398
12.	PGDHE	116	125	125	146	85	158	162
13.	PGJMC	—	—	—	6	73	205	205
14.	PGDMCH	—	—	—	—	—	73	179
15.	PGDT	—	—	—	—	—	—	6
16.	DCO	123	173	188	208	303	405	500
17.	DCE	83	90	91	100	95	112	114
18.	DCH	62	75	79	80	105	127	132
19.	DECE	—	—	28	51	68	93	98
20.	DRD	820	878	910	932	890	925	927
21.	DNHE	—	92	96	100	90	136	140
22.	DTS	—	—	—	—	81	151	200
23.	CIC	—	—	—	7	165	209	513
24.	CDM	—	—	—	—	—	—	42
25.	CES	—	—	—	—	—	—	10
26.	CFN	680	718	826	845	750	852	860
27.	CIG	76	104	115	127	147	165	169
28.	CNCC	—	—	—	—	—	—	30
29.	CPFM	—	—	—	—	—	—	2
30.	CTE	—	—	—	—	34	113	113
31.	CTS	—	133	133	269	306	—	126
32.	PGCRW	—	—	—	—	—	—	3
		10558	12774	13457	14542	16325	17711	18991

Source: S. Panda (Ed) (1999) *Open and Distance Education: Policies, Practices and Quality Concerns*, New Delhi: Aravali Books International.

Structure and management

Introduction

In the previous chapters, we have examined the developments that made the emergence of the Open Distance Learning System inevitable. The ODL system in general and the open university in particular, is not an invention in the pursuit of knowledge for its own sake. It is the reaction of the education system to a new challenge, the response to a new demand, and the result of a silent revolution in education in the later part of the second-half of the 20th century. If we review some of the major events of the 20th century, many may claim our attention: the developments in nuclear science; invention of the computer; space travel; breakthroughs in life sciences; the triumph of human spirit in its striving to assert the dignity of the individual and demand for individual freedom. Important though these are, two factors stand out which history will identify with the 20th century:

- The emergence of knowledge as a resource.
- The status and role of Science and Technology as a major force in the social, cultural and economic life of the people.

These two are inter-related; but have their own significance.

The agricultural economy depended on muscle power: skill obtained through training; literacy was not an economic or even a social necessity and education was then an embellishment and an ornament. The industrial revolution, that was ushered in around the middle of the 18th century, gradually replaced craft by technology and technology derived from science was not accessible to illiterate people. Consequently education became an economic necessity and a tool for development.

The explosion of knowledge in the second-half of the century gone by has brought about an environment that is totally new in human history — almost a break from the past. Knowledge today is a resource — a resource that can be renewed, augmented and can create other resources that may be needed. Francis Bacon observed, 'Knowledge is power'. When he said so, it was only a prediction; a prophecy; today it is a fact — an undeniable fact. Among the three forces that have dominated human progress, i.e. the power of the muscle, the power of money, and the power of the mind, the last one has established a decisive supremacy now. Knowledge today is no longer for its own sake; knowledge

predominantly is for development. The cultivation of mind and the creation and utilisation of knowledge are all in the domain of education. In the last quarter of the twentieth century, we saw an unusual emphasis on, and awakening to, the importance of education — 'Education For All'. This certainly is a 20th century phenomenon.

The second important factor is, as referred to earlier, the dominant role that Science and Technology (S&T) plays in contemporary life. Like religion in the distant past, and political and economic concepts in the last few centuries, S&T has become an influence and a major determinant in the social, cultural and economic life of the people. It has the advantage that it is a secular force. We had from the beginning of history rich and poor people in every country but today we see the spectacle of a world divided into rich and poor nations — a few on the side of the rich, and many on the side of the poor, almost at the ratio of 1:4. Nobel Prize winning physicist Late Prof. Abdus Salam (1988) once said that 'approximately a little over 23 percent of the world living in advanced countries have access to nearly 80 percent of the resources and the 77 percent have access to nearly 20 percent of resources — an imbalance that has vast potential for unrest and instability'. Prof. Salam was of the opinion that language or religion or race or the economic organisation or the political systems; even the area of the land and natural resources had not generated this inequality.

The rich nations are synonymous with advanced nations in S&T and its wide application, perhaps with a few exceptions, the poor ones, being those that linger long way behind. The rate of advancement of knowledge in S&T is such that in software and information technology, knowledge doubles every four or five years; in Electrical Engineering it is every 10 years. A software engineer who graduates four years after admission, on the basis of curriculum and syllabi drawn at the beginning of his study is partly obsolete before he leaves the portals of the college. Reeducation and retraining of the working population today is as important as formal education of the youth. This again is a 20th century phenomenon. Consequently, the following new demands and challenges have emerged on the scene:

- Conventional universities deal predominantly with the youth in the age groups 18+ to 21 or 22. We need today educational institutions that will provide conventional education to those who missed it, and opportunities for *re-education of the working population* of all age groups in their working life.
- The population in the second category is enormous; the target group is diverse and the programmes needed are numerous; we need therefore a system with *high productivity consistent with quality*.
- The learners from the second group may not be able to come to the place of learning for any significant length of time. We have to take knowledge to them, wherever they are. We need a system with *great flexibility and openness*.

The ODL system emerged from the conventional system to meet these new objectives namely, high productivity, cost-effectiveness, relevance, and flexibility, without compromising with quality. Moreover, it has the inherent virtue of being learner-centric. The structure and management of the ODL-system should therefore be conducive to achieving these objectives.

The ODL system vis-à-vis conventional universities

The entire system of education can be looked as consisting of two major components: Formal system and Non-formal system. The former is the conventional system that we have been familiar with for a few centuries now. In the latter, the open university system is a part; may be an important one. We may, for brevity, touch upon formal and non-formal channels of education.

- The explosion in the use of computers and the workforce that may be needed was not foreseen in India. Today, private institutions substantially meet the demand. The courses they offer come up to tertiary levels.
- A large number of professional bodies offer 'membership' programmes and 'fellowship' programmes that are equivalent to Bachelor's and Master's degrees. The Institution of Engineers (India) produces graduates in Engineering, larger in number than any single educational institution.
- The chartered accountants work through the programmes offered and take the examinations conducted by the Institute of Chartered Accountants.

We need to take a holistic view of educational opportunities available in the country. The entire field of organised non-formal system of education may have to be kept in mind when we talk of *structure* and *management*. We need to take into account these systems also, which today remain outside what we are now considering under ODL system. In the long run, the non-formal sector of education will cater to a much larger number of learners than the formal system, and that too with tailor-made programmes to suit their needs.

It appears that conventional universities in the classical sense confining themselves totally to on-campus classroom teaching alone may not continue in the present form for long. In the past, universities had only scholarly functions — preservation of knowledge, creation of knowledge, and communication of knowledge. Today, it is universally accepted that universities have developmental functions also; we refer to it as 'extension services'. Once the universities take up responsibilities outside their campuses, use of distance education methodology in one form or the other will become inevitable; with 64 correspondence course institutions, a slow transformation of every university into a dual-mode university is already there. In the state of Tamil Nadu, all general universities are functioning in dual-mode and the number of students in the distance education and conventional system programmes are now almost equal, though in the country as a whole the students in the distance education system are around 20 percent. In general, most educationists are of the firm opinion that all 11831 colleges, besides offering regular educational programmes, must interact with the community and become a change agent; an educating and training agency. The dual-mode universities — big and small — are likely to increase in number, and will far outweigh the number of single-mode universities in future.

If we analyse teaching and learning, we find that in general they consist of two components:

- Face-to-face instruction
- Self-study.

The conventional system and distance education system consist of both of these components. Face-to-face instruction and self-study form two ends of a spectrum in which the ratio between the two varies for the two systems. However, in spite of the various limitations of the word of mouth in face-to-face interaction, the educators by and large have been so obsessed with and captive of the human face in education that now it has come to occupy an almost inaccessible position. Some even choose to take it as the benchmark for judging the usefulness and effectiveness of other delivery modes when considering other contexts. These considerations have weighed with educators and reappeared, though to a lesser extent in the open learning system. In the distance education system, the face-to-face instruction component is modest for humanities and social sciences, and significant for sciences, technology and computers. The shift in emphasis to self-study and use of technology to simulate face-to-face instruction have endowed the distance education system with enormous capacity for higher productivity and greater flexibility.

Management structures

The conventional universities have nearly 900 years of history and they were initially established in the UK and Europe. All the universities in other parts of the world, whatever be their ancient system, have been moulded after those in the UK and Europe. The structure and management of the conventional system are by and large the same all over the world. Even the academic programmes have the Bachelor's, Master's and Doctorate degrees with equivalence having been mostly accepted. The affiliating universities are an exception; and we have them in only three SAARC countries: India, Pakistan and Bangladesh.

The open universities have only about 32 years of history, starting with the UKOU, but one sees considerable diversity in *structure and management*, in spite of the fact that the main academic awards are common with the conventional system. They are still evolving, and we are bound to have more than one model. For our present discussion, we may consider the following:

- Single-mode universities,
- Dual-mode universities, and
- Consortium of institutions.

To begin with, let us consider a few general problems that are pertinent to all universities whatever be the mode. Quality and relevance are two important characteristics of any education system. However, the twin phenomena of globalisation and liberalization has brought these to the forefront of educational transactions. The concept of quality in particular was almost alien to academic parlance in not too distant past.

But now it is one of the central issues being attended to by educational planners and managers. Many educationists feel that mass education may dilute the quality of education. Nobel Laureate Prof. Amartya Sen expressed this concern when he said that 'University education in India is in a state of crisis. It is not a crisis of lack of resources. It is deterioration in quality. The quality would vary from one university to another. However, the minimum levels of quality should be observed'.

Having an 'industrial' character, open-distance learning lends itself to quality indicators. Yet quality has meant different things to different people. But it is now generally agreed that it is "fitness of purpose" (Green, 1994). Powar and Panda (1995) note that "an institution of high quality is one that effectively and efficiently meets its stated purpose(s) or mission which should have taken into account the clients' stated as well as implicit needs". Quality should be regarded as developmental — a never ending process — as it is related to excellence and encourages learners for deep learning. The thrust of the Eighth and Ninth Plans has been to impart quality education through ICT and information pathways. It is heartening to learn that MHRD has identified quality as one of the thrust areas to be strengthened further in the 10th Plan by creating a communication network for free flow of knowledge and access to and availability of multimedia learning materials. In such a rapidly improving educational scenario, it is essential to promote assessment and accreditation of educational institutions. In India, we have set up already three organisations for quality assessment:

- (i) National Assessment and Accreditation Council (NAAC);
- (ii) National Board of Accreditation (NBA);
- (iii) Distance Education Council (DEC).

While NAAC is charged with the responsibility of assessing and accrediting programmes falling under the purview of the UGC, NBA looks after professional programmes under the AICTE. DEC, under IGNOU, is vested with the task of determination of standards for distance education system.

The question that faces us is: for ensuring standards in each university and for recognition and transfer of credits between one university and another, and between an open university and a conventional university, how do we set up parameters? What indicators do we make use of? Quality assessment, quality comparison and quality assurance are issues in academic management. Conventional systems have some yardsticks and some experience. Similar experience in the open learning system in this regard is not available in any of the countries. Many universities have taken the stand that maintenance of standards is an internal matter and they need nobody's certification. However, in view of the need to promote mobility and taking into account the increasing globalisation and keeping in view that education is assuming an industrial character, and becoming marketable, quality assessment is becoming important. "I certify the quality of my product" is no longer acceptable.

Single-mode universities

Coming to management in general, we have centuries of experience in the conventional system; even there we do not still know how best to manage an academic institution. The entire management science seems to be for industries, though one may try to transfer and use some of the concepts in the university environment. The academics in principle cannot be 'managed', and would not like the term to be associated with them. In the early years of the establishment of the UGC in India, it was desired that some form of review be undertaken by the UGC but the universities refused to accept any such step in the name of

changes. A time was when education, at any level, was considered a social service and cost for the learner was nominal. Today, the approach to education varies from social service to investment and commercial enterprise. As mentioned earlier, education has become a marketable commodity and has entered the commercial field. It is learnt that in Hong Kong, nearly twenty universities from other countries have established their study centres and offer selectively certain programmes. We read news items in the press about teams of Deans and Professors of universities from abroad negotiating with institutions and individuals in India for establishing cooperative programmes for the award of their degrees. Many open universities have their study centres in other countries. Going a step further, we learn that Monash University has established regular university campuses in Malaysia and South Africa. It is in no way different from multinational corporations establishing industries; these are not large in number, but they indicate a trend and a direction in the development of educational opportunities. However, governments, especially in developing countries, should have a philosophy and principle of funding open universities and a device for monitoring quality to ensure that commercial considerations do not take the form of inferior service and exploitation.

It appears that a differential fee system may be appropriate. In IGNOU, programmes like B.A., B.Com, and B.Sc., intended for men and women who missed opportunities for higher education because of social, economic and other constraints, are subsidised; diploma and degree programmes in areas like engineering, computer science, and management offered mostly for employed candidates who pursue further education for career advancement are made almost self-sufficient. Continuing education of employed personnel for updating and broadening of knowledge may be supported by the employers and could be self-supporting. It is clear that problems of this nature will vary from country to country; still, it is important enough to share experiences and view points, and if possible arrive at reasonable and flexible guidelines to assist the planners and policy makers.

Funding open universities

Introduction

Under the Constitution of India, until 1976 education was an exclusive responsibility of the state governments. The central government had only a very limited role to play, and that too confined to university education and the responsibility assigned was coordination and determination of standards. In 1977, through an amendment to the Constitution, education was made the joint responsibility of the central and the state governments.¹ Following this amendment, the central government took a few initiatives in the field of education. Nevertheless, education continues to be primarily the responsibility of the state governments. Now that right to education has been made a fundamental right, we may look forward to some decisive steps in the right direction.

The last four and a half decades witnessed a continuously increasing government share in investments in education with a correspondingly declining trend in investment from other sources. Table 5.1 provides the data on source-wise contribution of finance to education in India.

The *National Policy on Education, 1986* stipulated that the outlay on education would be stepped up to ensure that during the Eighth Five Year Plan (1990-95)² and thereafter it will exceed 6 percent of the GNP (GOI, 1986). According to an assessment made by the Committee for Review of the *National Policy on Education*, the expenditure on education was about 4.2 percent of the GNP in 1989-90.

Financing universities: policies and perspectives

In the university and higher education system in India, colleges are largely affiliated to universities; they teach students in accordance with a prescribed curriculum and syllabi and present them for university examinations; and the degrees are awarded by the universities.

The universities in India fall in one of the three following categories:

¹Constitution of India, Article 246 and Seventh Schedule.

²The period of the Eighth Five Year Plan was later changed to 1992-97.

Table 5.1 Source-wise contribution of finance to education in India (percent)

Source	1950-51	1960-61	1970-71	1980-81	1990-91
Government Sector (Central & State Governments)	57.10	68.00	75.60	80.00	87.63
Local Governments (Municipalities, Zilla Parishads, Panchayats)	10.90	6.50	5.70	5.00	3.03
Private Sector					
a. Fees	20.40	17.20	12.80	12.00	9.20
b. Endowments	11.60	8.30	5.90	3.00	0.14
Total	100.00 (1.14)	(100.00) (3.44)	(100.00) (11.18)	100.00 (46.88)	100.00 (203.51)

Note: Figures in brackets - in millions of rupees

Source: *Towards an Enlightened and Human Society: Report of the Committee for Review of National Policy on Education 1986*, Ministry of Human Resources Development, Govt. of India. (For 1990-91, figures have been estimated on the basis of data contained in *Selected Educational Statistics: Department of Education, Ministry of HRD, Government of India*).

- (i) Central universities and institutions of national importance established under Acts of Parliament by the central government.
- (ii) State universities established under Acts of the state governments concerned.
- (iii) Institutions notified as 'institutions deemed to be universities', under the UGC Act.

The entire expenditure of the central universities is met by the central government through grants paid through the University Grants Commission, while the state governments meet the expenditure on the state universities. Broadly, the existing pattern of financing higher education in the country is as follows.

Central universities

The central government meets the entire cost of development and maintenance of all the universities established under Acts of Parliament. The pattern of 'maintenance finance' is on net deficit basis, i.e. the deficit in expenditure after adjusting the income received from other sources against the gross operating costs is met through government grants. On the basis of the total outlay for higher education, each central university in the conventional system is informed of the likely availability of resources for a Five Year Plan period and asked to submit proposals to the UGC within the outlay. The proposals are then assessed by Expert Committees appointed by the UGC and grants are paid on their recommendations to individual universities. The central university in the ODL system submits such proposals to the MHRD directly.

State universities

The pattern of financing of state universities is more or less the same as for central

universities excepting that the maintenance expenditure is met by the state governments through grants given by them. The financial position of state universities has not been as happy as that of central universities, though the difficulties encountered vary from state to state. There have been reports that the grants have not been adequate to cover the net deficit and some universities have accumulated huge deficits over long periods, particularly following revision of pay scales. This has resulted in the slowing down of all developmental activities.

The development expenditure of the state universities is shared by the state governments and the UGC. As in the case of the central universities, the UGC indicates to each state university the tentative allocation for a five-year period. Proposals formulated by the universities are assessed by Expert Committees and grants are released by the UGC. The pattern of support from the UGC involves a sharing of the development cost between the UGC and the state government according to certain norms stipulated by the UGC.

Institutions deemed to be universities

The institutions in this category belong mainly to the private sector. As of December 2001, we had 46 deemed universities. They were initially established mostly through the efforts of non-government organisations in different areas of knowledge and enterprise. They have been notified as deemed to be universities on the basis of a critical assessment of their contribution to the attainments of the objectives of university education and national priorities, as also the level and standards of their contribution. Some of these institutions are fully financed by the central government both for their maintenance and development; a few are supported by the centre and the states concerned; while others continue to function without any financial support from either the central or the state governments.

In view of the above discussion, the following points emerge:

- University education is primarily financed by government sources.
- Students' fees constitute less than 10 percent of the financing of universities, and this obviously is a very small proportion of total costs incurred on higher education. Even the Tenth Plan document of MHRD envisages recovering not more than 20-30 percent of the total cost from students.
- Donations and endowments from private sources have been dwindling continuously.

In the last four decades, the share of higher education in the total outlay for education has varied from 8 to 25 percent, as can be seen from Table 5.2.

Recent trends

During the last two decades, some states of India – Karnataka, Maharashtra and Tamil Nadu in particular – have witnessed a significant initiative by private enterprise in higher education. The laws of the land do not permit private organisations to establish universities as such, but they can establish colleges which can be affiliated to a university. The affiliation system enables the colleges to present their students for the university examination concerned and if they qualify, the degree is awarded by the universities. The recent private initiatives

Table 5.2 Higher education in Five Year Plans

Five Year Plan	Percentage Share of		
	Education in total plan outlay	Higher education in total	
		Plan outlay	Education outlay
First Plan (1951-56)	7.86	0.71	9
Second Plan (1956-61)	5.83	1.02	18
Third Plan (1961-66)	6.87	1.01	15
Plan Interregnum (1967-69)	4.60	1.16	24
Fourth Plan (1969-74)	4.90	1.24	25
Fifth Plan (1974-79)	3.27	0.52	22
Sixth Plan (1980-85)	2.70	0.49	18
Seventh Plan (1985-90)	3.70	0.53	14
Eighth Plan (1992-97)	4.55	0.35	8
Ninth Plan (1997-2002)*	5.08	0.51	10

Source: Based on Five-Year Plan(s) and Annual Plan(s), New Delhi, Planning Commission.

*Central Plan only

have been predominantly confined to technical and professional education, particularly, Computers, Information Technology, Business Administration, Medicine and Engineering, for which there is a continuously increasing social demand. These private colleges in most cases recover the full cost of education from the students. The emergence of these self-supporting/self-financing higher education institutions is a positive step in the right direction and be viewed as such as far as their role in financing higher education in the country is concerned. There may be attempts at commercialising education; it is possible to regulate the system to avoid abuses. Due to the phenomena of globalisation and liberalisation, foreign universities, some of which are of high repute, have in the 1990s begun entering into twinning arrangements and partnership with private providers. While this trend seems to be irresistible, monitoring mechanisms need to be put in place.

Advent of distance and open learning system

Distance education programmes were formally initiated in India through correspondence education launched by the University of Delhi in 1962 almost as a pilot project. During the last about four decades, the number of conventional universities offering correspondence education programmes has exceeded 64. These are dual mode institutions and in most cases, the programmes offered by the face-to-face system as well as those through correspondence are the same. Many of these universities do not have any worthwhile student support system. As a result, they have been able to offer correspondence programmes at a relatively low cost ranging from 11 to 23 percent of the cost of conventional education. Often quality suffers in this process.

In fact, the experience of funding correspondence education in India has been mixed. No definite pattern of financing correspondence education has emerged. The understanding has, by and large, been that the correspondence programmes must be self-supporting. This

64 Education for knowledge era

approach has an impact on the distance education system in general, and when the open universities were established, the general expectation was that they would cost very little to the government by way of operational expenditure, though substantial initial capital investment had to be made.

The first open university in India was established in 1982 at Hyderabad by the state government of Andhra Pradesh by an Act of the State Legislature and the Government of Andhra Pradesh was responsible for provision of its finances. The establishment of the Andhra Pradesh Open University was soon followed in 1985 by the establishment of the Indira Gandhi National Open University (IGNOU) under an Act of the Parliament of India. Besides functioning as an Open University, the IGNOU, according to the Act, has to function as an apex body promoting, coordinating and determining the standards of distance education in the country. As a University, the IGNOU's mandate involves formulation of academic programmes with clearly defined focus on employment needs, economic development, social responsibility, human resource development, and the development of an innovative system of education for the future. As of December 2001, the ODL system in the country comprised one national open university, nine state open universities and 64 correspondence course institutes/ directorates of distance education.

Funding policy

When the University was established in 1985, one of the major considerations that the government had in view was the cost-effectiveness of the open university system without sacrificing standards. It was envisaged that although the initial cost especially on capital was likely to be substantial, the per student operating cost would be a modest fraction of the expenditure incurred by a conventional university. It was also anticipated that the effectiveness of the open university system would largely depend on the use of quality equipment and the latest information and communication technologies. A significant decision taken by the government while establishing the university was to fund the university directly rather than channelising the grants through the University Grants Commission as in the case of all other central universities. As a consequence, the IGNOU remains the only university established under an Act of Parliament which receives its grants directly from the central government.

Either at the time of establishment of the IGNOU or later, the Government of India have not articulated any funding policy for the open university as such, which was distinct from the policy followed in funding conventional universities. Generally, analysis of costs and benefits of university education has not been attempted. Education at all levels has been treated as part of social service. It is only in the recent years that economics of higher education has come to be discussed and the universities are asked to generate funds. While a concern in this regard is in evidence, and there was also a step taken to freeze the maintenance grant at 1991-92 levels, no clear policy has emerged.

It has been assumed as axiomatic that an open university will be cost-effective and the per capita cost will be much less than in the conventional system. In addition to meeting the demands of equity and equality of opportunities, and satisfying the aspirations of large

numbers, it is presumed that since it also has the virtue of high productivity, per unit cost must be less. The distance education system is still in its early stages of development and it may take sometime before a clear funding policy is established. It is necessary that distance education specialists address themselves to this issue and provide certain norms and guidelines for formulating a policy on funding open universities. In the field of education, including higher education, economic analysis has to take into account, besides quality, issue of social demand, problems of equity and the commitment to human resources development by the government. The problem therefore is complex, and a methodology must be evolved by which the academic and non-academic components can be separated and considered independently.

The IGNOU costs

Capital costs

Like any other major educational institution, IGNOU had to make substantial investments in developing its own infrastructure (capital costs) and in organising its programmes and activities (operating costs). The capital costs are for buildings, equipment and library. The government allotted 150 acres of land, temporary buildings were put up and the university has been functioning in them since 1988-1989. The building work for the main campus and residential flats began in 1992-93 and it is estimated to cost around 450 million rupees.

Immediately after the University was established, an agreement was entered into between the Government of India and the United Kingdom. The latter, under its ODA Programme, agreed to provide substantial assistance to IGNOU in the form of equipment, books, consultancies and training slots. The equipment grant under this project included a VAX Computer System and the setting up of an audio-video production studio complete with equipment. The ODA assistance for equipment came as grant-in-aid and is not shown in the capital expenditure. The cost was IRs 1.55 million. Later in 1989, the Government of Japan agreed to equip an Electronic Media Production Centre for audio-video programmes. The agreement involved supply and installation of the post production facilities costing over IRs 72 million. Since this was in the form of assistance to the Government of India, the University had to bear the cost notionally. This has been included in the capital costs.

The university had incurred substantial expenditure on office equipment including personal computers, photocopying machines, office furniture and other supplies. The university has also developed a library on which significant investment has been made. Table 5.3 gives the investments made by the university on its own infrastructural development during the years of its operation till 2000-01. While expenditure on buildings and campus development got reduced over the years, those on equipment and furniture, and library have increased. Campus development expenditure for 2001-2002 may increase due to substantial work in progress.

The operating costs

The operating costs of IGNOU are presented under three major categories. These are:

Table 5.3 Investments on capital items (from 1985 to 2001)

(IRs. in million)

Year	Buildings & campus development	Equipment & furniture	Library	Vehicles	Others	Total
1985-86	1.23 (93.27)	1.23 (4.7)	0.12 (0.48)	0.4 (1.54)	-	26.07 (100.00)
1986-87	10.28 (51.73)	7.08 (35.6)	2.07 (10.42)	0.44 (2.22)	-	19.87 (100.00)
1987-88	14.25 (33.32)	25.53 (59.72)	2.45 (5.74)	0.52 (1.22)	-	42.75 (100.00)
1988-89	22.06 (42.86)	25.24 (49.03)	3.10 (6.02)	1.08 (2.09)	-	51.48 (100.00)
1989-90	11.61 (11.60)	84.76 (84.65)	3.15 (3.14)	0.61 (0.61)	-	100.13 (100.00)
1990-91	6.13 (18.20)	21.01 (62.36)	5.95 (17.66)	0.60 (1.78)	-	33.69 (100.00)
1991-92	14.39 (55.61)	7.05 (27.25)	3.46 (13.38)	0.55 (2.12)	0.42 (1.64)	25.87 (100.00)
1992-93	17.03 (57.38)	7.35 (24.76)	5.00 (16.85)	0.3 (1.01)	-	29.68 (100.00)
1993-94	29.16 (76.66)	5.63 (14.80)	3.25 (8.54)	0 (0)	-	38.04 (100.00)
1994-95	2.38 (19.85)	8.44 (70.39)	1.17 (9.76)	0 (0)	-	11.99 (100.00)
1995-96	672.95 (97.93)	9.72 (1.41)	2.89 (0.42)	1.59 (0.24)	-	687.15 (100.00)
1996-97	66.87 (67.97)	27.34 (27.79)	3.85 (3.91)	0.32 (0.33)	-	98.38 (100.00)
1997-98	9.75 (30.79)	14.05 (44.36)	6.88 (21.72)	0.99 (3.13)	-	31.67 (100.00)
1998-99	15.01 (34.95)	18.48 (43.03)	8.30 (19.32)	1.16 (2.70)	-	42.95 (100.00)
1999-2000	17.62 (16.89)	80.07 (76.77)	6.51 (6.24)	0.10 (0.10)	-	104.30 (100.00)
2000-01	8.81 (7.78)	97.46 (86.03)	1.23 (1.09)	2.11 (1.86)	3.67* (3.24)	113.28 (100.00)

Note: Figures in parenthesis are percentages to total

Source: Data compiled from the Annual Accounts of IGNOU.

* North East Project

- (i) development and production of materials for courses and programmes;
- (ii) student support services; and
- (iii) institutional overheads.

The major items of costs included in the development and production of materials are the salaries of faculty and supporting technical and administrative staff associated with production of print and non-print material, the cost of audio and video programmes, honorarium and traveling costs paid to course writers, editors and review editors.

The costs on student support services include expenditure on admission, distribution of materials, maintenance of the network of regional and study centres, student counselling, practicals and laboratory work, examination, evaluation and student records, etc.

The major items under institutional overheads are general administration, common services, general charges, transport, campus maintenance and the like.

The operating costs incurred by IGNOU since its inception are presented in Table 5.4.

Table 5.4 IGNOU's operating costs (1985-2001) (IRs, in million)

Year	Development and production of material	Student support services	Institutional overheads	Total
1985-86	0.31 (10.52)	-	2.68 (89.48)	2.99 (100.00)
1986-87	3.23 (29.99)	0.37 (3.48)	7.18 (66.53)	10.78 (100.00)
1987-88	11.32 (30.63)	4.88 (13.20)	20.75 (56.17)	36.95 (100.00)
1988-89	29.57 (39.80)	11.40 (15.34)	33.32 (44.86)	74.29 (100.00)
1989-90	34.01 (40.52)	20.71 (24.69)	29.19 (34.79)	83.92 (100.00)
1990-91	43.68 (38.81)	32.39 (28.79)	36.47 (32.40)	112.54 (100.00)
1991-92	66.21 (42.98)	39.06 (25.36)	48.77 (31.66)	154.04 (100.00)
1992-93	39.86 (27.22)	43.64 (29.80)	62.95 (42.98)	146.45 (100.00)
1993-94	57.31 (35.06)	46.00 (28.14)	60.17 (36.80)	163.48 (100.00)
1994-95	62.97 (34.69)	61.20 (33.72)	57.35 (31.59)	181.52 (100.00)
1995-96	60.93 (27.95)	77.56 (35.57)	79.53 (36.48)	218.02 (100.00)
1996-97	80.97 (27.54)	138.37 (47.06)	74.70 (26.40)	294.04 (100.00)
1997-98	116.05 (28.51)	193.32 (47.49)	97.72 (24.00)	407.09 (100.00)
1998-99	163.54 (29.17)	274.60 (48.99)	122.42 (21.84)	560.56 (100.00)
1999-2000	132.49 (20.10)	401.41 (60.90)	125.27 (19.00)	659.17 (100.00)
2000-01	226.54 (27.02)	481.90 (57.48)	129.87 (15.50)	838.31 (100.00)

Source: Data compiled from the Annual Accounts, IGNOU.

It is observed that during 1995-2001, expenditure on development and production of course material has remained almost constant at the level of 28 percent, but the percentage expenditure on Student Support Services has almost doubled from 29.8 to 57.48 percent. This

is indicative of institution's efforts to enlarge and strengthen student support services and should be encouraged, in principle. However, it is necessary to ensure that funds are utilised for identified activities. It is therefore desirable, even necessary because of the spread of support services in time and space, to periodically sponsor studies towards regulating and monitoring expenditure vis-à-vis quality of support. Another healthy trend noticed is that percentage expenditure on institutional overheads has decreased from 42.98 to 15.5 percent. The same trend is expected to continue.

Unlike in the conventional universities, the salary component in the operating costs of IGNOU is very low. It has been less than one-fourth so far against 80 percent or more in the conventional system. This was possible because for a large part of its operations in the delivery of programmes, the university engages only part-time staff. Table 5.5 gives the

Table 5.5 Operating costs of IGNOU: salary and non-salary components (Rs. in million)

Year	Salary	Non-salary	Total
1985-86	0.45 (15.06)	2.54 (84.94)	2.99 (100.00)
1986-87	2.63 (24.41)	8.15 (75.59)	10.78 (100.00)
1987-88	10.13 (27.42)	26.82 (72.58)	36.95 (100.00)
1988-89	20.89 (28.13)	53.39 (71.87)	74.29 (100.00)
1989-90	30.67 (36.55)	53.24 (63.45)	83.92 (100.00)
1990-91	41.47 (36.85)	71.07 (63.15)	112.54 (100.00)
1991-92	51.49 (33.42)	102.55 (66.58)	154.04 (100.00)
1992-93	42.45 (28.99)	104.00 (71.01)	146.45 (100.00)
1993-94	50.44 (30.85)	113.04 (69.15)	163.48 (100.00)
1994-95	57.79 (31.84)	123.73 (68.16)	181.52 (100.00)
1995-96	70.4 (32.29)	147.62 (67.71)	218.02 (100.00)
1996-97	81.67 (27.78)	212.37 (72.22)	294.04 (100.00)
1997-98	104.67 (25.71)	302.42 (74.29)	407.09 (100.00)
1998-99	182.88 (32.62)	377.68 (67.38)	560.56 (100.00)
1999-2000	179.73 (27.27)	479.44 (72.73)	659.17 (100.00)
2000-01	189.45 (22.60)	648.86 (77.40)	838.31 (100.00)

Source: Data compiled from the Annual Accounts, IGNOU.

details of salary component in the operating costs for IGNOU. This component has declined rather than registering growth (as part of overall expenditure) in every successive year. This is in complete contrast to the conventional system where major operating costs are in the form of salaries of teachers and staff leaving very little for developments. That is why most of the universities in India today cannot afford to subscribe to research journals, reference books and text books. In this respect, ODL system appears very attractive to the funding agencies and its practitioners must use the opportunity to enhance access to higher education within the reach of the poor and marginalised.

It will be observed that while during 1990-2001, the percentage expenditure on salary has come down from 36.85 to 22.60 percent, the expenditure on non-salary component which directly represents the expenditure on services increased from 63.15 to 77.40 percent during the same period. To be justifiable this increase should be correlated to quality of student support, retention and success rate of students and social relevance of various programmes.

How did IGNOU meet the costs

Since IGNOU was established by the central government, the responsibility for funding the university devolves on the Government of India. As in the case of other central universities, the pattern of funding has been on net-deficit basis, that is, the deficit in expenditure after adjusting all income from other sources is met by the government through grants released directly to the university. In the initial stages, the university depended entirely on government grants; in later years, it has begun to generate substantial income mainly in the form of student fees. In the Ninth Five Year Plan period, receipts from the central government gradually slowed down from 15.0 to 2.0 percent of the total expenditure. YCMOU achieved self-sufficiency within a few years of its inception. It should be taken as a healthy indicator for the ODL system.

The other sources of income of IGNOU are certain minor grants received from state governments to meet the rent of the buildings for regional centres, proceeds from the sale of course materials, interest on bank deposits, etc. There have so far been no significant resource mobilisation in the form of donations or endowments.

The source-wise contribution to the IGNOU's income is presented in Table 5.6 for the period 1985-2001 particularly from professional courses like management, computers and teacher education, where majority of learners are employed and come from upper middle strata of our society.

As per the Tenth Plan document, students are not expected to contribute, as fee, more than 30 percent of the total expenditure. While this may generate funds for conventional universities, it runs counter to the concept of self-sufficiency and could create difficulties for open universities, some of which have differential fee structures to stay socially relevant.

It will be seen that the internal resource generation by IGNOU is steadily increasing. The level of recovery in 1991-92 through fees was about 33 percent of the gross operating costs and in 2000-2001, it rose to about 50 percent. To the extent internal resource generation increases, dependence on government grants will decline.

Table 5.7 gives the proportion of fee income to the gross operating costs. It will be seen

70 Education for knowledge era

Table 5.6 The sources of finance for IGNOU (1985-2001) (IRs. in million)

Year	Grants from Govt. of India	Grants from state govt.	Student fee	Receipts from publications	Interest on bank deposits	Other sources	Total
1985-86	29.29 (100.00)	—	—	—	—	—	29.29 (100.00)
1986-87	75.21 (97.54)	—	1.86 (2.41)	0.06 (0.08)	—	0.13 (0.17)	77.27 (100.00)
1987-88	75.35 (94.55)	0.17 (0.21)	2.95 (3.70)	0.12 (0.16)	0.98 (1.22)	0.12 (0.16)	79.69 (100.00)
1988-89	110.00 (86.65)	0.21 (0.17)	14.97 (11.79)	1.00 (0.79)	0.58 (0.46)	0.19 (0.14)	126.94 (100.00)
1989-90	185.10 (87.47)	0.27 (0.13)	21.88 (10.34)	1.05 (0.50)	2.39 (1.13)	0.91 (0.43)	211.61 (100.00)
1990-91	133.71 (80.28)	0.37 (0.22)	27.50 (16.51)	1.23 (0.74)	2.83 (1.70)	0.91 (0.55)	166.55 (100.00)
1991-92	132.09 (70.39)	0.81 (0.43)	49.81 (26.37)	1.23 (0.65)	2.53 (1.34)	1.55 (0.82)	188.93 (100.00)
1992-93	170.3 (71.65)	0.52 (0.22)	58.55 (24.63)	4.22 (1.78)	1.52 (0.64)	2.58 (1.08)	237.69 (100.00)
1993-94	176.46 (66.49)	0.27 (0.10)	78.53 (29.59)	2.57 (0.97)	0.42 (0.15)	7.16 (2.70)	265.41 (100.00)
1994-95	177.39 (55.44)	0.33 (0.10)	125.96 (39.36)	2.33 (0.73)	1.71 (0.53)	12.27 (3.84)	319.99 (100.00)
1995-96@	178.42 (45.02)	0.67 (0.17)	174.99 (44.15)	4.10 (1.03)	17.32 (4.37)	20.84 (5.26)	396.34 (100.00)
1996-97@	220.20 (43.15)	0.84 (0.16)	271.39 (53.16)	0.25 (0.05)	8.23 (1.61)	9.50 (1.87)	510.50 (100.00)
1997-98	165.20 (32.19)	0.33 (0.06)	320.00 (62.35)	6.45 (1.26)	14.83 (2.89)	6.43 (1.25)	513.24 (100.00)
1998-99	278.90 (35.76)	0.87 (0.11)	461.24 (59.14)	6.99 (0.90)	15.12 (1.94)	16.77 (2.15)	779.89 (100.00)
1999-2000	355.00 (30.26)	0.55 (0.05)	774.84 (66.05)	10.49 (0.89)	15.51 (1.32)	16.73 (1.43)	1173.12 (100.00)
2000-01#	457.50 (28.13)	0.82 (0.05)	1075.70 (66.13)	10.00 (0.61)	40.16 (2.48)	42.37 (2.60)	1626.55 (100.00)

Note: Figures in brackets indicate percentage distribution to the total in the respective years.

Source: Data compiled from the Annual Accounts, IGNOU.

*Does not include JICA Grant of Rs.680.00 Millions for construction of building and installation of equipment in EMPC.

@Does not include JICA Grant of Rs.57.44 Millions for construction of building and installation of equipment in EMPC.

#Does not include Grant of Rs.80.00 Millions for North East Project.

that in its second year the fee income was about 17 percent of the operating cost. In the seventh year, the proportion of fee income nearly doubled to 32.34 percent of the gross operating costs; and in the sixteenth year, it has increased to 128.32 percent. Increase in enrollment is a major factor in this development.

Table 5.7 Income from student fees as a proportion of gross operating costs (IRs in million)

Year	Total income	Gross operating costs	Income from fee	Income from fee as percent of gross operating costs
1985-86	29.29	2.99	—	—
1986-87	77.27	10.78	1.86	17.29
1987-88	79.69	36.95	2.95	7.98
1988-89	126.94	74.29	14.97	20.14
1989-90	211.61	83.92	21.89	26.08
1990-91	166.55	112.54	27.50	24.44
1991-92	188.93	154.04	49.81	32.34
1992-93	237.69	146.45	58.55	39.98
1993-94	265.41	163.48	78.53	48.04
1994-95	319.99	181.52	125.96	69.39
1995-96	396.34	218.02	174.99	80.26
1996-97	510.50	294.04	271.39	92.30
1997-98	513.24	407.09	320.00	78.61
1998-99	779.89	560.56	461.24	82.28
1999-2000	1173.12	659.17	774.84	117.55
2000-01	1626.55	838.31	1075.70	128.32

Source: Data compiled from the Annual Accounts, IGNOU.

In the existing pattern of net deficit funding, all the income generated by the university is treated as receipts, and the government provides only the difference between expenditure and income to balance the budget. Consequently, there is not much of an incentive for the universities to generate income since any additional income will mean corresponding reduction in the maintenance grant. In order to remedy this situation, it may be worthwhile that the government fixes the maintenance grant at a reference level with a 5 percent annual increment so that a university is free to utilise the additional income generated in accordance with the priorities that it may decide.

Pattern of funding: Some guiding principles

Education in India has, by and large, been treated as a welfare activity and the priority assigned to it has been low in the allocation of resources. In recent times, there has been a shift – education is being regarded as a sector for investment. The *National Policy of Education* declared that education would be regarded as an investment in the future and accorded a high priority. To fulfill the commitment, the Parliament made an amendment, in the constitution making upper primary education free and compulsory for upto 14 year olds. However, higher education stands on a separate footing and the present thinking is that the universities that have been till now depending entirely on government excepting for an insignificant income from tuition fees should endeavour to generate more income on their own and the government should progressively reduce its subsidy. This development has created a new situation for the universities and they are yet to devise ways and means of increasing their income.

72 Education for knowledge era

The IGNOU is a major innovation. It has a mandate, wide in sweep and extensive in operations. It has to widen access to higher education of good quality; it has to reach out to people who are disadvantaged, who live in remote and backward areas, hilly regions and island groups; it has to ensure equality of opportunity for higher education consistent with the employment needs and economic development. Any funding policy for IGNOU has to reckon with the standards to be maintained, the target groups to be served and the overall objectives to be achieved. A funding policy for open universities may have certain components that are universal and certain others that are local (regional, national) in character. The universal components of costs that must be met by the government are:

- the initial capital costs;
- the initial costs for the preparation of instructional material and the infrastructure for delivery; and
- a part of the recurring operational costs, found necessary to maintain standards and to ensure quality.

When the institution is well established, the responsibility for meeting operational costs and expenditure on capital works, if any, may vary from country to country depending on their social and educational objectives and the target groups served by the universities. It is difficult to establish any uniform funding pattern for all countries. Cost-effectiveness of distance education depends mainly on economies of scale and also the extent and nature of support services provided to the students. What part of the total cost must be met by the learners, and what could be the extent of subsidy from the government is not an academic decision. It is a matter for the governments to decide.

It can be roughly stated that learners who are already employed and who pursue open university programmes for career improvement can meet either full or a substantial part of the cost of their education. The IGNOU programmes in Management, Nursing, Engineering and Technology, and Computers will fall in this category. But candidates who have completed their secondary school education and want to join the open university because of their inability to pursue higher education in the conventional system due to social, economic and geographic constraints have to be provided subsidies to pursue higher education. In other words, the funding policy has to be not for the university as a whole, but for individual programmes keeping in view their objectives. It will be a spectrum ranging from surplus-generating programmes at one end to nearly 100 percent subsidy at the other, depending on individual programmes and their target groups.

The funding pattern as it is evolving for IGNOU can be stated as follows:

- The government may meet the full costs involved in the development of all infrastructural facilities. This will comprise buildings, equipment including all production and distribution facilities, furniture, office equipment, library, transport and all other durable assets. Later additions and replenishment/replacement of these facilities should also be supported by the government with adequate funds.
- The operating costs on the average may be taken to range from 33 to 40 percent of the conventional system. There may, however, be programmes involving small number of learners where the cost might almost equal the cost in the conventional system.

- Recovery of the operating costs has been decided so far, taking into consideration as a basis the fee in the conventional system. In general, the approach now is to fix tuition fee based on a differential system i.e. higher fee approximating to full-cost-recovery in some cases; heavily subsidised in some others and somewhere in between in yet others, depending on the target groups.
- The full cost of the subsidy involved in the administration of the differential fees may be met by the government.
- The above pattern of funding will not permit the university to develop new programmes and activities for which investments need to be made 2-3 years in advance. For this purpose, the university should create a development fund.
- The development fund may be built up as an endowment by:
 - a special contribution made by the government; and
 - raising donations and contributions from companies, trusts and other similar agencies who should be granted exemption from income tax, wealth tax etc. on such donations/contributions.
- The university may launch an aggressive marketing campaign of its programmes and courses so that they can be utilized by other open universities, private companies, etc. for their own programmes of education and training. The resources so generated should be transferred to the development fund.

Cost-effectiveness of distance education

Introduction

Despite the higher expenditure and large expansion, the percentage of beneficiaries of higher education among the relevant age group is still very low, particularly in the developing countries coming under medium human development and low human development. While the public expenditure and the number of higher education institutions have been on the rise, there has not been appreciable increase in the size of the relevant population receiving the benefits of higher education. 'In several countries the rate of expansion has outstripped the resources needed to maintain the system' (Selim, 1987: 126). The demand for higher education, on the other hand, has kept on increasing because of:

- the phenomenal expansion in the opportunities for school education;
- the increasing awareness among people about higher education as a means of upward mobility in social and economic spheres; and
- the higher education policy in a number of countries stressing on 'narrowing the gap, between educational opportunities (access, participation and attainment) of the rich and those of the poor, and among the various regions and groups of people through a more equitable distribution of resources and facilities' (Selim, 1987: 126).

The increasing demands for higher education have, over the years, led to the introduction and growth of the open learning system in the 1970s. When the distance education institutions were established in Europe, it was done, not so much out of cost consideration as out of egalitarian objectives that sought to make amends for the disparity in opportunities (Curtis, 1988: 27). But, later, when the thought caught on with the educationists in the 1980s, it was more out of a consideration to meet the challenge of large numbers, covering a wide spectrum of age and employment status, to be educated or trained and to enable governments to fulfil their obligations within the economic constraints without reducing the sweep of operations.

The pressure of unmet demands, the resource constraint and the inequitable nature of the existing system have made the option of Distance Education very appealing as a new

growth of imparting higher education. According to Lord Walter Perry's report, contained in *The State of Distance Learning—Worldwide* published in 1984, there were 21,00,000 students studying in distance learning institutions throughout the world (Singh, 1992: 26). As per the data available as of Jan. 1998 with the International Council for Distance Learning (ICDL), Open University, Milton Keynes, there are 1117 distance learning institutions in 115 countries offering 38974 courses. In Asia, according to the same source, there are 105 institutions. At the time when the study was undertaken, there were 600 distance learning institutions in 89 countries offering 22,182 courses. In Asia there were 74 institutions (covering Bangladesh, China, Hong Kong, India, Indonesia, Korea, Malaysia, Pakistan, Singapore, Sri Lanka, Taiwan, Thailand and Vietnam). Obviously, institutions in all the Asian countries have not found a place in the list. Even among countries listed, information about all the institutions is not available with ICDL. The information compiled by the National Institute of Multimedia Education, Japan (1992) includes Iran, Maldives, Myanmar, and Turkey with one institution each, and Nepal with two institutions.

As John Daniel (1987: 34) observes:

Through the world, higher level distance education continues to grow and evolve in an impressively diverse fashion. While firmly established for many years and in various forms in numerous countries, distance education at the higher level is now in full expansion, offering new programmes, catering for new clienteles, employing new technologies and achieving new results through its significant impact upon the teaching and learning programmes.

The 'exciting' developments of distance education are mainly due to its two cardinal features, namely, great 'flexibility' and high 'productivity' which answer the demands of equity, cost-effectiveness and opportunities for lifelong education. The arguments advanced as rationale for distance teaching programmes in the earlier days are more precisely elucidated by Gooler (1981:45) under the following heads:

- Numbers and necessity argument
- Egalitarian argument
- Economic argument
- Quality of education argument
- Spinoff benefits argument

Another argument that will become increasingly important and should be added to the list is the continuing education or lifelong education argument. The demand for distance courses is 'increasing day by day, because today it is unrealistic to expect that during the relatively limited period of formal education people can develop sufficient knowledge and skills to last a lifetime in a fast changing social and economic life' (Koul, 1993: 9).

The two arguments that emerge as dominant—overshadowing the rest or indirectly encompassing the rest within themselves—are the arguments concerning the 'numbers and necessity' and the 'economics'.

The study, reported in this chapter, was an attempt to see how well the open universities

in Asia have fared with respect to these two major factors favouring the popular appeal of distance education:

- accommodating social demand for higher education; and
- their cost-effectiveness.

This chapter is based on data collected from institutions in India, Indonesia, Pakistan, Sri Lanka and Thailand. Hong Kong has also been included as the Open Learning Institute (OLI) there presents a model different from those in the rest of the countries. The term 'open university' is taken to denote single-mode institutions offering education through correspondence and other delivery modes. However, as far as India is concerned a study of a limited number of dual mode institutions where we have correspondence courses within the jurisdiction and control of conventional universities has also been undertaken to study particularly their cost-effectiveness in relation to their counterpart conventional offerings within the same organisation. Except in the case of India, the study is limited to one open university in each country. As for India, the study covers one national open university and three of the five state open universities that have come into existence; the other two state open universities are yet to become functional. The data used for the study are upto 1993.

Objective

The study describes the aims and objectives of open universities and the variations in their size, organization, financing and programmes in selected Asian countries, and

- examines the characteristics of the social demand for open universities, i.e. who attends open universities; what programmes are apt for the system and why?—for example, what is the representation of
 - women,
 - students from rural areas,
 - social and economically disadvantaged groups, and
 - employed/mature students;
- analyses data on unit and programme costs at these institutions with a focus on sources of variation in component costs. Special attention is given to the determination of student fees and to remuneration of academic staff;
- examines the quality of courses and course material and who prepares them and how they are prepared;
- compares data on the internal efficiency of instruction at the institutional and programme levels, including costs per graduate, wastage rates, and average length of time needed to complete programmes of study;
- presents information on the quality of programmes offered as measured by pass rates and success in externally administered examinations, for professional certification and
- reviews studies of the external efficiency of open university programmes, i.e.

employment of graduates, impact of training of careers and job performance. Many open universities have focused on in-service teacher training, though other areas too have been covered.

The methodology

The study reviews the extensive secondary literature on open universities. Some of the most important sources, however, are project evaluations and reports to national and donor agencies that have been involved in the establishment of these universities or in financing their programmes. Examples include the recent USAID sponsored evaluation of in-service teacher training in Indonesia and Sri Lanka.

In order to obtain current information, individuals from institutions in the select Asian countries were contacted. The terms of the study were communicated to them and they were requested to participate as investigators in the project. A report on a fairly detailed study on cost analysis of IGNOU was also sent to them to provide a model for cost studies. Reports were received, in response, from Thailand, Sri Lanka, Pakistan and the open universities in India. But these initial reports fell short of our expectations. Most of the universities perhaps did not maintain the data to meet the requirements of the study. Even where information was available, it was not processed and made available in usable form and was also not readily accessible to the investigators for preparing the report.

The reports received were analysed and further information was sought. It was felt that a seminar inviting the authors of the reports might help improve the content and seek clarification on certain issues.

The seminar was held at the Anna University, Madras during December 22-24, 1992. Participants were provided with detailed guidelines on the topics they were expected to cover.

The seminar started with the presentation of the paper by Kulandai Swamy 'The New Patterns of Education: Distance Education'. This was followed by an overview of the papers to be presented and discussed at the seminar. Later, papers on different institutions were presented, and issues were discussed.

The institutions

Choice of institutions

The study was restricted, as stated earlier, to select countries—Thailand, Sri Lanka, India, Indonesia and Pakistan. In addition, Hong Kong has also been considered. Some of these countries have more than one open university/open learning institute of university-level education. For instance, in Thailand there are three institutions (UNESCO & NIME, 1992) that make use of distance education mode in one form or another.

- Sukhothai Thammathirat Open University

78 Education for knowledge era

- Ramkamhaeng University
- Centre for Educational Technology.

Sri Lanka has the National Institute of Education besides the Open University of Sri Lanka. In India, besides one National Open University (IGNOU), there were five state open universities, one each in the states of Andhra Pradesh, Maharashtra, Rajasthan, Bihar, Madhya Pradesh (subsequently, between 1993 and 2001 four more state open universities have been set up in Gujarat, West Bengal, Karnataka, and Uttar Pradesh). These are:

- Dr. B.R. Ambedkar Open University, Hyderabad
- Yashwantrao Chavan Maharashtra Open University, Nashik
- Kota Open University, Kota
- Nalanda Open University, Patna
- Madhya Pradesh Bhoj (Open) University, Bhopal
- Ambedkar Open University, Ahmedabad
- Netaji Subhash Open University, Kolkata
- Karnataka State Open University, Mysore
- Rajshree Tandon U.P. Open University.

In addition to these, there were more than 40 conventional universities and higher-level institutions which are offering correspondence education through their Directorates/Institutes of Correspondence/Distance Education. These dual mode institutions have been long in existence and account for a substantial portion of enrolment of distance learners in the country. (The number has since risen to 64.)

In Indonesia, there were six institutions offering university and sub-university level education (UNESCO & NIME 1992) using distance teaching mode.

- (i) Universitas Terbuka, Jakarta
- (ii) National Teachers Distance Education, upgrading Course Development, UN Bandung
- (iii) Centre for Educational Communication Technology, Ministry of Education, Jakarta
- (iv) Centre for Educational Training for Programme Personnel, National Family Coordinating Board, Jakarta
- (v) Indonesian Banking Development Institute, Bureau of Distance Learning Programme, Jakarta
- (vi) PERUMTEL Training Centre, Division of Distance Learning System, Bandung.

In Pakistan, no institution, except Allama Iqbal Open University, is known to offer open education at higher level.

As for Hong Kong, there were six institutions offering open higher education. The first of these is a single-mode institution and the rest are conventional institutions of regular face-to-face education offering distance education through their departments of continuing education:

- (i) Open Learning Institute, Hong Kong (renamed as Open University of Hong Kong)

- (ii) The School of Professional and Continuing Education, University of Hong Kong
- (iii) Extra Mural Studies Deptt., The Chinese University of Hong Kong
- (iv) The Continuing Education Deptt., Hong Kong Polytechnic
- (v) Centre for Continuing Education, City Polytechnic of Hong Kong
- (vi) School of Continuing Education, Baptist College, Hong Kong.

Additionally in the 1991-92 academic year, 34 overseas tertiary institutions were offering 59 programmes at undergraduate and postgraduate levels through 7 local tertiary institutions and colleges in Hong Kong (Dhanarajan, 1992: 4).

The growth of open learning being so prolific within each of these countries, a representative choice was imperative for any in-depth study of its working. Accordingly, one institution from each country (with the exception of India) was selected. The choice was restricted to single mode open learning institutions.

In the case of India, samples were taken from all the three categories of institutions.

- National Open University,
- State Open Universities, and
- Institutes of Correspondence Courses/Directorates of Distance Education.

Thus, the list of institutions studied included:

Thailand	:	Sukhothai Thammathirat Open University
Sri Lanka	:	Open University of Sri Lanka
Indonesia	:	Universitas Terbuka
Pakistan	:	Allama Iqbal Open University
India	:	(i) Indira Gandhi National Open University
		(ii) (a) Dr. B.R. Ambedkar Open University
		(b) Yashwantrao Chavan Maharashtra Open University
		(c) Kota Open University
		(iii) Select Institutes of Correspondence/Distance Education Courses

Introduction to institutions

We present a brief introduction to each of these institutions with some details of the size and nature of their operations in terms of objectives, enrolment, courses and programmes on offer, media in use, language of instruction, etc. We begin with a general introduction to each of these institutions followed by tabulated details of specific information. These information pertain to the year 1992 since the cost-effectiveness data, analysed in this study, also pertain to that year.

Sukhothai Thammathirat Open University (STOU)

STOU was established by a Royal Charter on September 5, 1978. It is a national, single mode distance education university and aims to give opportunities for people in all walks of life to enrich knowledge and improve professional competence. It had ten Schools in the following ten disciplines:

80 Education for knowledge era

- Liberal Arts
- Educational Studies
- Management Sciences
- Law
- Health Sciences
- Economics
- Home Economics
- Political Science
- Agricultural Extension
- Communication Arts.

In 1992, a School of Science and Technology was to be established.

Open University of Sri Lanka (OUSL)

OUSL came into existence in 1980 by a Parliamentary Act of 1978. The purpose envisaged in the Act was 'providing higher educational facilities to those who are not students of any other institutions'. The programmes of the University are designed to meet national education and training needs and to offer an opportunity to all people to have access to that extent and the kind of education which their development requires. The university had three faculties:

- Humanities and Social Sciences
- Engineering and Technology
- Natural Sciences.

Each of these faculties had five divisions. They offer education and training in the fields of Management, Education, Law, Science and Technology.

Universitas Terbuka (UT)

UT was established in September 1984 by a Presidential Decree as a national single mode distance education institution of higher learning. ('Universitas Terbuka', in the Indonesian language, means Open University). Its main purpose was to increase the absorbent capacity of higher education and to meet the need for university graduates for national development. It provides opportunity for higher secondary school graduates, fresh school leavers and unemployed as well as the employed, to obtain tertiary level education. It had four faculties:

- Faculty of Teacher Training and Education
- Faculty of Social and Political Sciences
- Faculty of Economics
- Faculty of Mathematics and Sciences

They offer programmes at Certificate, Diploma and Degree levels.

Allama Iqbal Open University (AIOU)

AIOU was established in June 1974 under an enactment of the National Assembly of

Pakistan. It was to provide part-time educational facilities through correspondence courses, materials, seminars, workshops, laboratories, television and radio broadcasts and other mass communication media. It was to cater to the educational and training needs of working adults, household women, in-service teachers and remote and physically-challenged people. It offers courses of an extremely wide range, from literacy to M.A and M.Phil The Primary Teachers' Orientation course is the largest of its several vocational programmes.

Indira Gandhi National Open University (IGNOU)

IGNOU came into being in 1985 at New Delhi by an Act of the Indian Parliament. Besides functioning as an Open University, IGNOU according to the Act, functions as an apex body promoting, coordinating and determining the standards of distance education systems in India. The open university function of IGNOU is carried out with the help of 15 Divisions and 9 Schools of Studies. For carrying out its role as an apex body a statutory authority called 'Distance Education Council' has been created.

The University has Schools of:

- Humanities
- Social Sciences
- Sciences
- Education
- Continuing Education
- Engineering and Technology
- Management Studies
- Health Services
- Computer and Information Sciences

Dr. B.R. Ambedkar Open University (BRAOU)

BRAOU, formerly known as Andhra Pradesh Open University, was established in August 1982 by an Act of the State Legislature of Andhra Pradesh. It was the first open university in India. It was expected to play a 'complementary role' in democratising higher education in the state by providing educational opportunities to the hitherto neglected sections. It was also to offer continuing education to the working population to upgrade their skills and knowledge. It offers undergraduate, postgraduate and research programmes.

Yashwantrao Chavan Maharashtra Open University (YCMOU)

YCMOU was established in July 1989 to serve the state of Maharashtra in the Union of India. It is to introduce and promote the open university and distance education systems to achieve decentralisation and reorganisation of university education in the state. Its programmes lay a major emphasis on vocational/technical courses. Most of the courses are offered in the regional language i.e., Marathi. English is used at higher levels and for courses in science and technology. The university is committed to becoming self-supporting in its operational cost.

Kota Open University (KOU)

KOU was established in July 1987 as a cost-effective alternative to the conventional system

of higher education and with the major objective of providing education to those who need it at their doors and thus avoiding overcrowd in the conventional system in urban areas. It offers programmes at the pre-degree, degree, postgraduate and research levels. It covers the descriptive areas of Arts, Commerce, Science, Journalism, Tourism and Hotel Management.

Correspondence Course Institutes (CCI's)

As for CCIs in India, there were then more than forty conventional universities offering correspondence courses to 454,000 students (Singh 1992), though in 2001 the number of institutions stands at 64. A few have carried out investigations and made cost analysis of some of the CCIs in the country. The studies that deserve mention are by: Vijay Mulay Committee (1978), Gupta (1986), Ansari (1992a), Singh (1992) and Datt (1993).

In this analysis, a detailed study of the CCIs is not contemplated. However, relevant information has been compiled for the current study. Eight of the CCIs had been taken up for cost-study by Ansari (1992): the CCIs of the Universities of Annamalai, Bombay, Madras, Delhi, Kerala, Mysore, Punjab and Utkal. These are major universities which are engaged in research and teaching through the traditional classroom method as well as distance mode, mainly correspondence, and account for about 50 percent of the total enrolment of distance learners in the country. They represent different Indian states which greatly differ in levels of educational development and socio-economic settings that are characteristic of Indian society and economy. They have been offering programmes at the undergraduate and the postgraduate levels in different disciplines.

Classified details about the institutions

Details of specific information concerning each of the open universities under this study are tabulated under the following heads:

• Objectives	(Table 6.1)
• Levels of programmes offered	(Table 6.2)
• Number of programmes and courses on offer	(Table 6.3)
• Staff position	(Table 6.4)
• Regional and Study Centres	(Table 6.5)
• Use of non-print media	(Table 6.6)
• Language(s) of Instruction	(Table 6.7)
• Number of candidates qualifying: year-wise	(Table 6.8)

The details of year-wise admission are discussed in the next section.

The social demands

Nature of demands

Social demands for education in a country may be recognised at two levels—the macro-level and the micro-level. At the macro-level the demands would relate to issues like:

Table 6.1 Institutions under study: Objectives

OU's	Educational			Developmental				Economic	
	Expansion/ equity/ equality of opportu- nities	Training/ staff dev./ vocational	Life- long edn.	Personal dev.	National edv.	Econ. dev.	Prom. or democ.	Pol. & econ. ideology	Cost effecti- veness
STOU	✓	✓	✓	✓	✓	✓	✓	✓	
OUSL	✓	✓	✓	✓	✓	✓			✓
UT	✓	✓	✓	✓	✓		✓		✓
AIOU	✓	✓	✓						
OLI	✓		✓			✓		✓	✓
IGNOU	✓	✓	✓	✓	✓		✓	✓	✓
BRAOU	✓	✓	✓	✓	✓		✓	✓	✓
YCMOU	✓	✓	✓	✓	✓	✓	✓	✓	✓
KOU	✓						✓	✓	✓

Notes: The identification of objectives is as used in the UNESCO & NIME study (1992). The objectives overlap one another and a clear distinction between the one and the other is rather difficult.

Source: (i) Information about STOU, OUSL, UT, AIOU, OLI and YCMOU is from the UNESCO & NIME study (1992).
(ii) Information about IGNOU, BRAOU and KOU is from the papers presented at the Madras seminar (1992).

Table 6.2 Institutions under study: Levels of programmes offered

OU's	Pre- degree	Dip.	Cert.	First- degree	Post- graduate	Continuing edu.	Community edu.	Research	
								M. Phil	Ph.D
STOU			✓	✓	✓				
OUSL	✓	✓	✓	✓	✓	✓	✓		
UT		✓	✓	✓	✓				
AIOU	✓	✓	✓	✓	✓			✓	
OLI	✓			✓	✓				
IGNOU	✓	✓	✓	✓	✓	✓			
BRAOU	✓	✓	✓	✓				✓	✓
YCMOU	✓	✓	✓	✓		✓	✓		
KOU	✓	✓	✓	✓	✓				

Source: (i) UNESCO & NIME (1992) for STOU, OUSL, UT, AIOU, OLI and YCMOU.
(ii) Papers presented at the Madras seminar for IGNOU, BRAOU and KOU.

- universalisation of education,
- equity and equality of opportunities, and
- life-long process of education (including continuing education for upgradation of knowledge, skill and technology)

These will be perceptible in the government policies, proclamations, election manifestoes

Table 6.3 Institutions under study: Number of programmes and courses offered

OUS	Programmes offered	Courses offered**
STOU (1991)	58	443
OUSL (1991)	16	372
UT (1991)	26	550
AIOU (1991)	20	260
OLI (1991)	18	38*
IGNOU (1993)	44	300
BRAOU (1992)	7	158
YCMOU (1990)	4	29
KOU (1992)	15	—

Source: (i) UNESCO & NIME (1992) for STOU, OUSL, UT, AIOU, OLI and YCMOU.
(ii) Prasad (1993) for BRAOU
(iii) Vice-Chancellor's Convocation Report (1993) for IGNOU
(iv) Papers presented at the Madras seminar in case of KOU.

*OLI courses are expected to grow up to 135 by 1995/96.

** Information about the number of courses is as given by the institutions. A course in one university may not be comparable to a course in another university in terms of content and number of credits assigned.

Table 6.4 Institutions under study: Staff employed

OUS	Full time	Part time*
STOU	1985	4000
	403 (A) + 1582 (O)	
OUSL	577	816
	245 (A) + 332 (O)	
UT	1398	350
	726 (A) + 672 (O)	
AIOU	1150	3000
IGNOU	1494	9000
	261 (A) + 1233 (O)	
BRAOU	488	3075
	89 (A) + 399 (O)	
YCMOU	223	11
	38 (A) + 185 (O)	
KOU	61	163
OLI	190	800

A = Academic Staff; O = Other Staff (Administrative, Technical/Professional Staff)

Source: (i) UNESCO & NIME (1992) for STOU, OUSL, UT, AIOU and OLI.

(ii) Personal correspondence (1993) in case of KOU, BRAOU and YCMOU

(iii) Official records (1993) in the case of IGNOU.

*part-time staff consist of academic counsellors and staff employed on a part-time basis in Laboratories, Studios and Study Centres. In the case of YCMOU, part-time staff consist of 1 coordinator and 10 Regional Directors.

Table 6.5 Institutions under study: Regional and study centres

OUS	Regional centres	Study centres
STOU	7	75 + 58 + 75
UT	32	110
AIOU	—	425
OLI	—	13
IGNOU	16	220
BRAOU	—	85**
YCMOU	7	94 + 21 + 17***
KOU	6	29

Source: (i) UNESCO & NIME (1992) except for IGNOU, BRAOU, YCMOU and KOU.

(ii) Vice-Chancellor's Convocation Report (1993) for IGNOU

(iii) Personal correspondence (1993) in case of BRAOU, YCMOU & KOU.

*STOU has 75 study centres, 58 'special study centres' and 75 'STOU Corners'; 'special study centres' are work-centres for professional/vocational training and 'STOU Corners' are spaces exclusively segregated for STOU materials in the public libraries.

**Of these 6 are exclusively for women and 2 for prison inmates.

***94 study centres, 21 'sub-study centres' and 17 'work centres'.

Table 6.6 Institutions under study: Use of non-print media

OUs	Audio	Video	Disc	Computer	Radio	TV	Satellite	Telephone
STOU	√	√		√	√	√		
OUSL	√	√		√				
UT	√	√		√	√	√	√	
AIOU	√	√		√	√	√	√	
IGNOU	√	√			√	√		
BRAOU	√	√			√			
YCMOU	√	√						
KOU	√	√			√	√		
OLI	√	√		√		√		√

Source: Dhanarajan et al., "Staff development for the application of interactive technologies in distance education—A feasibility study", *ICDE Bulletin*, Vol. 27, Sep. 1991, except for BRAOU, YCMOU & KOU, for which information was gathered through 'personal correspondence'.

Notes: (i) The above tabulation is based on the source cited. It is surmised that the use of computer as a medium is likely to be only in experimental stage in most of these universities.

(ii) Wherever TV and satellite are indicated, it is presumed that the telecast is made through satellite.

of political parties and perhaps through the sentiments voiced by responsible members of the public in the media and elsewhere.

The demands at the micro-level would relate to more immediately felt educational needs to achieve planned economic growth or targeted societal goals and would normally get reflected in the reports/surveys of manpower, plan documents, performance budgets and budget allocations.

Table 6.7 Institutions under study: Language(s) of instruction

OUs	English	Other languages
OUSL	√	Sinhalese, Tamil
UT		Indonesian
AIOU	√	Urdu
OLI	√	Chinese
IGNOU	√	Hindi
BRAOU	√	Telugu
YCMOU	√	Marathi
KOU	√	Hindi*
CCI's	√	Respective regional languages

*One or two programmes are offered in other Indian languages too.

Source: (i) UNESCO & NIME (1992) for STOU, OUSL, UT, YCMOU and OLI.

(ii) Papers presented at the Madras seminar for IGNOU, BRAOU, KOU & CCIs.

Table 6.8 Institutions under study: Number of candidates qualifying—yearwise

	STOU	OUSL	UT	AIOU	IGNOU	BRAOU
1982	9594	405	117			
1983	17237	1929		151		
1984	11487	909		121		
1985	11770	1650		780		
1986	13185	1654	8500	840		
1987	15021	840		1122		1494
1988	14812	1841	2385		960	
1989	13895	3470	1423		737	1170
1990			2215	1561	3807	2034
1991			1346		4907	3649
1992					4444	3330

Source: UNESCO & NIME 1992 except for BRAOU & IGNOU, for which the sources are Rao, 1992 & the Convocation Report of VC, IGNOU respectively.

Notes: (i) OLI and YCMOU were yet to produce any graduate (as in 1992).

(ii) Details were not available for KOU.

(iii) 8500 for UT is cumulative for 1985, 1986 and 1987.

While considerable differences can be expected in the demands at the micro-level from country to country, at the macro-level there is near consensus about the demands among the Asian countries. These are the same as identified at the beginning of this chapter. It will be appropriate to mention here that while the wording of the demands may be the same, the significance of each demand will vary from country to country. The universalisation of education for a country like India or Pakistan with a high percentage of illiteracy has different priorities in comparison to a highly literate city like Hong Kong. The kind of urgency and priority that equity demands in a country of vast disparities may not be echoed in a country where the spectrum of privileges is narrow and inequality is not exaggerated.

The mission of the OUs: Macro-level

General

The OUs under study have been mainly established with the mission of meeting the macro-level social demands—primarily the demands of the rising number of aspirants for higher learning which go hand-in-hand with the demands for equality of opportunities and the needs for continuing education. The brief statement of objectives and missions of each of the Open Universities that follows highlights this premise.

The Sukhothai Thammathirat Open University (STOU), Thailand

It was established in 1978 to provide the population with increased educational opportunities at the university level. The STOU's mission comprises the following:

- promotion of life-long education;
- improving the quality of life of the public in general;
- increasing the educational qualifications of working people, and
- expanding the educational opportunities for school-leavers. (It is said that only 6 percent of the rural agriculturists, who form about 80 percent of the country's population, manage to have access to higher education. STOU is to widen opportunities for these rural agriculturists.)

The Open University of Sri Lanka (OUSL)

It was established in 1980. Its objectives are to provide:

- educational facilities for those who cannot leave their jobs and homes;
- higher education to everyone (only 25 percent of school leavers in Sri Lanka are admitted to university education and it amounts to only 2 percent of the annual school admissions); and
- educational facilities to geographically isolated areas and life-long education.

The Open Learning Institute (OLI), Hong Kong

Established in 1989, its aim is to provide access to higher learning to all those who may have missed it or will be missing it in the conventional systems for one reason or another (only 11.3 percent of the 15 + age group have access to tertiary education). The conceptual design of the Open Learning Institute is of a large scale; it is expected to be a comprehensive alternative to institutional education at the school and technical/vocational training levels as well as higher education level. (The OLI has been renamed as the Open University of Hong Kong, SAR China.)

Universitas Terbuka (UT) of Indonesia

It was established in 1984 with three major missions:

- to increase access to higher education (as less than one third of the applicants only were accommodated by the existing Indonesian conventional universities);

88 Education for knowledge era

- to provide a second chance to higher education (as, on average, only 20 percent to 30 percent of high school graduates are accommodated by the campus universities); and
- to provide efficient upgrading programmes for Junior and Senior High School teachers (who were recruited on a large scale following rapid expansion of primary and secondary schools in the 70s and early 80s).

Dr. B.R. Ambedkar Open University (BRAOU), Andhra Pradesh (India)

Established in 1982, the objectives of the University, among others, are to:

- provide educational opportunities to those students who could not take advantage of institutions of higher learning; and
- realize equality of educational opportunities for large segments of the population who wish to upgrade their education.

The Indira Gandhi National Open University (IGNOU), India

It was established in 1985. Its major objectives are to:

- provide access to higher education for large segments of the population (It is worth recalling here that only about 7 percent of the age group is admitted to the conventional institutions of higher education);
- provide education in different branches of knowledge, technology, vocations and professions;
- strengthen and diversify the degree, diploma and certificate programmes in relation to the needs of employment and economic development of the country;
- promote opportunities for continuing education; and
- provide an innovative system of education which is flexible and open.

The Yashwantrao Chavan Maharashtra Open University (YCMOU), Maharashtra (India)

Established in 1989, YCMOU seeks to:

- make higher, vocational and technical education available to large sections of the population;
- give special attention to the needs of the disadvantaged groups;
- provide continuing adult and extension education, including retraining of adults in new skills; and
- provide an innovative, flexible and open education.

The Kota Open University (KOU), Rajasthan (India)

It was established in 1987 with the objective of providing education to those who need it at their doorsteps. It was intended to avoid overcrowding in the conventional higher education institutions in the urban areas and provide an opportunity for higher education to the rural aspirants.

The overall mission of all the above Asian open universities is more or less similar: widening access to higher education, equalization of educational opportunities, and promotion of life-long education. Indeed, the genesis of all Asian open universities is in the perception of the need to respond to an ever increasing social demand for the expansion of higher educational facilities.

Extent of macro-level demands met

In order to appreciate the manner in which and the extent to which the OUs in Asia under study have endeavoured to fulfil their commitment to the macro-level demands, it is necessary to study their performance along three lines:

- (i) the size and growth of enrolment;
- (ii) the nature and types of programmes offered;
- (iii) the characteristics of the learner groups catered to.

These data also pertain to the period upto the year 1992-93 to match the cost data so as to further study the cost effectiveness of the institutions.

The size and growth of enrolment

If the size and growth of enrolment can be taken as an indicator of accommodating social demand for higher education, the figures are very favourable. The figures pertaining to select OUs in Asia are given below year-wise (Tables 6.9 to 6.16):

The pattern of growth of the OUs in general, excepting STOU and UT, indicates a trend

Table 6.9 IGNOU: Admission of students

1986-87	4,381
1987-88	16,811
1988-89	42,324
1989-90	48,281
1990-91	52,376
1991-92	62,375
1992-93	75,666

Source: Vice-Chancellor's Convocation Report 1993

Table 6.10 YCMOU: Admission of students

1989-90	1,260
1990-91	9,566
1991-92	13,052
1992-93	15,276

Source: Takwale, 1992

Table 6.11 KOU: Admission of students

1987-88	14,278
1988-89	22,983
1989-90	14,389
1990-91	12,263

Source: Sharma, 1992

Table 6.12 BRAOU: Admission of students

1983-84	6,231
1984-85	11,244
1985-86	15,702
1986-87	19,271
1987-88	16,303
1988-89	16,827
1989-90	16,402
1990-91	27,446
1991-92	32,416

Source: Rao, 1992

Table 6.13 STOU: Admission of students

1980-81	82,139
1982	69,046
1983	46,900
1984	83,640
1985	79,990
1986	61,687
1987	48,500
1988	49,420
1989	52,831
1990	67,398
1991	80,000

Source: UNESCO: NIME, 1992

Table 6.14 OUSL: Admission of students

1982	2,360
1983	6,879
1984	5,873
1985	9,052
1986	10,063
1987	13,119
1988	13,197
1989	12,832
1990	14,407

Source: Ranasinghe, 1992

Table 6.15 UT: Admission of students

1984	85,329
1985	85,015
1986	19,655
1987	7,509
1988	9,041
1989	5,739
1990	37,151
1991	66,513

Source: Personal correspondence

- (i) Admissions were open thrice in 1986 and 1987 and twice in the remaining years. The figures represent the total in each year.
- (ii) For 1986 only two admission figures were made available out of three; similarly for 1989 only one figure was available out of two.

Table 6.16 OLI: Admission of students

1989-90	4,237
1990-91	13,009
1991-92	17,535

Source: Dhanarajan & Hope, 1992

of continuous growth. The decline at UT is described as part of the general trend of decline in enrolment for higher education in Indonesia during the period. The reasons attributed are:

- Senior Secondary School graduates, who form a considerable part of UT clientele are 'now more interested in short-term vocational courses which promise more immediate results'.
- Economic reasons prevent students from enrolling at UT.
- Prospective students are discouraged by the challenges of being a self-dependent learner.
- Changed system of registration, tutorials, exams, etc. confused the students leading to their dropping out (Rukhmat et al, 1988: 175).

The reasons attributed for the declining trend at STOU are:

- Mainly lack of confidence among the public—after initial enrolment—as to the possibility of getting a degree through distance mode of education.
- Poor economy may be the fact for the drop after the spurt in 1984. (The spurt was perhaps the consequence of the emergence of the first set of graduates).
- The demands of distance education system were new and unfamiliar to the prospective students (Sriprasart et al, 1988: 142)

Admission figures of select CCIs of India are given in Table 6.17. The trend in admission, despite more and more Conventional Universities (CUs) having put distance teaching units into operation, is seen rising in some CCIs, fluctuating in certain others and stable in the rest.

Table 6.17 CCIs: Admission of students

Year	Delhi	Bombay	Madras	Punjab	Annamalai
1975-76	13,722				
1976-77	13,477				
1977-78	13,302				
1978-79	11,133	12,054	10,011		
1979-80	8,355	4,585	9,101		
1980-81	4,482	5,280	9,460		
1981-82	4,759	6,698	9,150		
1982-83	9,822	7,448	20,584	8,741	25,397
1983-84	13,825	9,412	42,214	9,321	24,565
1984-85	18,250	12,302	67,968	7,775	30,420
1985-86	21,444	12,701	78,123	8,899	39,311
1987-88	22,478	15,148	92,737	8,783	41,554
1988-89	23,852		94,425	7,719	

Source: Extract from Datt, 1993: 172-73

Bombay, Madras and Annamalai show steady increase, while Punjab's admission figure is somewhat stable with minor upward or downward changes. The admission at Delhi kept declining up to 1981-82, but then started rising. What is interesting to note is the upward trend despite introduction of more CCIs over the years.

Considering the numbers that each institute seems to accommodate year after year, the admission figures are in no way small.

(ii) The nature and type of programmes offered

The programmes offered by OUs can be categorized along the following lines:

- programmes that have no comparable courses in conventional institutions (*non-conventional programmes*);
- programmes of specific job relevance/job-orientation (*job-oriented programmes*);
- programmes of specific social-welfare orientation (*welfare-oriented programmes*);
- programmes seeking to cater to the unfulfilled or newly developed aspirations which may or may not have any immediate job-relevance to the learners (*programmes of life-long education*);
- programmes seeking to update/upgrade the skills and qualifications of professionals and others with the focus set on an immediate job-related objective (*programmes of continuing education*);
- programmes on offer for wider options of those within conventional system (*open programmes for conventional students*).

A detailed study along the above lines would help us in assessing the attempt to meet the demands for: universalisation of education, equality in educational opportunities and provision of life-long education.

Table 6.18 on programmes offered by OUs in Asia gives a broad view of the types of programmes offered and thereby the kind of clientele catered to. However, the table does not give any clear idea of the extent of service within each category, either in terms of the number or range of programmes or in terms of the size of the beneficiary groups. Further work along this line may help in defining more precisely the extent to which OUs meet the different kinds of social demands for higher/continuing education.

Table 6.18 Institutions under study: Programme-types offered

OUs	Conven- tional	Non- conven- tional	Job Oriented	Welfare Oriented	Life-long Education	Continuing Education	Extended Open Education
IGNOU	*	*	*	*	*	*	*
BRAOU	*	*	*	*	*	*	
YCMOU	*	*	*	*	*	*	
KOU	*		*		*	*	
STOU	*	*	*	*	*	*	*
OUSL	*		*	*	*	*	
UT	*		*		*	*	
OLI	*		*		*	*	
CCIs (India)	*		*		*	*	

* = indicates offer of programmes

If people not catered to by the conventional universities are to be accommodated, OUs should offer conventional programmes also, irrespective of, whether such offers are supported by the assessment of national 'needs'. They ought to be offered to meet the social 'demands'. All OUs under study seem to give credence to this view—as they all offer conventional programmes besides others. Among other programmes, all OUs are seen, from the above table, offering programmes of job-oriented education, continuing education and life-long education—which again confirms the commitment to meet evolving social demands. Five OUs offer welfare-oriented programmes—programmes oriented towards social well-being. Only four offer the type of programmes which are not normally offered in the formal system. Two OUs permit simultaneous registration for open learning while continuing studies at formal institutions.

(iii) Characteristics of the learner groups

A study of the profile of learners along the following dimensions would help in assessing whether the OUs really reach the hitherto unreached and, thereby would provide a measure of the extent of accomplishing the objective of equitable opportunities in education:

- ratio of learners employed as against the total enrolment (Table 6.19);
- ratio of women learners as against the total enrolment (Table 6.20);
- age distribution of learners (Table 6.21);

Table 6.19 Institutions under study: Distribution of students by employment status (in percentage-1992)

OUs	Employed	Unemployed
IGNOU	52.67	47.33
YCMOU*	50.67	28.76
BRAOU**	28.18	71.82
KOU	n.a.	n.a.
STOU	91.4	8.6
OUSL***	80	20.0
UT	84.6	15.4
OLI (HK)	97.1	2.9

Source: Papers presented at the Madras seminar; n.a. = not available

*Distribution is worked out for the 1992 enrolment in the B.A/B.Com programme. 20.55% have not responded. Information gathered through personal correspondence with the Vice-Chancellor.

**Distribution worked out for B.A., B.Com. students of 1989-90. Those students formed about 80% of the total enrolment. For four of the remaining programmes employment was a necessary or preferable condition for admission. So it is presumed that the employed ratio will be slightly higher if the total enrolment is reckoned.

***More than 80% OUSL students are said to be "employed or adults" (forming non-traditional student group). Therefore it cannot be strictly considered as employed.

Table 6.20 Institutions under study: Distribution of students by gender (in percentage - 1992)

OUs	Male	Female
IGNOU	64.2	32.8*
YCMOU	74.5	25.5
BRAOU	67.0	33.0
KOU	n.a.	n.a.
STOU	50.0	50.0
OUSL	62.7**	37.30**
UT	78.0	22.0
AIOU	69.0	31.0
OLI (HK)	66.4	33.6

n.a.: not available

*The figure excludes the population of Management Programmes; if they are included, the distribution works out to 75:25. The participation of women in these programmes is low (to the tune of 5.89%) because one of the pre-requisites for registration in management programmes is that the applicant must have been in service for atleast three years in the capacity of a manager or supervisor. Women managers are still few as compared to men in India.

**Surprisingly the participation of women in management and entrepreneurship programmes of OUSL is to the tune of 23.47%. But participation of women in the Diploma and Bachelor Degree programmes in Technology works out to only 12.4%. Excluding these two programmes the distribution works out to 57.8: 42.2.

94 Education for knowledge era

- educational qualifications of learners at entry level (Table 6.22);
- ratio of learners who come from groups that may be considered socially, economically or otherwise disadvantaged in the country concerned (Table 6.23).

Table 6.21 Institutions under study: Distribution of students by age (in percentage - 1992)

OUs	<21 yrs	21-30 yrs	31-40 yrs	41-50 yrs	> 50 yrs
IGNOU	9.0	58.2	22.8	6.50	1.50
YCMOU	12.7	54.8	17.8	7.7	7.0
BRAOU	n.a.				
KOU	n.a.				
STOU	8.4 (< 23)	67.0 (23-30)	17.6	4.1	0.6
OUSL	1.4	45.5	31.6	18.1	2.7
UT	25.8 (< 26)	25.2 (26-30)	37.3	11.7	
OLI	8.6 (< 22)	54.7 (22-30)	32.1	3.3 (41-45)	1.2 (> 45)

Notes: (i) For BRAOU, the average age of students works out to 28 according to Prasad (1993: 73)
(ii) STOU Figures given pertain to 1985 (Ngam 1987: 360); 2.3 percent have not specified their age; average age of students (in 1990) is 26.7; medium age is 25.0 (Rojanasang 1992)
(iii) An updated 1993 distribution of the cumulative enrolment from 1989 to 1993 at YCMOU is: 11.44, 17.5, 14.6 with 7.5 percent not having responded.

Table 6.22 Institutions under study: Distribution of students by entry level educational qualification (in percentage-1991)

OUs	Degree and above	Diploma/Certificate	Hr. Sec.	Less than Secondary
IGNOU	34.8	←—————52.9—————→		12.3
BRAOU*		←—————25—————→		75
STOU	14.0	53.1	32.9	n.a.
OLI	5.2	29.9	59.5	5.4

*The admission in BRAOU is substantially in the bachelor's degree programme and the figures given pertain to this programme.

Source: Prasad (1993: 72) in the case of BRAOU, and papers presented at the Madras seminar for the rest.

Table 6.23 Institutions under study: Distribution of students by income (in percentage-1992)

OUs	Distribution of income		
	Top	Middle	Bottom
STOU	6	18	76
OLI	20	60	20
UT	—	39	61
AIOU	10	30	60
YCMOU	3	37.5	59.5

*The remaining 7 percent of students in the case of STOU and 14.5 percent in the case of YCMOU have not responded.

Source: Personal correspondence in the case of YCMOU, and UNESCO and NIME 1992 in the case of the rest.

The information collected is given in the form of tables that follow.

The percentage of employed students in the case of India ranges from 28.18 to 52.67 while the percentage in the other countries ranges from 75 to 97.1. The lesser percentage in India can be explained by the fact that the incidence of unemployment even among the educated is large, and most young people consider some additional higher educational qualification a desirable asset for employment in the competitive market. A large number of unemployed youth enroll in the open universities with this objective.

The fact displayed by the table is that a larger percentage of OU students are employed persons—persons who could otherwise not get an opportunity to improve their qualification or skill through formal institutions.

The female participation in the programmes of the OUs under study ranges from 22 to 50 percent, the participation ratio seems to be conditioned by the kind of programmes being offered and the pre-requisites for admission that go with them. At IGNOU the female participation is less in the management programmes (5.89 percent) because the conditions for admission stipulate that the applicants must be in employment holding at least three years of supervisory experience.

The female participation ratio compares well with, if not more favourably than, the corresponding ratio in the conventional system of education. In respect of India the female participation in the conventional system of education is worked out by the University Grants Commission as 31.6 percent while the corresponding figure in distance education is represented as 41.2 percent (Swamy, 1991).

The above age profile of OU learners shows very little participation from the less than 21 year old population. Thus a vast majority of learners are in the age group above 21—again an age-group for which conventional institutions of higher learning are normally out of reach. Hence here is another dimension of social demands from non-traditional student groups (higher age bracket) which is met by the OUs.

The distribution of students by entry-qualification shows a relatively high percentage of participation from graduate population at IGNOU, India. The reason here again could be the entry requirement made for its Management and other programmes. The University offers a few postgraduate diploma and degree programmes for some of which there is a popular demand as reflected in the enrolments. Corresponding information is not available for other universities.

Details of distribution of students by income are available in UNESCO and NIME 1992 survey for four institutions—STOU, OLI, UT and AIOU. Similar information compiled by YCMOU with respect to students (numbering 8284) enrolled in 1992 for B.A./B.Com programme is also available. The details are given in Table 6.23. The classification as Top, Middle and Bottom income groups is as specified in the UNESCO and NIME report, except in the case of YCMOU where the demarcation has been made as follows: Top—above Rs. 50,000 per annum, Middle—between Rs. 50,000 and Rs. 10,000, Bottom—below Rs. 10,000.

The table reveals that enrolment from the middle and the bottom groups is several times larger than enrolment from the top group. We could see a pattern emerging in the income based enrolment distribution, if we leave out the case of OLI where 97 percent of the students are employed persons (Ref. Table 6.19). The bottom group gets a larger representation than the middle and the middle a larger representation than the top.

Demands at the micro-level

The relation between the identified and quantified manpower needs and the programmes offered by the distance teaching institutions has not been discussed in detail. It would be worth the effort, if relevant information is obtained by the universities and shared so as to assess more accurately the immediate or short term social utility of the open learning institutions.

Spin-off benefits to the society

Besides the obvious relevance of the open universities in meeting the social demands at the macro and the micro-levels, the OUs have also been rendering certain significant—but less known or recognised—services to the society at large. In the process of universalizing or democratizing educational opportunities, they have thrown open wider access not only to those outside the purview of the conventional institutions but even to those within the conventional systems for wider options of elective courses through such memorandum of understanding for credit transfer as IGNOU has entered into with Pondicherry University. For instance, Pondicherry University offers a Master's degree programme in management studies; IGNOU also offers one. While the electives available in Pondicherry University are limited, IGNOU offers a number of Postgraduate Diploma Programmes in various specialized areas of management. The courses for these programmes have been prepared at considerable cost, utilizing the services of some of the best professionals and academics. The students of Pondicherry University, preparing for the MBA degree can take any of the relevant elective courses in IGNOU and claim from Pondicherry University recognition of the credits earned. By a simple provision, the students have been enabled to have access to a large number of courses developed by IGNOU. The same provision is available for all parallel or related programmes. The widening of options, that can be achieved at no extra cost, for a country of the size of India, through similar agreements, will make a remarkable contribution to the pressing educational needs of the society. The same agreement can also be extended to undergraduate and postgraduate programmes in affiliated colleges. Today, a Punjabi or a Bengali student enrolled at one of the affiliated colleges in Pondicherry University for a Bachelor's Degree Programme cannot hope to do Punjabi or Bengali as his/her option respectively under language. But he/she can take an IGNOU course in these languages and claim credit for it. Such facilities may be available in other countries too, but the details are not available.

The other two significant social contributions of the OUs are as follows:

- They have been gradually moving towards setting more widely applicable standards of education with their wider jurisdiction, expanded further through networks of larger scales of operation.
- When the book industry has grown prohibitively costly for the developing Asian nations, the OUs are rendering a yeoman service by providing a sort of 'Teach Yourself Textbooks' on a large number of topics at affordable prices.

Costing approach

The economics of education

The latter half of the twentieth century has been witness to a revolution, the consequences of which can only be dimly visualised even today. Science and Technology have set a new pace and pattern for life and work; knowledge is generated at a faster rate than ever before in human history; the spectrum of applications of the new knowledge is ever widening; and the communication technology has brought people worldwide closer together than ever before. We have been witness to some of the consequences of these developments—the disintegration of empires and power blocks; the rise and fall of economic and political doctrines and dogmas; and the very optimistic expectations about the emergence of new world orders yet undefined in many cases.

The post-war reconstruction of economies in America, Europe and Japan placed a higher emphasis on education in Science and Technology to promote research and development. The expansion of technical and professional education in these countries as against the traditional liberal arts education was phenomenal. The emergence of a new class of entrepreneurs and managers who were instrumental in accelerating the pace of economic development in these countries was a direct consequence of this change in the focus of higher education.

The emergence of a very large number of independent nation states, most of them acquiring freedom from their colonial masters, was another major development during this period. Each one of them was keen to establish a national identity, the major components of which included economic and political independence. Both required human resources; their attention inevitably turned to developing their own manpower through the setting up of institutions of education and training. 'Several countries have achieved rapid development in the post-war period; for the most part, they have two features in common. They invested in the education of men and women, and in physical capital' (*World Development Report 1991*: 31).

The classical view 'education for enlightenment' surely gave way to the new approach 'education for development'. That made education an economic activity; an investment in people. 'By improving people's ability to acquire and use information, education deepens their understanding of themselves and the world, enriches their minds by broadening their experiences, and improves the choices they make as consumers, producers and citizens. Education strengthens their ability to meet their wants and those of their family by increasing their productivity, and their potential to achieve a higher standard of living' (*World Development Report 1991*: 55-56).

The new approach 'education for development' has a sociological dimension too. Many of the newly independent countries, and some even in the developed world, had to encounter problems of equity, and of access to education. While in countries like the USA affirmative action by the state in favour of the less privileged tried to address these problems, in the developing countries, governments had to allocate substantial resources for the creation of education facilities to provide the necessary opportunities to ensure equity and access. The

significant growth and development of distance education has been a response to all these challenges.

Cost function: models

The economic interests, besides leading to significant developments in the concepts and delivery modes of higher education, led to a search for methods of assessing the cost-benefit (input-output) relationship in education. This, in turn, paved the way for developing several models to study and analyse the costs. Cost analysis essentially involves four major steps:

- (i) *Identification of inputs which generate costs.* From the purely economic point of view, there are no “free” resources. Where such resources seem to be available freely, someone bears the cost, and a notional value has to be assigned to those resources.
- (ii) *Distinguishing the operating costs (recurring annual costs) from the capital costs* (one-time investments that can be drawn upon over a number of years, and therefore can be assigned a derived annual value).
- (iii) *Separating the variable costs*, which fluctuate more or less proportionately with the number of students.
- (iv) *Analysing the cost function* to establish the relationship between the costs and the number of students, in terms of total costs, average costs and marginal costs.

Funding policy of governments in the domain of distance education varies from country to country. There is hardly any standard or universally accepted method of arriving at the per capita cost in distance education. Certain approaches have been developed by the academics for cost analysis. They are briefly discussed here to provide an introduction to cost analysis discussed later for various universities.

A simple equation which could be applied in any education system is:

$$TC = F + VN$$

where

TC = total cost

F = total fixed cost

V = variable cost per unit

N = number of units of output

(e.g. students/student hours, etc.)

The total cost function here is observed to be linear and the average cost (AC) is obtained simply by dividing the fixed cost (F) by the output (N) and adding it to the variable cost (V). Thus:

$$AC = F/N + V$$

To describe the fundamental cost-inducing variables in distance education, a modified form of the above equation was developed in the mid 1970s by the UK Open University.

This was based on two fundamental variables namely, the number of students and the number of courses under development and on offer:

$$C = a + bx + cy$$

where

C = total cost

a = the fixed cost

x = the number of courses (those under development weighted as 1.0 + those on offer weighted as 0.1*)

y = the number of students

b = the average cost per course

c = the average cost per student

For several years this equation was used as the basis for determining funds to be provided to the UK Open University. This approach was later taken up and modified by a number of other open universities. At Athabasca University, Snowden and Daniel developed a more sophisticated costing model (1980: 76-82):

$$TC = a_1x_1 + a_2x_2 + by + c$$

where

TC = total cost

x_1 = course credits 'in development'

x_2 = course credits 'in delivery'

y = 'weighted' course enrolments

and

a_1 = course development costs per credit

a_2 = course revision/maintenance/replacement costs per credit

b = 'delivery' costs per 'weighted' course enrolment

c = Institutional costs (overhead)

Another dimension in the development of models has been to identify the sub-components within the fixed costs and variable costs pertaining to the sub-systems of distance education system, namely:

Production system (p)

Instructional system (i)

Evaluation system (e)

Administrative system (a)

Applying these sub-systems to the fixed costs (F) and the variable costs (V), the simple equation

$$TC = TF + TV$$

*Different weights have been assigned, keeping in mind the cost for developing a course afresh and the cost for maintaining a course already on offer.

(Total cost = Total fixed cost + Total variable cost)

is expanded as

$$TC = (TF_p + TF_i + TF_e + TF_a) + (TV_p + TV_i + TV_e + TV_a)$$

where

TF_p = Total fixed cost for production

TF_i = Total fixed cost for instruction

TF_e = Total fixed cost for evaluation

TF_a = Total fixed cost for administration

and

TV_p = Total variable cost for production

TV_i = Total variable cost for instruction

TV_e = Total variable cost for evaluation

TV_a = Total variable cost for administration

A number of other models have been developed. These models appear to be simple, but fail to specify the cost-affecting variable in sufficient details to be of any practical help in cost justification or estimates. Nevertheless, these models are useful in as much as they give an insight into the cost structure.

Cost types

There are broadly five cost types (Birch and Cuthbert 1981):

- (i) Historical cost
- (ii) Replacement cost
- (iii) Standard cost
- (iv) Projected cost
- (v) Opportunity cost.

Historical cost is an attempt to summarize in monetary terms the extent to which an activity has consumed or appropriated resources.

Replacement cost refers to the cost that would be incurred to acquire equivalent physical facilities or to buy comparable materials or services to replace those obtained in the past.

Standard costs are predetermined costs to serve as a norm or basis for comparison with actual costs.

Projected costs are estimates of future costs.

Opportunity costs relate to foregone resources or revenue as a result of choosing one alternative in lieu of another.

Only the first of these five types of cost represents the actual cost—money's worth sacrificed—in performing an activity or acquiring an asset or receiving the goods and services. The rest depend, to a considerable extent, on hypotheses and assumptions. For purposes of a study of cost effectiveness, which *ipso facto* involves comparison of costs, we have to take recourse largely to the historical costs, the data for which can be had from

the financial records of the institutions concerned. Other costs—replacement, standard and projected—might help in consolidating the findings of comparison of the historical costs. Opportunity costs are too complex to determine and too hypothetical in nature to be of any substantial help in assessing cost effectiveness.

Costing terms

The components of cost, whatever be the method of costing, can be classified as *direct* and *indirect* for some purposes and as fixed and variable on certain other considerations.

Direct costs are those which are readily identifiable with a 'cost centre'. If the concern is to determine the cost of running an academic department within an institution, then, the academic and administrative staff working exclusively for the department have to be identified. There may be other staff responsible for maintaining the institutional administration, the accounts, the campus, the library and such other common facilities. The department concerned, though has some staff working exclusively for it, may still not be able to function, if the other staff looking after the general administration and common facilities are not there. In this instance, the academic department is the cost centre, the salaries paid for the staff exclusively working for the department are the direct costs and a rational proportion of the salaries paid to the other staff is the indirect cost of the department. The indirect costs are also referred to as 'overheads' and they are the costs which are not readily identifiable with a cost centre.

A rational process of determining the proportion of the indirect cost pertaining to a cost centre is known as *apportionment*. It is necessary to apportion indirect costs to a given cost centre. But there is no one correct method of doing it. All that could be said is that the apportionment should be governed by rational, equitable and practicable considerations. Different considerations/norms may be necessary for apportioning different costs.

A *variable cost* is that segment of the total cost which varies with the volume of output; the segment that remains constant irrespective of the volume of output is known as the *fixed cost*. The cost of preparing a unit of course material (writing, editing, revising, composing) remains fixed whatever be the number of students enrolled for it; but the production cost (printing, binding and distributing) varies with every change in the number of students enrolled. The former constitutes the fixed segment while the latter constitutes the variable segment of the total cost of course development.

Approaches to costing

Cost analyses may be done along several directions. But there are three basic approaches which are more commonly used in the context of costing education:

- Full (or absorption) costing
- Differential (or incremental) costing
- Standard costing

Full costing requires that all direct costs are allocated and indirect costs are apportioned to

the cost centres. They may be subsequently related to cost units—units of output or activity, such as per capita cost, cost per credit, cost per programme, etc.

Differential costing attempts to identify the change in costs resulting from an option of a different level of activity or mode of operation. Suppose an institution desires to change over from telecasting its video lessons to distributing video cassettes to students, differential costing approach will provide details of the change in costing that would follow.

Standard costing attempts to compare actual costs with predetermined (norm) costs. A significant variation, if noticed, may necessitate further investigation. The variation might be due to circumstances outside the control of management or within. If within, remedial measures may have to be devised.

Standard costing may be useful to check and keep the expenses of a school/division in an institution within targeted limits. Differential costing approach may be helpful whenever a change in the level of activity or mode of operations is contemplated. It may be relevant whenever questions of increase/decrease in enrolment, reduction/enlargement of option-range, launching/withdrawal of courses, etc. are planned or anticipated. The full costing approach is relevant to the purposes of reviewing/evaluating the cost performance or cost-effectiveness relationship.

A costing model of IGNOU

When a study of the cost analysis for IGNOU was taken up, it was realized that none of the theoretical models developed and available in the published documents are directly applicable. Taking into account the literature in the field, a method of approach was evolved by Pillai and Naidu (1991) to analyse the cost for 1989-90.

They set out on two purposes:

- (i) defining and analyzing the existing cost structure of IGNOU; and
- (ii) norm-setting for the future.

The pursuit of the former results in the identification of the major cost factors and disaggregation of the total costs of IGNOU in terms of cost components leading to the derivation of unit costs per measure of output. In pursuit of the latter, the authors have tried to develop, on the basis of the unit costs derived, 'productivity norms' for course development (in terms of time dimension) and 'cost norms' for different activities associated with production, delivery, etc.

In the study made by Pillai and Naidu, units for which the unit costs are to be determined are standardized at the outset. The course is identified as a unit. A student is identified as another unit. The unit of a course consists of 8 credits (240 hours of study) and a unit student is a 32 credit (960 hours of study) or equivalent student curriculum load. The authors then identified the major cost-heads. The cost heads are:

1. *Printed Materials cost:*
 - (a) Development phase
 - (i) the non-faculty cost

- (iv) the faculty cost
- (v) Production phase
 - (i) printing costs
 - (ii) distribution costs
- 2. *Audio Video Materials cost:*
 - (a) Development cost
 - (b) Diffusion cost
- 3. *Student Record Maintenance and Examination Processing cost*
- 4. *Admission costs*
- 5. *Student Counselling costs*
- 6. *Library and Documentation costs*
- 7. *General Administration costs*
- 8. *Common Services and General charges*
- 9. *Capital costs.*

Along with the identification of major cost-heads, significant cost elements under each head are listed out. While listing out the cost elements, wherever the actual value of a cost element is not directly available, the authors have explained how the value may be worked out or deduced from the available cost data.

Using the cost details collected for the cost elements and the cost head for the sample courses, average cost of an 8-credit course is computed for the development phase and the printing phase separately. Similarly the average cost for producing audio-video material for an 8-credit course is worked out. Adding these average costs, the total (average) fixed cost for an 8-credit course is worked out. The total cost is then annualised applying the annualisation factor $a(r,n)$ using the formula:

$$a(r, n) = \frac{r(1 + r)^n}{(1 + r)^n - 1}$$

where:

$a(r, n)$ = annualisation factor

r = interest rate

n = lifetime of the material

To work out per student unit cost, the annual enrolment of students in different programmes of varying credit values has been standardized by weighting the students on the basis of the credit values they had enrolled for. To determine the annual unit cost per student, the total revenue expenditure for the given year is broken up under a number of cost elements and regrouped under major cost-heads, relating to three categories—fixed, semi variable and variable. The annual unit costs are worked out for each of the cost elements and cost heads by dividing the revenue expenditure by the number of weighted student enrolment. Thus annual recurrent costs per student for semi variable, variable and indirect costs are obtained and the total annual recurrent cost per student is arrived at.

Applying a uniform credit rating for all programmes and applying the unit costs derived, costs in launching 8-credit courses, fixed costs for material preparation and programme

delivery costs have been determined. The cost function in launching a new programme is defined as:

$$CNP = bx + cxy$$

where:

CNP = cost of development and delivery of a new programme

x = number of 8-credit equivalent courses in a programme

y = number of weighted 8-credit equivalent students in a programme

b = cost of developing a new 8-credit course

c = cost of delivery of services to an 8-credit equivalent student.

In the whole costing exercise described above, the capital cost has not been taken into account. Depreciation of infrastructure facilities has also not been considered. Based on the approach outlined above, the per capita cost for selected programmes in IGNOU has been worked out in the next section. Per capita cost at other institutions given in the next section have not followed necessarily the same approach because of different cost orientation and/or non-availability of data along the suggested lines. The cost study of different institutions is discussed in the section that follows.

The investigators involved in the project were provided with the same method of costing, evolved in *Cost Analysis of Distance Education: IGNOU* (Pillai and Naidu, 1991) as described above. Cost analysis and norm-setting, if worked out realistically for different open learning institutions, could provide a sound basis for inter-institutional comparison of cost-performance. Moreover, a uniform approach in costing is desirable for any comparative study worth the effort.

Cost analysis

In this section, we present the details of cost study of the institutions identified for the purpose. We had eight investigators each dealing with one institution—leaving out OLI and AIOU. There could not be any participation from AIOU because of certain socio-political developments in that country. As for OLI we received a paper (Dhanarajan & Hope, 1992) and the accounts for the year ended March 1992. Among the studies reported by the investigators, two had very meager details on cost related heads—the one on KOU and the other on STOU. Thus we were left with six reports of cost studies. The substance of these reports is presented in the following sub-sections. For the remaining institutions we have presented whatever relevant cost information we could gather from secondary sources. The details on STOU have been supplemented by information from secondary sources. KOU has been left out for the following reasons:

- Information available on KOU is too little.
- Sufficient number of Indian institutions have already been represented.

A reference was made in an earlier section that cost analysis involves separation of the *operating costs* (recurrent annual costs) from the *capital costs* (investments in assets like

building, equipment etc., which can be used for a number of years). In our analysis, we have separated the operating cost, but have not taken into account the capital costs, and its amortized value. This was for the simple reason that many of the open universities studied were still to make substantial investments in the creation of their assets.

Similarly while computing unit costs, only institutional costs have been taken into account. Private costs, including opportunity costs, have been kept out of the purview of the study, except where the information could be collected through some secondary source of studies conducted earlier. The decision to keep the private costs out was taken considering the complexity involved in computing the private costs and the opportunity costs.

IGNOU study

Institutional average per capita cost

IGNOU has worked out the annual institutional average per capita cost and the annual cost per student for each of its programmes. The institution's annual average per capita cost has been worked out by dividing the total revenue cost by the number of weighted students registered in the year concerned. The total cost has been identified under three major heads:

- (i) cost of course development and production;
- (ii) cost of student support services; and
- (iii) cost of institutional overheads.

Each of the above cost components has been further divided into subheads to give a more detailed analysis of costs. The cost items thus identified under each cost component are given in Table 6.24.

Table 6.24 IGNOU: Cost components and cost items

Cost component	Cost items within
A. Course Development and Production	<ul style="list-style-type: none"> • Development of course materials • Production of print materials • Production of audio and video materials
B. Student Support Services	<ul style="list-style-type: none"> • Admission and student record maintenance • Student counselling/tutoring • Examination • Materials distribution
C. Institutional Overheads	<ul style="list-style-type: none"> • Library and documentation • General administration • Common services and general charges • Miscellaneous, including estate management

The above costs have been worked out for three consecutive years 1989-90, 1990-91 and 1991-92. The details are made available in three tables. Table 6.25 gives a snapshot picture of IGNOU cost structure for the years 1989-90, 1990-91 and 1991-92.

Table 6.25 IGNOU—Cost structure

(Rs. in millions)

Cost components	1989-90		1990-91		1991-92	
	Actual	% of Total	Actual	% of Total	Actual	% of Total
(i) Course Development and Production	34.01	40.53	43.68	38.81	66.21	42.98
(ii) Student Support Services	20.71	24.68	32.40	28.79	39.05	25.35
(iii) Institutional Overheads	29.20	34.79	36.47	32.40	48.77	31.67
Total	83.92	100	112.55	100	154.03	100

Table 6.26 presents component-wise average per capita cost for the three years 1989-90, 1990-91 and 1991-92:

Table 6.26 IGNOU: Annual average per capita cost

(Per Capital Cost in Rs.)

Cost components	1989-90	1990-91	1991-92
(i) Course Development and Production	709.33	656.72	879.43
(ii) Student Support Services	432.07	487.13	518.78
(iii) Institutional Overheads	609.01	548.30	647.73
Total	1750.41	1692.15	2045.94

A further analysis into the details of constituent cost-items of the components in the above table is made in Table 6.27 to give a detailed analysis of per capita annual recurrent costs.

Programme-wise annual per capita cost

Programme-wise annual cost per student has been derived from the above annual average cost per student. The process of this programme-wise deduction of cost has been complex because:

- the programmes offered by IGNOU are at various levels;
- there are significant cost factors responsible for variations in cost between one programme and the other;
- the cost factors as far as production of materials is concerned, are determined by the number of constituent courses of the programme, the level of offering, and the efforts involved in development and production; and
- the cost factors concerning delivery are governed by such components as laboratory practicals, student projects, etc.

Precise data are not available to assess the cost of each programme separately. Yet an effort

Table 6.27 IGNOU: Break up of annual per capita cost

S.No.	Cost item	Total cost (Rs. in millions)			Cost per student (Rs.)		
		1989-90	1990-91	1991-92	1989-90	1990-91	1991-92
1.	Development of Course Material	10.05 (11.97)	12.10 (10.75)	13.78 (8.94)	209.54	181.94	183.03
2.	Production of Print Material (23.76)	19.94 (25.5)	28.70 (30.91)	47.61	415.83	431.45	632.29
3.	Production of Audio & Video	4.03 (4.8)	2.88 (2.56)	4.83 (3.13)	83.96	43.33	64.11
	Total Development and Production of Material	34.01 (40.53)	43.68 (38.81)	66.21 (42.98)	709.33	656.72	879.43
4.	Admission & Student Record Maintenance	2.38 (2.83)	3.79 (3.37)	4.61 (2.99)	49.67	57.03	61.22
5.	Student Counselling	11.87 (14.14)	16.48 (14.64)	22.12 (14.36)	247.52	247.76	293.81
6.	Examination (4.89)	4.10 (4.88)	5.49 (5.08)	7.82	85.54	82.56	103.89
7.	Material Distribution	2.37 (2.82)	6.64 (5.9)	4.51 (2.92)	49.34	99.78	59.86
	Total Student Support Services (24.68)	20.71 (28.79)	32.40 (25.35)	39.06	432.07	487.13	518.78
8.	Library and Documentation (1.03)	0.87 (1.09)	1.23 (0.90)	1.39	18.13	18.51	18.52
9.	General Administration (6.14)	5.16 (4.95)	5.57 (4.05)	6.23	107.55	83.81	82.77
10.	Common Services & General Charges	16.34 (19.48)	21.03 (18.69)	30.24 (19.64)	340.91	316.22	401.71
11.	Miscellaneous, including Estate Management	6.83 (8.14)	8.63 (7.67)	10.9 (7.08)	142.42	129.76	144.73
12.	Total institutional overheads (34.79)	29.20 (32.40)	36.47 (31.67)	48.77	609.01	548.30	647.73
	Total Revenue Costs	83.92 (100.0)	112.55 (100.0)	154.03 (100.0)	1750.41	1692.15	2045.9

Note: Figures in parentheses denote % of costs to total revenue costs.

has been made to derive the programme costs on the basis of certain well defined parameters like the number of courses in a programme, the volume of materials produced, the number of study centres activated for the programme, etc., and applying them to the average costs. The cost of individual programmes so worked out is presented in Table 6.28.

BRAOU study

Expenditure and receipts

Among the OUs in India, BRAOU has the longest period of operation—10 years (as of 1992). The yearly budgets of the University for the past 10 years provide the details of expenditure and receipt under different heads. Applying the total strength every year,

Table 6.28 IGNOU: Programme-wise cost per student (in Rs.)

Sl.No.	Programme	1989-90	1990-91	1991-92
1.	Bachelor's Preparatory Programme	437.65	519.43	778.70
2.	Bachelor's Degree Programme	1842.18	1644.17	1996.96
3.	Bachelor of Library & Information Science	2315.35	2259.86	3117.51
4.	Management Programmes	1839.07	1702.20	1779.84
5.	Diploma in Distance Education	2059.25	3149.02	5671.59
6.	Diploma in Creative Writing in English	5189.95	7637.67	6247.14
7.	Diploma in Computers in Office Management	—	4459.40	4598.55
8.	Diploma in Rural Development	—	—	2301.86
9.	Diploma in Higher Education	—	—	3661.71
10.	Certificate in Food & Nutrition	767.86	731.18	779.82
	Average cost for all programmes	1750.41	1692.15	2045.94

Note: The programmes listed against Sl.No. 1 and 10 are for six months.

average expenditure per student, average fee receipts per student and average government grant per student are worked out yearwise for the ten years. The details are presented in Table 6.29 and 6.30.

Fee income vs. expenditure

The Table indicates that a major portion of expenditure is met by the student fee. Yearly averages over the ten years confirm this indication:

- Yearly average expenditure ('00,000 Rs.) = 291.70
- Yearly average fee receipts ('00,000 Rs.) = 226.60
- Yearly average Govt. grants ('00,000 Rs.) = 94.10
- Yearly average student strength = 37,400
- Yearly average expenditure per student (in Rs.) = 780
- Yearly average fee income per student (in Rs.) = 606
- Yearly average Govt. grants per student (in Rs.) = 251

The total yearly average income per student exceeds total yearly average expenditure by Rs. 77, because in the calculation here only recurrent costs are taken into consideration, leaving out fixed costs. The excess per capita income from the government source is for meeting the fixed cost requirements.

Detailed cost analysis

A detailed cost analysis for the three preceding years (1989-90, 1990-91, 1991-92) is carried out under three major heads of cost components—Course Development, Student Support Services and Institutional Overheads—which represent the fixed costs, variable costs and indirect costs respectively (Table 6.31). Each head has been further subdivided into a number of cost-items. From the details thus worked out, average per student cost under each of the three major heads has been calculated yearwise. By adding up the

Table 6.29 BRAOU: Annual income and expenditure (1983-84 to 1992-93)

Particulars	83-84	84-85	85-86	86-87	87-88	88-89	89-90	90-91	91-92	92-93
A. Income ('00,000 Rs.)										
(i) State Govt. Grants	—	107.00	150.00	52.50	75.13	70.39	125.64	95.40	118.00	146.80
(ii) UGC/IGNOU Grants	—	—	—	10.00	23.00	7.45	—	3.00	11.00	—
(iii) Fee Receipts	33.94	87.52	156.11	203.50	268.11	221.65	225.83	314.61	338.32	416.22
(iv) Other Misc. Receipts	—	5.92	6.45	12.29	17.44	3.78	5.72	15.08	8.49	10.53
Total Receipts	33.94	200.44	312.56	278.29	383.68	303.27	357.19	428.09	475.81	573.55
B. Expenditure ('00,000 Rs.)										
(i) Administration and Direction	12.82	61.98	69.21	83.84	79.09	134.06	136.21	111.00	156.74	125.33
(ii) Course Material	7.80	57.29	49.06	46.06	29.01	25.46	75.00	96.10	147.78	164.23
(iii) Audio-Video	—	15.19	26.81	26.46	10.29	12.78	4.75	3.09	7.00	16.14
(iv) Library	1.00	12.38	13.74	11.65	10.83	6.01	9.33	7.74	6.09	9.82
(v) Study Centres	10.68	16.66	30.69	56.21	46.31	66.61	55.34	105.60	116.24	154.10
(vi) Examination	1.67	9.81	14.80	31.04	28.42	42.68	39.65	50.15	66.15	84.84
Total Expenditure	33.97	173.31	204.31	255.31	203.95	287.60	320.27	373.68	500.97	563.46

Table 6.30 BRAOU: Average income, expenditure and government grant per student (1983-84 to 1992-93)

Particulars	83-84	84-85	85-86	86-87	87-88	88-89	89-90	90-91	91-92	92-93
Total Student Strength	6321	25485	34109	46629	36454	32957	34183	45041	52803	60000
Average expenditure per student (in Rs.)	537	680	599	547	560	972	937	830	947	939
Average fee receipt per student (in Rs.)	536	343	458	436	735	673	660	698	641	694
Average grant per student (in Rs.)	—	420	440	113	206	214	368	212	223	245

Table 6.31 BRAOU: Cost analysis for 1989-90, 1990-91, 1991-92

Sl.No.	Cost component	1989-90	1990-91	1991-92
Cost Component—1: Course Development (Fixed costs)				
1.	Writing and Editing ('00,000 Rs.)			
	• Salaries for internal Faculty teachers	22.75	24.93	31.14
	• Remuneration to external resource persons for course	4.87	0.70	1.50
	• Travelling expenses and other contingencies for course writers & editors	2.75	1.10	1.00
	Total	30.37	26.73	33.64
2.	Printing ('00,000 Rs.)			
	• Cost of paper	50.38	65.90	92.00
	• Printing	13.54	16.17	32.00
	Total	63.92	82.07	124.00
3.	Annualisation ('00,000 Rs.)	31.96	41.04	62.00
	Taking into consideration that the course material is printed for two years, the annualized printing costs per year			
4.	Total fixed costs (1 + 3) ('00,000 Rs.)	62.33	67.77	95.64
5.	Total number of students on rolls	34183	45041	52803
6.	Average fixed cost per student in Rs.	182	150	183
Cost Component—2: Student Support Services (Variable and semi-variable costs)				
1.	Expenditure ('00,000 Rs.)			
	• Study centres	55.34	105.58	116.24
	• Examinations	39.65	50.15	66.12
	• Printing (other than course material)	8.14	2.99	2.75
	• Evaluation Branch	3.00	2.11	2.20
	• Computer Centre	0.12	0.72	1.32
	Total	106.25	161.55	188.63
2.	Total number of students on rolls	34183	45041	52803
3.	Average variable cost per student in Rs.	311	359	357
Cost Component—3: Institutional Overheads (indirect costs)				
<i>(in Rupees)</i>				
1.	Expenditure ('00,000 Rs.)			
	• General Administration	66.54	81.47	118.61
	• Library	2.41	7.74	6.09
	Total		68.95	89.23
2.	Total number of students on rolls	34183	45041	52803
3.	Average indirect cost per student in Rs.	202	198	236

average cost per student under the three heads in a year, average unit cost per student per year has been calculated. The details of calculation are given below:

From the above cost analysis carried out under the three major heads, the institutional average unit cost per student is derived. The unit cost per student is given in Table 6.32.

Table 6.32 BRAOU: Unit cost per student

(in Rupees)

	1989-90	1990-91	1991-92
Average Course Development	182	150	183
Average Student Support Service	311	359	357
Average institutional overhead cost	202	198	236
Average unit cost per student per year	695	707	776

Projected cost of a BRAOU programme

Having made an ex-post cost analysis of the preceding years, an attempt has also been made to compute costs of an academic programme, given the operational factors governing an academic programme of BRAOU. Given below are the postulates, assumptions, and details of projected estimates.

An academic programme of one year duration leading to an award of degree or diploma consists of 6 to 8 courses. Each course is divided into blocks, and each block is subdivided into units. The programme costs are arrived at by assuming the following:

- The duration of the programme is one year.
- The academic programme consists of 8 courses.
- The expected student enrolment is 5000 in one year.
- The course material is printed for one year.
- The print material consists of 25 units; comes to 500 pages in double demi size.
- The number of counselling sessions will be 20 for one course.
- The programme is offered at 50 study centres.
- One internal faculty member will coordinate the course writing and it would take one year for the completion of course writing and printing.
- It would take Rs. 10,000 for production of one video lesson and Rs. 1000 for an audio/radio lesson.
- The audio-visual supplement consists of 2 audio lessons, 2 radio lessons and 2 video lessons for the course.
- Travel expenses are restricted to first class train fare only.

The projected costs per student per programme for BRAOU are given in Table 6.33.

YCMOU study

Cost components and cost centres

YCMOU is still at its formative stage. It is rather difficult, therefore, to find out realistic programme cost and unit cost. However, an attempt has been made to analyse the expenditure of the first three years to get some idea of the costs involved.

The cost components of revenue expenditure as envisaged by the university are classified into operational cost and development costs.

Table 6.33 BRAOU: Projected cost per student per programme

A.	Course Development:		
	(i) Expert Committee meetings for finalisation of syllabus and identifying course team	Rs.	20,000
	(ii) Course writing @ Rs. 1000 per unit and editing @ Rs. 10,000 for the course	Rs.	35,000
	(iii) 3 course team meetings consisting of editor and 5 writers @ Rs. 3000 per person on travel, stay and other incidentals	Rs.	54,000
	(iv) Salaries for internal faculty	Rs.	1,00,000
	(v) Typing, Xerox, Art work and other Miscellaneous expenditure	Rs.	10,000
	Total	Rs.	2,19,000
B.	Course Printing:		
	(i) Cost of 32 reams of paper @ Rs. 400 per ream	Rs.	1,28,000
	(ii) Composing charges @ Rs. 75 per page for 500 pages	Rs.	37,500
	(iii) Preparation of negatives @ Rs. 27 per page for 500 pages	Rs.	13,500
	(iv) Preparation of plates @ Rs. 96 per plate for 62.5 plates (with 8 pages per plate)	Rs.	6,000
	(v) Printing of 5000 copies @ Rs. 25 for 1000 for 62.5 plates	Rs.	7,820
	(vi) Binding charges @ Rs. 40 per 1000 of 16 pages lots	Rs.	6,250
	(vii) Front and back cover page printing @ Rs. 80/- per 1000 copies for 5000 × 2 copies	Rs.	800
	Total	Rs.	1,99,870
C.	Audio-Visual Support:		
	(i) Preparation of master copies of 2 audio, 2 radio and 2 video lessons per course	Rs.	24,000
	(ii) Duplication of 50 cassettes to be sent to 50 study centres where the course is offered	Rs.	10,000
	Total	Rs.	34,000
D.	Despatch of Course Material:		
	(i) Despatch of 5000 units of course material in two instalments @ Rs. 25/- per despatch	Rs.	2,50,000
E.	Face-to-face Counselling:		
	(i) Counselling at 50 study centres with 20 counselling sessions per course @ Rs. 70 per counselling session	Rs.	70,000
	(ii) Correction of 3 assignments per course @ Rs. 3/- per assignment for 5000 students	Rs.	4,50,000
	Total	Rs.	5,20,000
F.	Total Cost for 5000 Students (A + B + C + D + E)	Rs.	12,22,870
G.	Average Cost per student per course	Rs.	245
H.	Total cost per student for 8 courses	Rs.	1,960
I.	Average cost per student on student support services for one year programme based on 1991-92 average vide table 5.7 Cost Component 2	Rs.	357
J.	Average cost per student on indirect costs for one year programme based on 1991-92 averages vide Table 5.7 Cost Component 3	Rs.	28
K.	Total Cost per student for the entire programme (H + I + J)	Rs.	2,345

The *operational costs* include:

- Cost of producing study texts.
- Multi copying of audio/video tapes, floppies, experimental kits, etc.
- Cost of delivery including costs of such activities as publicity, registration, study centre organisation, counselling, formative, summative evaluation and certification.
- Cost of maintenance activities.
- Cost of infrastructural support.

The *developmental costs* include:

- Cost of planning for the programmes.
- Cost of development of programme design, infrastructural materials, feedback and reforms.

YCMOU has eight Divisions. The likely distribution ratio between developmental and operational costs for each of these divisions is expected to be as follows (Table 6.34):

Table 6.34 YCMOU: Expected distribution of developmental and operational costs

Division/Centre	Proportions of expenditure	
	Developmental cost %	Operational cost %
1. Academic Division	100	0
2. Academic Services Division (ASD)	100	0
3. Audio Visual Centre (AVC)	90	10
4. Print Production Centre (PPC)	0	100
5. Student Services Division (SSD)	0	100
6. Computer Centre	25	75
7. Library & Resource Centre (LARC)	100	0
8. Administrative Division	0	100

Annual per capita cost

The revenue-expenditure for the first three consecutive years is given in Table 6.35. The expenditure has been divided into four main stages of operation—i.e. development, production, delivery and infrastructure. The expenditure of various divisions is separated in the proportion mentioned in Table 6.35.

The year-wise total revenue expenditure is calculated (Table 6.36) and divided by the total number of students to give cost per student (Table 6.37). The effective student number is arrived at by applying 0.5 weight to students enrolled on short term courses. So, the student number is the number of students on year-long courses added to half the number of students on short-term courses.

The cost per student is around Rs. 2200 which is obviously high since the enrolment is quite low.

Projected cost per standard course

Initially, expenditure on various programmes and courses was not segregated. Further, the

Table 6.35 YCMOU: Revenue expenditure by divisions and stages of operations

(Rs. in lakhs)

Division	Development			Production			Delivery			Infrastructure		
	89-90	90-91	91-92	89-90	90-91	91-92	89-90	90-91	91-92	89-90	90-91	91-92
1. Academic	6.09	20.06	13.10	—	—	—	—	—	—	0.85	2.57	8.86
2. ASD	1.11	3.10	2.57	—	—	—	—	—	—	—	—	—
3. AVC	0.76	5.00	7.61	0.21	2.56	6.60	—	—	—	—	—	—
4. PPC	—	—	—	5.72	33.11	39.88	—	—	—	—	—	—
5. SSD	—	—	—	—	—	—	5.11	22.55	26.72	—	—	—
6. Computer & LARC	0.43	13.20	6.00	—	—	—	—	—	—	0.14	5.88	13.27
7. Administrative	—	—	—	—	—	—	—	—	—	10.43	22.25	67.80
Total	8.39	41.36	29.28	5.93	35.67	46.48	5.11	22.55	26.72	11.42	30.70	89.93

Table 6.36 YCMOU: Summary of revenue expenditure

(Rs. in lakhs)

Year	Development	Production	Delivery	Infrastructure	Total	No. of students
1989-90	08.39	05.93	05.11	11.42	30.85	620
1990-91	41.36	35.67	22.55	30.70	130.28	6111
1991-92	29.28	46.48	26.72	89.93	192.41	9552
Total	79.03	88.08	54.38	132.05	353.54	16283

Table 6.37 YCMOU: Annual average cost per student

(in Rs.)

Average annual cost per student	Development	Production	Delivery	Infrastructure	Total
1991-92	306.53	486.60	279.73	941.48	2214.34
%	(15.22)	(24.16)	(13.89)	(46.73)	(100.00)
Yearly average	485.35	540.93	333.96	810.98	2171.22
%	(22.35)	(24.91)	(15.38)	(37.36)	(100.00)

divisions were regrouped after the initial one and a half years. So, the divisional expenditure cannot be disaggregated programme/course-wise. This may be possible shortly when the computerisation of expenditure materializes: calculation of unit cost per programme/course may not be possible till then. Hence, an attempt has been made to estimate the likely cost of a course.

On the basis of costs incurred and the rates of honoraria, etc. paid by the university, the expenditure per student for one 8 credit course of BA/BCom programme has been projected in Table 6.38. The cost works out to be about Rs. 237. Infrastructure cost for administrative support is taken at 40 percent. On the basis of this estimate, the unit cost per student per year (32 credit points) will be about Rs. 950 and the entire programme cost of 12 courses to be completed in minimum three years will be Rs. 2850.

CCIs study

The CCIs function under dual mode universities, and these universities offer simultaneously both classroom teaching and correspondence courses. Hence, all through the cost calculation, a tendency to compare the two modes within each university is maintained. The income details of three such institutions have been collected in Table 6.39.

Per student cost is worked out in Table 6.40 for weighted enrolments. The weighted costs have been worked out by dividing the total expenditure by the weighted enrolment. The following weights have been assigned to different levels of programmes to reflect higher costs at successive higher levels:

Certificate	0.25
Diploma	0.5
Undergraduate	1

Table 6.38 YCMOU: Projected cost per student for an 8 credit course of B.A./B.Com

<p>(A) Development Cost: For 5000 students over three years</p> <p>(i) Meetings 3 @ Rs. 5000/- Rs. 15,000 Honorarium for members @Rs. 250/- per credit point \times 8 Rs. 18,000 Stationery, Postage, Contingency, etc. <u>Rs. 7,000</u> Rs. 40,000</p> <p>(ii) A.V. Materials 2 Videos at Rs. 10,000/- Rs. 20,000 4 Audios at Rs. 2,500/- Rs. 10,000 Rs. 30,000 Rs. 70,000</p>	<p>Per student cost</p> <p>Rs. 14 (5.9%)</p>
<p>(B) Production Cost:</p> <p>(i) Printing of Blocks Rs. 96 Per course 8 Books @ Rs. 12/- per Book</p> <p>(ii) Multicopying cost of A.V. Materials Rs. 4 for a batch of 50 students to be used over three years 4 Audio & 2 Videos @ Rs. 600/- per Set</p>	<p>Rs. 100 (42.00%)</p>
<p>(C) Delivery Cost: Per course per student</p> <p>(i) Postage (Rs. 0.2 per book) Rs. 1.60</p> <p>(ii) Study Centre Expenses—Counselling and Admn. Management Rs.27.40</p>	<p>Rs. 29 (12.1%)</p>
<p>(D) Infrastructure Cost: Administrative support expenses at 40% of the total expenditure Total per student cost</p>	<p>Rs. 94 (40%) Rs. 237 (100%)</p>

Postgraduate	1.7
M.Phil	2.2
Ph.D	2.8

The above weights have been assigned on subjective assessment of value attributed to knowledge at successive higher levels and the corresponding efforts to be put forth by the teaching institutions to cope with the needs.

OUSL study

OUSL offers courses of different credit-rating and the credit rating of a course has direct relation to the amount of study materials. Hence, student-credit (number of students enrolled on a course multiplied by the credit value of the course) is taken as the basic cost-centre.

Table 6.39 CCIs: Sources of income 1988-89

(Rs. in lakh)

Heads of income Universities		Grants (Govts.)	Fees			Other receipts	Total
			Tuition fees	Other than tuition fees	Sub-total		
1	2	3	4	5	6	7	8
Annamalai	CS	101.7 (29.8)	—	109.6 (32.3)	109.6 (32.3)	128.6 (37.9)	339.9 (100.0)
	DLS	—	425.0 (65.5)	85.6 (13.2)	510.6 (78.7)	138.0 (21.3)	648.6 (100.0)
Delhi	CS	1813.3 (89.1)	51.9 (2.6)	115.9 (5.7)	167.8 (8.3)	53.7 (2.6)	2034.8 (100.0)
	DLS	94.8 (46.9)	73.8 (36.6)	21.0 (10.4)	94.8 (47.0)	12.2 (6.1)	201.8 (100.0)
Mysore	CS	678.6 (89.5)	19.0 (2.5)	—	—	605 (8.0)	758.1 (100.0)
	DLS	—	110.3 (98.8)	—	110.3 (98.8)	1.3 (1.6)	111.6 (100.0)

Notes: Figures within parenthesis are the percentages to total.

CS—Conventional System

DLS—Distance Learning System

Table 6.40 CCIs: Institutional cost per student: 1988-89

Heads of exp./cost		Per student cost (weighted) (in Rs.)			Per student DLS as % of CS
Universities		Salary	Non-salary	Total	
1	2	3	4	5	6
Annamalai	CS	2498 (48.6)	2645 (51.4)	5143 (100.0)	
	DLS	103 (8.4)	1124 (91.6)	1227 (100.0)	23
Delhi	CS	5278 (69.1)	2359 (30.9)	7637 (100.0)	
	DLS	536 (62.4)	323 (37.6)	859 (100.0)	11
Mysore	CS	6683 (70.0)	2860 (30.0)	9543 (100.0)	
	DLS	996 (48.2)	1071 (51.8)	2067 (100.0)	22

Figures within parenthesis are the percentages to total.

CS—Conventional System, DLS—Distance Learning System

For the year 1990, the total student credits in the three faculties were as follows (Table 6.41):

Table 6.41 OUSL: Total student credits (1990)

Faculty of Engineering Technology	3994.50
Faculty of Natural Sciences	2027.75
Faculty of Humanities & Social Sciences	11880.06

To work out the cost per student for a given programme, the total faculty specific costs and the total non-faculty costs are identified for each faculty. The academic staff salary (faculty specific) in 1990 was as follows:

Table 6.42 OUSL: Academic staff salary (1990) (in million Sri Lankan Rs.)

Faculty of Engineering Technology	4.125
Faculty of Natural Sciences	3.606
Faculty of Humanities & Social Sciences	1.975

The overhead expenditure and the expenditure on student support services were distributed among the three faculties according to the number of student credits or courses. The production cost for books was distributed on the basis of the number of books produced for each faculty. Putting all these direct and indirect costs together, the total expenditure for the three faculties in 1990 were as shown in Table 6.43:

Table 6.43 OUSL: Faculty-wise total cost (1990) (in million Sri Lankan Rs.)

Faculty of Engineering Technology	11.925
Faculty of Natural Sciences	10.720
Faculty of Humanities and Social Sciences	15.698

As each faculty was offering varying number of programmes, the total faculty cost was distributed among the academic programmes of the faculty according to the ratio of student credits in each programme. From the cost thus computed, cost per student per year for each programme is determined (Table 6.44).

Table 6.44 OUSL: Programme-wise cost per student per year (1990) (in Sri Lankan Rs.)

Certificate in Pre-School Education	1223.16
Diploma in Management	3271.73
Diploma in Technology	7681.07
Bachelor in Law (LL.B.)	2914.49
Bachelor in Science (B.Sc.)	10985.70

Details of institutional overhead costs, total cost of student support services and the total cost of production of course materials are not available. Similarly, details of computation of cost per programme and the number of students or student-credits per programme are also not available. However details of average cost for producing one unit of printed course material, one unit of audio material and one unit of video material are given, each individually (Table 6.45).

UT study

Cost data

At the UT, 57.9 percent of the revenue comes from the government grants, while 42.1 percent comes from student fees and sale of material.

For computing unit costs, the following data are used:

- total costs for course development, course delivery and the overhead management;
- the number of credits offered; and
- the level of enrolment for each course for five consecutive years.

The total cost for the UT courses and programmes during the study period was 38.81 billions in Indonesian Rupiah (US \$ 20.98 million). The details are given in Table 6.46.

Unit costs

The cost per course was calculated on the basis of estimated total cost per credit for each type of UT course. The cost per student for each UT course is obtained by dividing the total cost by the number of students taking the course. Similarly the cost per credit is calculated by dividing the cost per student for each course by the credit load of the course. The total cost for the UT courses and the costs per student and per credit are given in Table 6.47.

The per student and the per credit costs vary considerably within and between the groups of courses. The variations in the cost per credit, though the allocation of money has been constant for each credit, are due to the differences in the enrolments.

Cost and fee ratio

Table 6.45 shows that the most expensive courses were those offered by the School of Mathematics and Physics; the least expensive were those by the School of Social and Political Sciences. The then existing tuition fee (which averages to 5000 Rp) is generally equal to the unit cost for the courses of the latter; it is about 50 percent of the cost per credit for economics, 9 percent for Maths and Physics and 10 percent for Education courses.

OLI study

A cost study of OLI as such was not taken up, hence some relevant pieces of information from Dhanarajan and Hope (1992) and 'the Accounts for the year ending 31 March 1992' are presented in this section.

Table 6.45 OUSL: Projected cost of producing print, video and audio material

Printing Costs of Course Material (Offset Printing)			
• Year	—	1991	
• No. of pages (per book)	—	100	
• No. of copies	—	500	
• Size	—	A4	
1. Material Charges			
A. Camera stage (charges for negative/postive)		Rs.	3713.00
Cost of making 100 positives			
Cover in one colour (Rs. 37.00 per page)			
B. Plate making charges		Rs.	5044.00
Text 13 forms (26 plates)			
C. Paper and Board cost		Rs.	4757.00
			+ 1250.00
D. Binding Material		Rs.	751.00
Total direct material cost		Rs.	15515.00
2. Labour cost		Rs.	4874.00
3. Indirect material cost		Rs.	863.00
4. Overheads cost		Rs.	4106.00
5. Other unaccountable charges and profit margin to the press		Rs.	5378.00
	Total cost	Rs.	30736.00
	Cost of a book	Rs.	61.47

Cost of producing one video programme of 30 minutes duration

Script development	Rs.	1000.00
Direction	Rs.	5600.00
Camera work	Rs.	750.00
Editing	Rs.	1250.00
Production—Co-ordination	Rs.	500.00
Graphics	Rs.	500.00
Post production activity	Rs.	250.00
Miscellaneous	Rs.	2500.00
Studio & Equipment (Studio, Camera, Editing, Lighting, Material, etc.)	Rs.	40000.00
Total	Rs.	52350.00

Cost of producing one audio programme of 30 minutes duration

Script development	Rs.	750.00
Recording supervision	Rs.	50.00
Editing	Rs.	125.00
Preparing of Master-tape	Rs.	250.00
Co-ordination of Production	Rs.	500.00
Post production activity	Rs.	250.00
Studio & Equipment	Rs.	1500.00
	Total	Rs. 3425.00

Table 6.46 UT cost data

(in Rupiah)

Unit of activity	Total cost for 1985-86—1989-90	%
Course development	8,480,978	21.85
Course delivery	16,341,553	42.11
Overhead management	13,987,386	36.04
Total	38,809,917	100

Source: Summarised from Musa, 1991

Table 6.47 UT: Estimated total cost for the UT courses and unit costs per student and per credit

(in Rupiah)

Course category	No. of courses		Credit	Total cost per course	Unit cost per student	Unit cost per credit
	Total	Average				
A. By Credit Load						
2 credit course	180	360	2.00	12,024,092	31,427	15,714
3 credit course	243	729	3.00	24,348,786	32,394	10,798
4 credit course	17	68	4.00	2,271,217	56,650	14,163
B. By Course Requirements						
Fundamental	12	25	2.08	835,006	4,396	2,113
Pre-core	65	189	2.91	6,312,648	16,954	5,826
Core & Support	364	948	2.60	31,663,442	51,309	19,734
C. By Field of Study						
Social & Political Science	85	242	2.85	8,082,862	14,114	4,952
Economics	74	221	2.97	7,381,456	34,496	11,615
Maths & Physics	63	190	3.02	6,346,049	139,596	46,224
Education	207	484	2.34	16,165,724	102,745	43,908
Total UT	441	1162	2.63	38,811,097	32,908	12,512

Source: Musa, 1991

Note: The figures have been reproduced as they were found in the source; we find the figures given against 'Total UT' do not tally with the 'total' of different categories of figures

The OLI was expected to be totally self-financing within a period of four years. With the target set thus, the government grant has been on the decrease over the years, with a corresponding increase in the tuition fees. The details of revenue are given in Table 6.48. The expenditure is accounted under the major heads—direct costs, staff costs and other costs. Per credit costs under these heads have been added up to get the total cost per credit (20 credits of OLI are equivalent 1 credit of UKOU; 40 credits are taken to be equivalent to the curriculum load of one year at the conventional institutions). The cost per credit

Table 6.48 OLI: Revenue

Sources	1991-92	1990-91	1989-90
(i) Tuition fees (in million HK \$)			
• School of Arts and Social Sciences	17.5	12.2	2.2
• School of Business and Administration	56.9	30.8	6.2
• School of Science and Technology	45.7	23.1	3.2
Total	120.1	66.1	11.6
(ii) Government grant (in million HK \$)	20.9	41.3	42.8
Percentage of govt. grant to total revenue	13.9	35.1	69.0

Source: Accounts for the year ending 31st March 1992, OLI.

details are given below in Table 6.49; followed by tuition fee per credit for purposes of comparison.

Table 6.49 OLI: Cost per credit/tuition fee per credit

(in HK \$)

	1991-92	1990-91	1989-90
Direct cost per credit	221	229	304
Staff cost per credit	220	275	598
Other costs (rent, etc.) per credit	62	99	441
Cost of producing one credit	503	603	1,343
Tuition fee per credit	450	380	330

Cost efficiency/effectiveness rates, reproduced below, have been worked out by Dhanarajan and Hope (1992: 18) (Table 6.50).

Table 6.50 OLI: Cost efficiency/effectiveness rates

	1991-92	1990-91	Oct. 1989
FTE academic staff to FTE students*	1:63	1:56	1:27
Administrative cost to Academic cost	1:1.47	1:1.25	1:0.8
All staff costs to Fee income	1:1.99	1:1.43	1:0.8

*Academic staff calculated as full-time staff plus part-time tutor cost at mid-point of the lecturer scale.

Source: Dhanarajan and Hope, 1992.

STOU study

For STOU, no cost details could be obtained. The funding details given below have been collected from secondary sources, mainly from Chaya-Ngam (1993).

Total expenses

The total expenses of STOU in 1992 amounted to 645,544,100 Bahts. A breakup of this total expense against different expense types is tabled below (Table 6.51).

Table 6.51 STOU: Total expenses (1992)

		(in Bahts)
Expense types		Expense
(i) Salaries and wages		150225800
(ii) Remunerations, expenditures materials, utilities and others		407232400
(iii) Equipment, land and construction		70210400
(iv) Central fund		17875500
Total		645544100

Source: Chaya-Ngam, 1993.

The expense types listed are primary types, and the figures are approximate. The first type includes salaries and wages of employees, a majority of whom receive the full salary and benefit packages as fixed for the government employees. The second category includes payment for a wide variety of services (such as course-writing, assessing exam scripts, seminar-teaching, overtime wages/fees, transportation and accommodation expenses, etc.); and payment for consumable materials and utilities such as electricity, water, telephone, mailing. The third category includes audio-visual equipment, printing equipment, office equipment, etc. The fourth category represents a monetary sum over and above income allocated to the other three divisions.

Government funding

STOU's primary source of income is the Thai Government. It received 136 million Bahts in 1992. Though this amount looks substantial, compared to budget allocation made to other universities/ institutes in Thailand, it is the second lowest. This has to be viewed in the light of the fact that "STOU's student enrolment represents nearly the highest enrolment of any higher education institution in Thailand".

The annual government allocation is again meagre when viewed against the annual expenses: the government allocation for 1992 was just 21.12 percent of the STOU's total expenses for the year, i.e. 646 million Bahts. The percentage has grown marginally over the years as shown in Table 6.52.

The government budgetary allocation to STOU is earmarked for only certain items on STOU's list of expenses. Out of the total allocation of 136 million Bahts for 1992, a major chunk, i.e. 103 million Bahts (75 percent) was meant for the expenses under the head 'salaries and wages'; the remaining was distributed to select items under other heads. STOU had to self-support to the tune of 47.5 million Bahts for salaries and wages (about 31.62 percent of the total expenses under this head). The government contribution to expenses on air time was 0.02 percent and to audio visual supplies was 0.09 percent. Its

Table 6.52 STOU: Total yearly expenses \times annual government allocation*(in Bahts)*

Budget year	STOU total expenses	Govt. allocation	%
1989	579,691,376	84,116,700	14.51
1990	469,470,558	94,635,600	20.15
1991	605,305,997	118,229,100	19.53
1992	645,544,100	136,258,300	21.12

Source: Chaya-Ngam (1993).

contribution to expenses on printing, supplies, course writers and tutors was nil. Thus, the funding from the government is very limited.

Revenue from students

The other major source of funds for STOU is the revenue from students. For a two year degree programme a student has to pay about 5,600 Bahts, which is “admittedly low by any standard”. The size of annual revenue received from students is given in Table 6.53.

Table 6.53 STOU: Revenue received from students
(in million Bahts)

Year	Total revenue
1989	279.5
1990	272.6
1991	318.4
1992	319.4

Source: Chaya-Ngam (1993).

Besides, STOU has other resources such as supplementary revenue, land donations and financial grants to supplement the limited government contribution.

As for cost-study, as no current information could be obtained, we present below some relevant information pertaining to 1982 published in 1987.

Operating cost per head by institution

The National Education Commission of Thailand conducted a study on operating and capital costs of government universities and private colleges in 1982. A comparison of operating costs per head of government universities with that of STOU is provided in Table 6.54. The operating cost per head at STOU is 2,341 Baht.

Operating cost per graduate

The National Education Commission (1982) has also compared the operating cost per graduate at STOU with the corresponding cost at other institutions. It has been assumed that the success rate at STOU is 50 percent of the cohort. The comparison is made in Table 6.55; STOU per graduate cost is fixed as 7,023 Baht.

Table 6.54 STOU: Operating cost per head as percentage of cost per head of other universities, 1982

(in Bahts)

Institution	Per head in other universities	STOU per head (2,341) as % to other universities
Khon Kaen	49,635	4.72
Chiang Mai	40,210	5.82
Prince of Songkhla	37,244	6.29
Kasetsart	24,683	9.48
Chulalongkorn	46,089	5.08
Thammasat	11,463	20.42
Mahidol	120,730	1.94
Srinakarinwirot, Prasarn Mit.	25,999	9.00
Silpakorn	27,394	8.55
King Mongkut's Institute of Technology	27,230	8.60

Source: Quotes in Srisa-an 1987: 524

Table 6.55 STOU: Operating cost per graduate as percentage of cost per graduate in other universities, 1982

(in Bahts)

Institution	Per graduate cost in other universities	STOU per graduate cost as % to other universities
Khon Kaen	61,276	11.46
Chiang Mai	46,186	15.21
Prince of Songkhla	46,791	15.01
Kasetsart	31,490	22.30
Chulalongkorn	53,532	13.12
Thammasat	12,790	54.91
Mahidol	145,064	4.84
Srinakarinwirot, Prasarn Mit.	30,756	22.83
Silpakorn	33,686	20.85
King Mongkut's Institute of Technology	38,000	18.48

Source: Quotes in Srisa-an 1987: 525

AIOU study

No current cost study report could be obtained on AIOU and we had to depend on whatever information was available through secondary sources.

Siddiqui (1987) refers to two UK Overseas Development Administration (ODA) sponsored studies undertaken in January/February 1979 and March 1983. The former was conducted by an Evaluation Mission in connection with the phasing of further assistance to the AIOU. Considering the amortization of capital costs, salaries and other recurrent expenditure together with student numbers, the Mission felt that "the AIOU would progressively show considerable cost advantages over other conventional institutions" (ibid: 218).

The ODA team, according to the country paper summaries presented in *Distance Education*

in South Asia (1989), 'demonstrated that the cost of a graduate at a conventional university was Rs. 18,850 compared to the cost of a graduate at AIOU which was in the range of Rs. 8,670—Rs. 12,000'. But about 35 percent of AIOU cost mentioned above is met by the student fees. If this factor is taken into consideration 'the net cost of a graduate at AIOU is in the range of Rs. 5,680—Rs. 8,500 which is between 30 percent and 45 percent of the cost in the conventional system' (ibid: 144).

The second study referred to by Siddiqui is a Review of the University taken up jointly by the Government of Pakistan and the ODA. The study concluded that the AIOU could provide graduate-level education more cheaply than conventional universities in Pakistan, provided that enrolments were sufficiently high. Siddiqui observes that both the assessments were proved by subsequent analyses 'which have indicated that with an enrolment of 5000, average student costs are approximately 30 per cent of the cost of educating a graduate at a conventional university' (Siddiqui, 1987: 220).

Cost effectiveness

Effectiveness and efficiency

Studies of cost effectiveness and cost efficiency are concerned with the relationship between the achievement of objectives and the cost involved in achieving them.

An organisation is effective, if it achieves its objectives; it is efficient, if it achieves the objectives with optimum use of resources. While effectiveness depends on the quality and quantity of the output, efficiency is determined on the basis of the consumption of resources in achieving the given quality and quantity of output (Rumble, 1986: 69-70).

It is difficult to make conclusive statements about cost effectiveness or cost efficiency, as neither of the two factors involved—i.e. achievement of educational objectives and the cost of education—can be measured precisely. 'Educational aims and objectives are often open ended, benefits are invariably unquantifiable and the relationship between inputs and outputs is unknown'. Consequently 'questions about the effectiveness and efficiency of education can only ever be answered tentatively' (Birch & Cuthbert, 1981: 13).

Measures of effectiveness that we need to use for OUs obviously have to correspond with the rationale that we identified in the introductory section of this chapter.

- (i) Numbers and necessity argument
- (ii) Egalitarian argument
- (iii) Economic argument
- (iv) Quality of education argument
- (v) Continuing education argument
- (vi) Spin-off benefits arguments

The OUs under study can be said to be effective to the extent that their performance

indicators answer each of these arguments in favour of their establishment. The section captioned 'The Social Demands' discussed the enrolment and the types of programmes offered which reflects the performance of OUs against the parameter of numbers and necessity. The discussion on the profile of learners was an attempt to check the extent to which the OUs meet the egalitarian demand and the demands for life-long or continuing education*. The range and kind of spin-off benefits they provide were also discussed there.

We shall examine the following two aspects in this section:

- (i) the cost advantages supporting the economic argument; and
- (ii) the quality of education offered by the OUs in terms of success rates, benefits to learners and social acceptance.

Cost advantage

Any assessment of cost becomes meaningful only by a comparative assessment of advantage in relation to the cost incurred by an alternative means to achieve the same objective. So, a comparison of 'the like with the like' is necessary to make any cost study worth its effort.

One measure of cost effectiveness that is meaningful in the present study is a comparison of the costs for a given programme in the open universities with the corresponding programme in the conventional system. Identical programmes in both the systems with scope for one to one comparison are not many. The conventional universities again have not maintained records in such a manner as to facilitate disaggregation of cost per individual for each programme. There are many common items of expenditure in the institutions of conventional system which cannot be easily apportioned to individual programmes and much less to individual courses.

Notwithstanding the above limitations, an attempt has been made (Pillai, 1992) to compare the cost of Bachelor's Degree programme offered by IGNOU with similar programmes offered by colleges affiliated to different universities in India. There were then about 7400 such colleges in the country. Data from about 80 colleges distributed in different parts of the country, spread over six states, were collected and analysed. The per student unit cost for the year 1989-90 (up to which the data were available) was worked out. The details are given in Table 6.56.

The unit cost for the year 1989-90 was converted at current prices to estimate the annual costs for the year 1990-91 and 1991-92 for the purpose of comparison with the costs of IGNOU. The position is presented in Table 6.57.

The YCMOU has worked out the average cost per student per year (for 1991-92) as 2214.35. By another calculation assuming 5000 students on roll, the expenditure per student for one 8 credit course of B.A/B.Com programme is worked out as Rs. 237. On the basis of this estimate, the unit cost per student per year works out to Rs. 948. The difference

*The range and size of unconventional learners who would have otherwise remained outside the ambit of formal education (and the conventional type learners benefited by the OUs as well) is a measure of fulfillment of the demand for equity and equality of educational opportunities. Their range and size reflect the demands for continuing/life-long education too.

Table 6.56 Annual Revenue expenditure of colleges (in India) offering Bachelor's Degree Programmes*Per Capita Cost in Rs.*

Sl.No.	State	No. of colleges	No. of students	Per student cost
1.	Jammu & Kashmir	16	12,976	4,235
2.	Madhya Pradesh	12	16,262	2,462
3.	Orissa	7	9,495	4,424
4.	Goa	5	3,709	2,307
5.	Pondicherry	5	3,394	8,206
6.	Tamil Nadu	34	29,542	4,718
Average (all states)				4141

Source: Pillai (1992)**Table 6.57** IGNOU: Comparison of annual cost of Bachelor's Degree Programmes of IGNOU and select colleges*Per Capita Cost in Rs.*

Year	IGNOU	Select colleges
1989-90	1842	4141
1990-91	1644	4762
1991-92	1997	5476

Source: Pillai (1992)

between the estimate (Rs. 948) and the ex-post computation of average cost per student per year for 1991-92 (Rs. 2214) is too large to accept the estimate. Since about 77 percent of the enrolment for the year 1991-92 is for the B.A/B.Com programme, we are inclined to take the average cost per student per year for 1991-92 as the approximate annual cost for a B.A/B.Com student. The actual cost may come down considerably, if the enrolment increases.

The per capita cost of Bachelor's degree students of BRAOU was calculated as Rs. 777 for the year 1991-92.

The per student annual cost at the colleges and the corresponding costs at IGNOU, YCMOU and BRAOU are tabulated in Table 6.58. Ignoring the shortcomings, the study still gives a definite picture of economy in per capita expenditure that is made possible in distance education.

Table 6.58 Comparison of annual average cost per student (Degree/Diploma programmes, 1991-92) and select colleges*Annual per student Cost in Rs.*

OUs	Cost for OUs	Cost for select colleges	OU cost as % to select colleges
IGNOU	1997	5476	36.5
BRAOU	777	5476	14.2
YCMOU	2214	5476	40.4

The size of enrolment and the limited number of courses/options on offer at BRAOU for the Bachelor's degree programme seem to keep the per capita cost low.

As for the CCIs, Datt (1993) made an exercise to compare the per student cost in the School of Correspondence Courses & Continuing Education (SCC&CE), University of Delhi, with corresponding cost at 12 of the then 53 colleges affiliated to Delhi University. The sample comprises colleges with different enrolment levels to make it representative of the wide spectrum of enrolment range.

The cost per student for these colleges was computed for three consecutive years—1985-86, 1986-87 and 1987-88. The cost was converted into cost per student at 1987-88 prices and the average annual cost per student was worked out. The results of this exercise are given in Table 6.59.

Table 6.59 Average enrolment and cost per student for Delhi colleges

Sl.No.	Colleges	Average enrolment for 1985-86 to 1987-88	Average cost per student for 1985-86 to 1986-87
1.	St. Stephen's College	987	5,814
2.	Miranda House	2,105	5,364
3.	K.M. College	2,087	4,710
4.	I.P. College	1,833	4,952
5.	Zakir Hussain College	2,030	4,601
6.	SGTB Khalsa College	2,239	4,213
7.	Vivekananda Mahila College	1,147	4,211
8.	Swami Shradhananda College	2,023	3,489
9.	Satyawati College (M)*	1,636	3,750
10.	Zakir Hussain College (E)**	1,326	3,466
11.	SGTB Khalsa College (E)	1,325	2,746
12.	Satyawati College (E)	1,057	2,569
Total		—	49,785
Average		—	4,157

Source: Datt (1993) *Morning **Evening

The average of 12 colleges reveal that cost per student in regular colleges of Delhi University was Rs. 4157. A similar exercise was undertaken to determine the average annual cost per student at the SCC & CE for the three year period—1986-87, 1987-88 and 1988-89. The results are given in Table 6.60.

The two tables reveal that as against the annual average cost per student (Rs. 611) of SCC&CE, the corresponding cost at the regular colleges is Rs. 4157. The SCC&CE cost works out to be 14.7 percent of the cost of conventional education. The results of Ansari's study have been reported in the preceding section. The three CCIs which have been represented show their per capita cost as ranging from 11 percent to 23 percent of the per capita cost of the conventional system.

While studying the cost of CCIs, one needs to take into account certain cost determining factors. The CCIs function as subordinate units of the conventional universities to which they belong, and they follow mostly the very same courses (by and large of Arts, Humanities and Social Sciences, barring a few exceptions) offered by the parent organisations. As

Table 6.60 CCIs: Enrolment and cost per student for different courses in the School of Correspondence Courses, Delhi University (1986-87—1988-89)

(in Rs.)

Course offered	Total number of students	Weighted average cost per student*
B.A. (Pass)	51,046	544.82
B.Com. (Pass)	24,607	550.84
B.Com. (Honours)	3,098	856.16
B.A. (Honours)	208	1,067.98
M.A. Hindi	1,642	1,277.00
M.A. Political Science	887	1,399.16
M.A. History	226	2,403.71
M.A. Sanskrit	337	2,310.76
M.Com.	2,023	1,222.33
Total	84,074	611.05

Source: Datt (1993) *at 1987-88 prices

such, they do not generally have to incur any expenditure by way of designing courses; the preparation of courses itself does not cost much for the very same reason. Moreover, the student support services and the use of technology for course delivery are also kept at a low profile. Short intensive contact-sessions are held by some CCIs once or twice a year, and some CCIs use radio broadcasts made available free of cost. Their instructional packages do not consist of audio/video cassettes. Study centres for student contact are too few in number and are run only by a few of the CCIs. Besides, the CCIs have large enrolments and less number of courses. Because of these factors the costs of CCIs are bound to be lower than the costs of conventional universities and, even lower than the costs of open universities.

In Indonesia, the Centre for Research and Community Service at the UT conducted a comparative cost study in collaboration with the Institute for International Research (IIR). It compared the cost effectiveness of the UT's D₂ Mathematics and D₂ Bahasa Indonesia Programmes with those provided by four IKIPs (campus based post secondary Teacher Training Colleges) and two FKIPs (Schools of Education within the conventional university system). Both institutional and individual costs relating to the academic years 1987-88 and 1988-89 were taken up for comparison. The institutional costs (operational as well as fixed) were grouped into 'cycle costs' (costs per graduate) and 'credit hour costs'. The cycle costs were based on a two year programme and the credit hour costs were based on an 80 semester credit hours requirement for a two year programme. The comparison of costs per cycle and per credit are summarized in Table 6.61.

Table 6.61 shows that the unit costs are significantly lower for the UT distance education programmes compared to the programmes of the campus-based institutions. The UT unit cost per cycle (per graduate) is only 16-17 percent of the cost of campus based institutions (12-13 percent operational cost and 31-34 percent fixed cost). The UT unit cost per credit is 32-33 percent of the cost of campus based institutions (24-27 percent operational cost and 63-71 percent fixed cost).

The comparison of individual costs (direct and foregone) is made in Table 6.62. The

Table 6.61 UT: Operational costs and fixed costs per cycle and per credit at UT & corresponding conventional institutions (1987-88 and 1988-89)

(in Indonesian Rupiah thousands)

Unit costs	IKIP's & FKIP's*			UT			UT cost as % cost at IKIP's & FKIP's		
	Operation costs	Fixed costs	Total	Operation costs	Fixed costs	Total	Operation costs	Fixed costs	Total
D₂ Mathematics									
Per Cycle	2,738	622	3,360	368	194	562	13	31	17
Per Credit	34	8	42	9	5	14	27	63	33
D₂ Bahasa Indonesia									
Per Cycle	2,955	571	3,526	359	193	552	12	34	16
Per Credit	37	7	44	9	5	14	24	71	32

Source: Adapted from Musa, 1991: 42

*Conventional Institutions

Table 6.62 UT: Comparison of direct and foregone costs of teacher training programmes through distance and conventional modes in Indonesia

Programme	Conventional mode			Distance mode			Cost of distance mode as % to conventional mode		
	Direct	Foregone	Total	Direct	Foregone	Total	Direct	Foregone	Total
D ₂ Maths	603	48	651	242	86	328	40	180	50
D ₂ Bahasa Indonesia	642	85	727	247	45	292	39	53	40

Source: Adapted from Musa, 1991: 44

individual foregone cost is higher at UT for the Maths programme. Nevertheless, the total cost works out to 40-50 percent less compared to campus based costs.

Thus, the study shows that the distance education system is evidently less expensive than the face-to-face system.

A comparison of unit costs of UT and of the campus universities of Indonesia was attempted in 1986 by a project called 'Improving the Efficiency of Educational System' (IEES). It computed the faculty-wise weighted average of operational costs per student per year. It did not take into account the number of courses offered by the faculty. The unit costs worked out are given below in Table 6.63.

The estimated cost per student at UT is lower compared to the cost at public as well as private campus universities for all fields of study except education. The reason attributed for higher cost for education is the low enrolment level in the courses and programmes offered by the School of Education.

A joint project of Harvard Graduate School of Education and the USAID on *The cost effectiveness of distance education for teacher training* (1991) undertook a comparative

Table 6.63 UT: Comparison of per capita cost with conventional universities
(in Rupiah)

Field of study	Per capita cost			UT cost as % to	
	UT	Public CU	Private CU	Public CU	Private CU
Social Sciences	43,299	170,000	266,000	25.5	16.3
Economics	99,387	196,000	301,600	50.7	33.0
Natural Science (Maths and Physics)	351,452	656,000	832,400	53.6	42.2
Education	361,501	297,000	236,000	121.7	153.2
Average (weighted)	119,892	280,000	343,800	42.8	34.9

Source: Adapted from Musa, 1991: 84
CU: Conventional Universities

cost study of teacher training programmes in the distance and the conventional modes offered in Sri Lanka and Indonesia. The study provided evidence that distance education was 'clearly more cost effective' than the campus education in Sri Lanka. In Indonesia, while the distance language programme was found more cost effective, the distance programme in Maths was found less cost effective, compared to corresponding programmes in the conventional face-to-face mode. The distance education programmes were found more cost efficient in both the countries from the point of view of government costs. The annual cost per capita was 1/6-3/5 of the cost of campus based education. Government costs ranged from 1/10 to 1/3 of the cost of campus based programmes in Sri Lanka, and 1/2 of the cost of the campus based programmes in Indonesia.

In Hong Kong, there were 7 conventional tertiary institutions. An attempt made to compare the unit cost per student of these institutions with the corresponding cost at OLI, again goes to prove that the distance mode is significantly less expensive. The computation of the unit costs is summarized in Table 6.64. The cost details relate to the year 1991-92. The figures do not include capital and research grants. The FTE of OLI is calculated on the assumption of 40 of OLI credits as equivalent to a full-time workload.

Column 4 (average recurrent grant) represents the amount of money the government of Hong Kong gives on an annual per capita basis to the institutions. Column 5 (unit cost per FTE) is the actual cost of supporting a student in the institutions. The difference between column 4 and column 5 is met by student fees, endowments, donations etc.

In the case of OUSL, comparative cost details of similar programmes are available only for the Science and Law programmes (Table 6.65).

The cost advantage at OUSL, in the case of law programme is meagre (3%) but in the case of science programme it is about 45.5 percent. But it is relevant here to point out that the Bachelor in Law is the only programme (with the exception of Certificate in Professional English which gets an excess income of Rs. 123.23 over the cost of 1076.77 by collecting Rs. 1200 as tuition fee) which fetches more money to the OUSL through student fees than what it actually spends on it. The details of total cost, present fee and difference are given in Table 6.66.

Table 6.64 OLI: Recurrent grant and unit cost—comparison with conventional institutions

	Student Numbers (FTE)	Recurring grant (% of total expenditure) in HK \$ millions	Average recurrent grant (FTE) in HK \$	Unit cost per FTE (HK \$)
HK University of Science and Technology*	700	293.116 (93.0%)	418737	455140
HK University	8899	1038.219 (82.6%)	116667	141243
Chinese University of HK	8895	909.998 (73.7%)	102304	138812
City Polytechnic HK	9074	674.465 (84.6%)	74330	87860
HK Polytechnic	13881	843.148 (83.3%)	60741	72919
HK Baptist College	3306	239.032 (83.0%)	72302	87111
Lingman College**	1426	79.266 (83.0%)	55586	66971
Open Learning Institute***	7470	20.900 (13.9%)	2797	16076

* The HK University of Science & Technology is a new university. Its FTE costs therefore are unusually high. The University was expected to reach its full capacity in about four or five years when unit cost per FTE will drop to the levels of the mature institutions.

** Lingman College is another new entrant to tertiary education. It is a liberal arts college and overheads are very, very low.

*** FTE figures for the OLI are extrapolated from the total credits delivered by the Institute. In the year 1991-92 OLI delivered 298,000 credits. For purposes of comparison with other institutions 40 of OLI credits are considered equivalent to a full academic year worth of student workload.

Source: Personal correspondence with Director, OLI

Table 6.65 OUSL: Comparison of cost with conventional universities

(in Rupees)

Programme	Cost per student	OUSL cost as % CU cost
Bachelor in Law	2914	3006
Bachelor in Science	10985	20147

Source: Ranasinghe, 1992

Table 6.66 OUSL: Difference between programme cost and student fee (Bachelor's Degree Programme in Law)

Level	Total cost (in Rs.)	Present fee (in Rs.)	Difference (in Rs.)
3	1001.67	1620.00	+ 618.33
4	1360.19	1620.00	+ 259.81
5	1350.61	1620.00	+ 269.31
6	1063.27	1620.00	+ 556.73

Source: Disenayake, 1989

In the case of AIOU, cost statistics of recent days is not available. Siddiqui (1987: 221) has attempted a comparison of costs for two programmes. Based on projected intakes for 1987-88 extrapolated from the earlier enrolments, he presents the costs for two levels of award (Table 6.67).

Table 6.67 AIOU: Comparison of cost—Intermediate and B.A. programmes

	AIOU	Conventional institutions	AIOU cost as % to conventional institutions
Intermediate	Rs. 3,930	Rs. 5,688	69
B.A.	Rs. 5,240	Rs. 7,250	72

Source: Siddiqui, 1987

The cost for conventional institutions are based on estimated 1978 figures corrected for inflation by a cautious 25 percent.

Similarly in the case of STOU also the statistical information available on cost comparison related to the year 1980. A comparison of operating costs per head in the same discipline is provided in Table 6.68.

Table 6.68 STOU: Comparison of cost by disciplines with conventional universities

(in Bahts)

Discipline	Type of university		OU cost as % of CU
	Conventional	Open	
1. Business Administration and Commerce	14,942.07	1,695.95	11.35
2. Natural Science	19,778.15	972.72	4.91
3. Education and Teacher Education	20,507.39	638.08	3.11
4. Social Behavioural Science	13,435.97	591.84	4.40
5. Law	11,970.81	461.34	3.85
6. Humanities	14,332.56	305.36	2.13

Source: Chaya-Ngam, 1987: 348

The figures given in Table 6.68 represent only the operating costs; capital costs are not included. "The table demonstrates the economical effect of large-scale operations. The large number of students in the open universities helps to reduce the average cost" (Chaya-Ngam, 1987: 346). The open type universities represented in the table include STOU and Ramkhamhaeng University. The operating cost of open type universities for different disciplines varies from 2.13 to 11.35 percent of the operating cost of the same discipline at the conventional type universities. STOU operating cost per head as percentage of cost per head of conventional institutions varies from 1.94 to 20.42 percent. The operating cost per graduate of STOU is in the range of 4.84 to 54.91 percent of the cost per graduate of the conventional institutions.

Thus, wherever comparative studies have been made and the details of studies are made available, the figures speak positively in favour of the economic advantage of the distance education system and support the economic argument. But the question is whether the cost advantage claims can be sustained against the questions of quality.

Quality of education

Cautions have been made about the comparability of quality of OU graduates with CU graduates. The cautions are based on the arguments that (i) 'information sharing' is not education, and (ii) the other functions of imparting education through provisions of tutorial services, opportunities for interaction with fellow pursuers of education and access to educational facilities/resources are key factors differentiating the educational experience of OU as against CU graduates. Carter, quoted in Rumble (1986: 73), says:

...the comparison is between two quite different kinds of educational experience: one full time, involving close relation with other students in a wide variety of activities, free from the pressures of earning a living and from most other responsibilities; the other requiring the dedicated use of spare time, in a life subject to the discipline of other responsibilities, I'm not saying which educational experience is better ... But they are not the same ...

Carter proceeds further to react to Wagner's claim that the output of OU is planned to be similar to that of conventional universities. Carter feels that Wagner's claim 'might give currency to the belief that those who can pass the same examination have had the same education' (ibid: 74).

The fact is that Carter's objection to correlating the quality of education gained to the examination passed is applicable even to the conventional system of education. Certainly all those who pass the same examination of a conventional university do not have the same educational attainment—not only in terms of levels but even in terms of quality and kind. The exposure and experience of each individual differs and also the kind of education they gain.

If the distance learner is denied opportunities of 'close relation with other students in a wide variety of activities', he has his job-environment, colleagues, superiors and subordinates, with whom he interacts and gains in job-oriented experiential learning. He is under pressure to earn and hold other responsibilities; but he is mature, aware of his needs and is willing to work for them. If he does not get the opportunity to fulfil his needs for learning through the OUs, he may not get any opportunity at all.

Success rates and learner benefits

What we need to consider in the light of the foregoing discussion is not a comparison of quality—comparison is worth only where 'like is compared with like' as we said earlier; we should rather concern ourselves with the target set, the achievement made and the cost suffered. With this assumption, the success rate and the learner-benefits are studied.

The success rates in terms of percentages represent the number graduated as against the number enrolled or the number graduated as against the number appeared for exams. Strictly speaking, the percentage of pass against those who have enrolled in a course will not reflect the true success rate in a system where student-paced learning is a declared

policy. The comparison should, then, be with those 'active' in a given semester or term and those turning out successful.

Table 6.69 shows highest pass percentage for OLI, whether it is against the enrolment or against the appearance. It should be remembered that at OLI the students have to meet almost the full cost of their education, whereas at the other institutions the cost is highly subsidized by the governments concerned. Considering the average pass percentage for the conventional institutions of India (Pillai, 1992: 23), the pass percentage of Indian OUs/CCIs ranging from 22.5 to 41.2 percent may be taken as a positive indicator of performance, given the flexibility of OUs in terms of duration of studies besides other differences.

Table 6.69 Institutions under study: percentage of students passing examination

OUs	Percentage of enrolment	Percentage of appearance
IGNOU	22.5	—
YCMOU	—	56.2
BRAOU	29.14	—
OUSL	26.22	59.56
OLI	44.12	75.19
CCIs		
Delhi University	28.2	—
Annamalai University	40.4	—
Bombay University	41.2	—

Details of success rates concerning STOU are given by Sriprasart, et al (1988:160) (Table 6.70). The percentages represent average graduation rate per year of the total enrolment in the relevant programme.

Table 6.70 STOU: Average graduation rate per year

Programme	Average graduation %
1. Two year continuing education Bachelor's Degree Programmes	38
2. Three year Bachelor's Degree Programmes	20
3. Four year Bachelor's Degree Programmes	15
4. One year Certificate Programmes	37

Source: Sriprasart, et al. 1988

One year and two year programmes show an average success rate of 37 and 38 percent. As programmes of longer duration show lesser success rate, the programme duration perhaps has something to do with the sustenance of interest and motivation. May be with part-time pursuers of learning, length of duration has negative influence.

As for UT, Rakhmat, et al (1988) give some details of success rates for the initial three years of UT operation. During 1984-85 to 1986-87 the cumulative enrolment for Degree and Diploma programmes was 131,743 out of which the active students were 67,446 (ibid: 175). UT did not graduate any student during the three year period; but it produced 2,607 diploma graduates (ibid: 183). As details of students enrolled for the diploma programmes

are not available, it is not possible to work out success rate. However, the retention rates, based on 1984-85 cohort sample, show that only 60.5 percent students stay through all the four semesters, 19.8 percent drop out at the end of the first semester, 10.7 percent at the end of the second semester and further 9 percent at the end of the third. Challenges of self learning system, difficult learning materials, poor exam results, family and job related problems were some of the factors that inhibited students from further registration (ibid: 188).

Individual studies about the relevance of education to employment and to job performance have been carried out in Thailand. The research titled *Occupational Benefits of Open University Education* by Dr. Preecha Kamphirapakorn, et al found a higher level of capability in the work of their sample (Sriprasart, 1988: 160). Another study by Maethi Piyakhun found a different sample registering a high level of job satisfaction, using in their jobs what they had learnt at the OU and receiving much overall benefit (ibid: 160). Statistical data on application of learning to jobs are given in Table 6.71.

Table 6.71 STOU: Application of learning to jobs

(in percentage)

	1984	1985	1986	1987	1988
Very much	32.6	32.1	30.6	30.0	27.9
Much	55.6	53.8	54.0	53.5	53.3
Little	8.2	9.8	10.7	10.5	13.2
Very little	2.7	2.7	3.6	3.6	3.6
No response	0.9	1.7	1.1	2.3	2.0

Source: Rojanasang, 1992

The statistics show that about 30 percent students every year find their learning 'very much' useful in their jobs and around 54 percent find it 'much' useful.

Statistical data on the effect of education on employment are given in Table 6.72.

Table 6.72 STOU: Effect of education on employment

(in percentage)

	1986	1987	1988
Kept the same job	98.1	97.8	97.5
Direct effect	0.6	0.8	0.5
Some effect	0.7	0.8	1.0
No effect	0.6	0.4	0.4
No response	0.1	0.1	0.6

Source: Rojanasang, 1992

A majority of STOU's students (an annual average of around 83%) are government employees who 'will not change their jobs following their studies'. Their aim is to improve their qualification or knowledge and they are satisfied that they 'can apply their knowledge so as to advance in their careers and increase their expertise' (Sriprasart, 1988: 161).

Information on similar studies undertaken in other Asian countries is not available. It is said that in India, Indonesia and Sri Lanka the respective governments treat OU graduates on a par with CU graduates. In Sri Lanka, 'the OUSL degrees are of the same standard as those of [the] other eight universities ... The professional bodies like Council of Legal Education have recognized the OUSL Law Degree' (Ranasinghe, 1992: 21). 'Most' of those who received the certificate in Pre-School Education 'have started their own pre schools and others have been recruited in existing schools. The students qualified in Diploma in Technology are working as Engineering Asst. Technicians, while continuing their studies for Bachelor of Technology. Science graduates of the OUSL are all either employed as teachers or holding executive posts in other organizations. Law graduates are all employed' (Ranasinghe, 1992: 13).

Conclusions

The premise

A study of cost effectiveness is a study of relationship between the resources utilized (the cost) and the objectives fulfilled (the effectiveness). Often information about the cost and the effectiveness is meaningful only in a comparative context. A cost effectiveness study, therefore, has to follow four distinct steps:

- (i) defining objectives
- (ii) determining the cost
- (iii) comparing costs
- (iv) comparing effectiveness.

Any comparison of cost, to be valid and reliable, should ensure

- (i) methodological similarity in costing the two units compared (i.e., application of identical costing concepts and costing methods); and
- (ii) functional similarity of the two units (i.e., pursuit of similar objectives in identical operational situations)

Comparison of effectiveness is possible

- (i) only when the two units compared share similar ideologies and pursue similar objectives; and
- (ii) only in cases of such objectives which are objectively measurable and quantifiable.

It is obvious that these conditions may not be met fully by any two institutions that belong to two different systems. One may only look for as much commonality as possible. Perhaps all comparisons in the real world situation have to accept this compromise.

A cost effectiveness study begins by defining objectives. Accommodating social demands

for higher education is the broad objectives in relation to which the cost effectiveness of Asian OUs is studied. Social demand reported in this chapter was analysed in terms of the broad parameters identified by Gooler, namely, numbers and necessity, egalitarianism, economy and quality of education to which we added continuing education.

Meeting social demands

An attempt was made to determine the extent of contribution made by Asian OUs in meeting the social demands in terms of the broad parameters listed above. The question of numbers and necessity was dealt with in terms of enrolment (Section: The Social Demands) and in terms of programmes—types, levels and disciplines (Sections: The Institution, and The Social Demands). Each of the OUs is found to accommodate a population several times larger than the one a traditional institution with similar resources can normally accommodate. The figures keep increasing—not only in terms of enrolment, but also in terms of number of institutions. Table 6.73 illustrates the point:

Table 6.73 Institutions under study: trends in student enrolment

	IGNOU	BRAOU	YCMOU	KOU	STOU	OUSL	OLI	UT
81-82					82139			
82-83					69046	2360		
83-84		6231			46900	6879		
84-85		11244			83640	5873		85329
85-86		15702			79990	9052		85015
86-87	4381	19271			61687	10063		19655
87-88	16811	16303		14278	48500	13119		7509
88-89	42324	16827		22983	49420	13197		9041
89-90	48281	16402	1240	14389	52831	12832	4237	5739
90-91	52376	27446	9566	12263	67398	14407	13009	37151
91-92	62375	32416	13052		80000		17535	66513
92-93	75666		15276					

Source: Data compiled from Tables given in the third section.

Notes: In the case of STOU, OUSL and UT, the figures represent enrolment in a calendar year, while in the case of the rest the figures represent enrolment in an academic year. The former of the two numbers in Column 1 is to be taken to represent the calendar year in respect of STOU, OUSL & UT.

In India, then, the OUs and the CCIs collectively catered to 11.5 percent of the total population enrolled for higher education (which stands at about 20% today). Annual intake at IGNOU and YCMOU show a record of consistent increase. While IGNOU has gone through seven cycles of enrolment, YCMOU had gone through four. Introduction of newer programmes in successive years was perhaps a factor contributing to the consistency in increase. The nine cycles of enrolment at BRAOU and OUSL showed a steady growth, except on one or two occasions. STOU with ten cycles of enrolment showed declining trend for a brief period from 1985 to 1987 after which it showed a trend of ascent. UT, for which figures for 8 years were available showed a steep declining trend up to 1989 after

which it seems to have recovered comfortably but not yet to the level of its first two years. The decline is said to be part of a common trend in enrolment for higher education in Indonesia during the period because of economic reasons and also because of general trend among school-leavers to shift from university education to short-term vocational courses. Fear of difficulties in pursuing self-learning is also said to be a reason.

The enrolment at KOU is also shown to be on the decline. The reason attributed in this case is the need on the part of authorities 'to man the house properly' so as to ensure maintenance of regularity in the calendar of activities. Among the CCIs of India, for which figures were available, steady trend of growth was seen in the case of four and mixed trend in the case of one, if one takes the figures since 1982-83 upto 1992. Figures for the remaining CCIs were not available. On the whole, therefore, there was a rising trend in enrolment, reflecting a constantly increasing social demand for higher education.

The learner profile

- **Age spectrum:**

The profile of OU learners in terms of age indicated in very clear terms that OUs were catering to an age-specific population (21+) who may not have access to higher education institutions of the conventional type. The 21+ years population ranged from 1.37 percent (OUSL) to 12.65 percent (YCMOU) of the total enrolment. A large percentage of learners belonged to 21-30 age group, ranging from 45.49 percent (OUSL) to 79 percent (BRAOU). These were target groups outside the ambit of the conventional institutions.

- **Gender ratio:**

The male-female distribution of learners corresponded more or less to the ratio in the conventional institutions. The largest female participation ratio was available at STOU (47.16%). The exception that more women students would avail themselves of the OU opportunities was yet to be realized at least in the case of India. The reasons could be traced to the nature of programmes/courses offered and the entry requirements stipulated. More programmes that suit women's interests and aptitude may have to be designed and introduced. For most of the rural women in India, the language of instruction could also be a hurdle, if instruction is offered in English or in languages other than their mother tongue or the regional language.

- **Employment status:**

Participation of unemployed students was more in the OUs of India—47.33 percent in IGNOU and around 43 percent in BRAOU (BRAOU percentage is computed from 1986-87 figures). In the other OUs the percentage ranged from 2.9 percent (Hong Kong) to 20 percent (Sri Lanka). These figures again lent support to the premise that OUs cater to a population that had no access to higher education institutions of the conventional type. 80 to 97 percent of students enrolled at OUs were already on a job and pursued higher education for improving their qualification or skill.

- **Entry qualification:**

Few of the students at OU had degree qualification. The percentage was 14 at STOU out of its total enrolment; 5.2 at OLI and 34.78 at IGNOU. The percentage-variation could be attributed to the levels of programmes offered. IGNOU offered quite a few postgraduate

diploma and degree programmes in Management, Distance Education, Higher Education and Library Science which required a degree as entry qualification and these courses also enjoyed a popularity among graduates employed in the fields concerned.

The learner profile, thus, allows a categorical assertion of the population served by the OUs—adult, mostly employed undergraduates, seeking to pursue higher education.

Programme profile

The programme profile showed that all the OUs under study had been offering job-oriented programmes and programmes of life long and continuing education, besides conventional programmes. Although the number and range of such programmes varied from one institution to the other, the profile was a pointer to the commitment of OUs to meet the dual social demands for (i) conventional type of programmes, and (ii) programmes of relevance to life. Four of the OUs offered welfare oriented programmes which may be directly relevant to the promotion of social welfare—programmes in such areas as food and nutrition, rural development, home economics, cultivation of crops, etc. The same four OUs had also been offering programmes that were not available elsewhere in the conventional system within the country concerned—such programmes as on distance education and programmes of ‘non-formal stream’ leading to Bachelor’s degree.

Thus, the learner profile and the programme profile together indicated clearly the OUs orientation towards meeting social demands in terms of numbers and necessity as also the demands of continuing education, though any objective quantification of such service was not possible at this stage. Detailed, classified data from the institutions concerned, if collected by the institutions in future, may help in quantification.

Equity

As far as the egalitarian dimension was concerned, though the provisions of education were thrown open to all by the OUs, irrespective of the local and social and economic stratification, we had little statistical evidence to show whether and to what extent the disadvantaged sections of the society get benefited. The study attempted to collect data relating to:

- rural-urban distribution of students,
- income-based distribution of students, and
- the beneficiaries across the disadvantaged social sections.

We could collect data only from certain institutions with regard to the rural-urban distribution and the ‘socially disadvantaged’ distribution. The data collected was found to suffer from lack of precision for want of clear understanding of the terms ‘rural’ and ‘urban’ among the student population. Most of the employed students of OUs were migrants to urban locales and were not sure whether they should call themselves urban on the basis of their job-station or rural on the basis of their nativity. As for socially disadvantaged sections, a problem of different nature came to light in the course of the study. Disadvantage was along different lines in different countries—when caste and community could be a

disadvantage in one country, race was in another, language or religion in yet another, and region in some other place. What made one disadvantaged in a given country was not known definitely and data did not pour in adequately when they were identified. As for the economic criterion, neither sufficient details of what economic conditions can be termed as disadvantaged in a given country, nor enough data could be collected. The open universities covered in this study, with the exception of STOU, had not collected and compiled data on the income brackets to which their students (or their families) belong. The classification of students into high, middle and low income groups (UNESCO & NIME, 1992) indicated clearly that at least in four OUs covered by this study, the majority of learners were from middle and low income groups.

The collected data made it clear that the OUs serve the cause of those aspirants to higher education who, either because of their age or employment or marital status, were unable to pursue higher education in conventional institutions (87% of women enrolled at BRAOU, according to 1986-87 figure, were married).

The other parameters of social demand, namely, economy and quality of education were taken up in the discussion of comparison of cost and comparison of effectiveness in the preceding section.

Cost effectiveness

With regard to costing, there was collection of information on unit costs of each of the OUs and the unit costs of a corresponding conventional institution in the country concerned. Because of the complexities and the differences in the cost concepts and cost methods applied in determining cost at different institutions, collecting identical data for comparison became difficult. This was in spite of our effort to collect comparable data through local experts of different institutions. Difficulties stemmed from a variety of cost-factors as well as non-cost factors. As a result, we could collect identical pairs of unit costs only with regard to certain programmes and institutional average cost per student of certain institutions. The other dimension of comparison which we could try was the government contribution as against self-generation of funds. The direct comparison of unit costs across programmes could not be attempted because of inconsistencies in cost centres between the OUs and the CUs. The comparable data thus collected were very limited, yet they do indicate the cost trend.

The programme specific cost per student proved that OUs were less expensive than CUs. The cost per student for the Bachelor's (Arts & Commerce) programmes at IGNOU and YCMOU was about 1/3 of the cost for corresponding programmes in the conventional system. The cost per student for the Bachelor's programme in Science, at the OUSL, was lesser by 45 percent compared to the corresponding programmes at conventional institutions in Sri Lanka. The per student cost of Mathematics Diploma Programme of UT was about 50 percent of the corresponding programme at the conventional institutions in Indonesia; similarly, the Indonesian Language Diploma programme cost 60 percent less than its counterparts in the conventional institutions.

The CCIs of India make more pronounced claims for cost advantage. The cost per student of the CCIs, worked out as percentages of cost per student of the conventional

system (operating within the same university and mostly within the same campus) ranged from 11 to 23 percent. Other studies conducted on the CCIs confirm their cost advantages in different degrees. At any rate, there are some CCIs in India which generate considerable surplus funds through economies of scale, and taking full advantage of the dual mode system that helps reduce costs. There are also, on the other hand, CCIs in India which depend on Government grants to meet their deficit in the operating costs.

Government grants on account of the operating costs of CCIs/OU s ranged from 8 percent (CCIs) to 67.67 percent (IGNOU), while government grants to CUs ranged from 62 to 90 percent. IGNOU generated its own funds to the tune of 32.3 percent of the total operating costs; BRAOU 74.41 percent; KOU 50 percent; STOU 78.88 percent; OUSL 74 percent; UT 41 percent; OLI 85 percent and selected CCIs 92 percent.

Comparison of effectiveness of programmes is difficult when programme objectives are not precisely defined. The problem becomes 'particularly acute' because when we attempt to compare the effectiveness of OU programmes with that of CU programmes, we are attempting to compare 'the effectiveness of one programme that has one set of intentions, with another programme that has a different set' (Gooler, 1981: 11). Under such circumstances we need to make certain assumptions and allow for certain differences. In the absence of distinctly spelt programme objectives, we need to depend on pass percentage data as an indicator of effectiveness. The data on pass percentage against enrolment collected from OUs were reasonably acceptable, if we give due allowance to the flexibility permitted in the system. The percentage ranged from 22.5 to 41.2. The percentage of pass against the number of students appeared present a fairly good ratio. In either case, the failure cannot be equated with 'wastage'.

The Bridges project which studied the teacher training programmes offered through distance and conventional modes in the countries of Sri Lanka and Indonesia, has come out with statistical evidence to prove cost effectiveness of the distance mode. But as for programme effectiveness, this study indicated mixed results.

Very little information is available about studies on programme effectiveness concerning distance education programmes in other Asian countries. Subjective statements made in different contexts affirm that distance education programmes are equally effective, if not more, compared with conventional programmes.

Studies undertaken in Thailand confirm student acceptance of usefulness of the programmes in jobs.

The benefits of OU programmes along different dimensions have been acknowledged by Sriprasart et al (1988), Rakhmat et al (1988) and others. There are certain clear trends which are discernible from this study. These are:

- Adult learners are increasingly getting interested in higher education and are looking for opportunities to improve their qualifications and/or skills to seek employment, to change jobs or for their own personal development. This is a constituency not served by the conventional universities and the OUs respond to their needs without their having to undergo any dislocation in their life and work.
- The enrolment of women in OUs in Asia as a proportion to the total enrolment seems to be low. However, considering the fact that a vast majority of them are adult women (21+

in age), most of whom might have settled in life after marriage, their number in absolute terms is significant. The OUs provide an institutional mechanism for the empowerment of women, raising their social and economic status and ensuring gender equality. Through appropriate measures to attract women to enroll in their programmes and retain them till the successful completion of their studies, OUs can become an instrument of social change, as far as gender equality is concerned.

- The employment status of OU students in Asia is a clear indicator of the nature of emerging demands for higher education. The majority of OU students in Asia are already employed. Apparently, they seek new qualifications and wish to acquire new skills for advancement in their career. The structures and processes of the conventional system cannot respond to this demand. The built-in flexibility of the OUs permits them to address the needs to these new client groups and tailor programmes to meet them. The modular structure of the programmes adopted by the OUs permits mobility of students across programmes and also across institutions.
- The conventional system of higher education does not produce a wide range of instructional materials of high quality and standard as the OUs do and make available to their students. The participation of a wide spectrum of top level experts—both in teaching and in the professions—in the development of these materials ensures their quality. That these materials are available openly, not only to the students of OUs but also to the students of the conventional universities and the general public is a distinct contribution that the OUs make to the needs of a learning society.
- The OUs adopt communication technology to great advantage. They can reach a large number of students scattered at different places at a relatively low cost. OUs are thus instruments of mass education, while CUs, of necessity, have to be selective in choosing their students in smaller numbers.
- The OUs have signaled an era of national and international cooperation and have widened access to good quality education to students across nations. There are several instances where materials produced by one university is utilized by another to great advantage. There are also instances of adaptation and translation of materials for local use. The OLI, Hong Kong virtually buys programmes off-the-shelf and uses them in their programmes by incorporating minor changes to suit local needs. The emergence of OUs is surely a great opportunity for the less developed countries who do not have the resources to create the infrastructure required for higher education in their own countries. It augurs well for a new era of international cooperation in higher education.

Coordination

Introduction

The need for a mode of education with higher productivity and greater flexibility was felt as far back as in 1949, but it took us more than a decade to make a beginning and establish the first Directorate/School of Correspondence Courses in 1962 at the University of Delhi. During the next two decades, i.e. from 1962 to 1982, Departments/Directorates of Correspondence/Distance Education were established at a number of universities, but they remained largely ignored and, in most cases, were treated as second rate appendages of otherwise first rate institutions. They could not enjoy academic credibility nor any kind of autonomy, as they kept doing what the parent institutions had been doing. As a result, the measure of their success was seen in how well they conformed to the norms of their parent institutions. Consequently, though they may claim to display a feature or two of distance education, they have not been able to exploit the immense potential of this potent mode of education.

Fortunately, the academics who committed themselves to the system realised in no uncertain terms that if the nation was to benefit from this system, and also if the system was to save itself from the educational perversity which it seemed to suffer from, there was a need for concerted national effort, desirably sponsored by the Central Government, to promote and nourish it. Numerous resolutions passed by the professional associations comprising distance educators and the Departments/Directorates of Distance/Correspondence Education emphasized, time and again, the need for a national agency to promote and develop it. What this national agency might be, what its composition and exact functions were, however, was not clear to anybody. It needed strong political will backed by popular pressure and experience on a national scale to accept that there was a need for such an agency, and then relevant insights and exposure to international experiences and practices to move towards establishing such a national agency.

As a result, following the establishment of the first open university in Andhra Pradesh in 1982, the Indira Gandhi National Open University was established in 1985 and entrusted with dual responsibilities: as a University offering programmes in India and abroad, and as an agency for coordination and maintenance of standards in the distance education system in the country. We need to be more explicit about the latter. The stipulation is that IGNOU was not only to promote and coordinate open and distance education system in the country,

but also to maintain standards of the programmes prepared by these systems. The experience of the past years has shown that though it has made significant progress as a university, it has lot more to achieve as a coordinating agency. Seen from this point of view, the birth of the Indira Gandhi National Open University has been a significant step for consolidating distance education in the country. Setting up Distance Education Council under IGNOU was construed as an effective step towards national coordinating agency. However, given the complexity of the task of running a coordinating agency, which needs cooperation from all the institutions concerned and the central as well as state governments, IGNOU had to go about it cautiously. Beginning in 1987, discussions at various levels have been going on; draft statutes to give effect to 'coordination' have also been prepared and discussed, and suggestions for improving them have been taken note of.

It needs to be mentioned here that the earlier efforts for coordination had focused on open universities only. But as we intended using the distance mode of education optimally, it was not only desirable but also essential that we included in our discussion all those institutions/agencies which used one or the other form of distance education for the tertiary level of education anywhere in the country.

Conventional education is institution-centric in the sense that the site of educational activity is the institution itself. Consequently, each institution is a unique entity. This uniqueness of the conventional university is manifested through its components, the significant of which are its character (residential, affiliating etc.), its teachers, its students, its syllabuses, laboratories, libraries, and its campus. In other words, the uniqueness of conventional universities is a result of the uniqueness of their components. There is no mutually inclusive mobility possible between these components; most of these components are not mobile, but when any of them moves from one site to the other, they (except teachers and students) cease to belong to the earlier collectivity.

Open universities present a marked contrast, for they need not be unique entities as is the case with conventional universities. The more we understand about the possibilities opened up by open and distance education, the better we appreciate the non-unique character of open universities – the teachers, the courses, the labs, the students, etc. of one open university can simultaneously belong to other open universities. The need for such non-unique, and patently flexible, educational institutions, is becoming more and more intense, as the more we see the reality of economic compulsions, the greater we feel the need for economies of scale; the more concerned we feel about the diverse needs of exploding populations, the more intense becomes the need for a highly potent and fast pedagogic and andragogic methodology; and the more we expect from education in terms of social relevance, the greater is the need for divergence from the conventional disciplines/subjects. In fact, the conventional and ODL systems should support each other as equal partners in the larger interests of the nation. Such an effort will prove mutually beneficial, though the ODL system has emerged out of the mainstream F2F system and the latter still supports it through expertise as well as infrastructure. The ODL system has in turn created awareness about the need for quality and standards in education. That is why educationists now think of a convergence of the two and the emergence of a seamless and borderless education.

These insights are recent and may not be fully appreciated even today. So long as we do not take cognisance of the pragmatic aspects of the lack of this appreciation, we shall be

talking in a void and working in vain. It needs to be realised that the prime issue at hand is not that of what powers an institution may exercise over another and how, or how much of, their autonomy may the open universities compromise, or whether or not the Directorates of Correspondence/Distance Education should become autonomous and so on. The prime issue is whether or not we want to exploit the new found mode of education optimally at the national level. The answer indeed cannot but be in the affirmative. If we as a nation agree on this basic principle, devising solutions should not be difficult. And we have to agree on the basic principle, for we produce one Australia every year – that is the extent of the pressure of population on our educational system, for, above 35 percent of our population is illiterate today – that is the measure of the time lag we suffer from, and then we need to heed the compulsions of our economy. We must find a way of reaching the masses, reach them at the lowest possible cost and in the shortest possible time.

Based on the discussions, undertaken at various occasions, presented below are a few proposals which we need to examine with a view to reaching a commonly agreed upon workable plan for effecting the 'coordination' we are talking about.

Objectives

In order to exploit the open and distance learning systems optimally, we need to 'coordinate' the working of all the institutions concerned. The areas of concern for purpose of coordination include:

- Credit system
- Credit-transfer and credit-exemption schemes
- Evaluation system
- Entrance requirements
- Award of degrees
- Syllabuses
- Course preparation (both print and media)
- Relevance
- Quality
- Cost-effectiveness
- Use of languages – media of instruction
- Broadcast and telecast time
- Student support services – use of study centres, and facilities available at other institutions
- Use of non-conventional resources for programme development, course preparation and programme implementation
- Qualifications and competence of the staff
- Training
- Research

Jurisdiction

There are four types of tertiary level institutions, the working of which needs to be coordinated as each one of them uses the distance mode of education in various proportions:

- The National Open University
- State Open Universities
- Directorates/Departments/Schools of Correspondence/Distance Education situated in conventional universities/institutes (64 in number today)
- Non-government, non-profit making agencies/institutes which use the distance mode of education.

Besides, we may also consider the involvement of commercial agencies/institutions which use the mode for profits. But our prime concern is with the four types listed above. However, while considering these we must not lose sight of the foreign universities, which are likely to offer serious competition as economy opens up and globalisation is gradually accepted.

Coordination

It is assumed that all the educational and research institutions in India will be brought under a network and will have all the services that computer network and information technology can offer.

As noted earlier, we have at present a three-tier system: distance education programmes of:

- (i) Conventional universities
- (ii) State open universities
- (iii) National open university.

While IGNOU is the only national open university and shall remain so, it is likely ~~that~~ before long, each state may have the following configuration of DE system:

- Distance Education Institutes in conventional universities
- State Open Universities
- Service available from IGNOU.

It was contemplated in Programme of Action, 1992 (GOI, 1992) that:

The Distance Education Council (DEC) will ultimately assume the responsibility for developing the existing correspondence education programmes on a selective basis and converting them into distance education programme of an acceptable quality.

It is desirable that all the universities that have distance education programmes upgrade them to third generation level and transform themselves into dual-mode universities. There is considerable enthusiasm and discussion on moving to the fourth generation, and the use of Internet and web-based instruction. It is understandable, but we have to consider their feasibility. Even after 40 years, our conventional universities operate under the first generation model, and the print material is substandard. Some of the state open universities have progressed marginally to the second generation level. Considering the period up to 2010, we may be happy if we can lift all the institutions to the third generation level. IGNOU and some of the state open universities may enter the fourth, even higher generation on a selective basis for certain programmes. While institutions may have no difficulty in using Internet and offer web-based instruction, the accessibility of Internet either on personal possession or through commercial centres is not going to be easy (see Table 1.1 p. 8).

Each university may decide on the common programmes between the conventional system and the distance education system, and the special programmes that may be offered under the distance education component. It will become easier if we move to the credit system, and the courses are modular. Once the operation is in dual-mode, the conventional system and the distance education system will be on equal footing, and there are in advanced countries enough models to draw from. They may use the affiliated colleges as study centres also. These universities may draw support from the state open university and IGNOU on selective basis.

State open universities

The state open universities will be the focal points for distance education activities in the state. It should, in association with the DEC, coordinate the activities of the DE wings of the conventional universities and provide the liaison between the DE units of state universities and the DEC at IGNOU.

As per *National Policy on Education 1986* (GOI, 1986), every state will have a State Council for Higher Education. This council may have a sub-committee on distance education presided over by the Vice-Chancellor of the state open university. This committee will coordinate activities in the state among the DE components of conventional universities, the open university and the DEC at IGNOU. All of them will have representatives on the sub-committee. The coordination may be in the following areas:

- Design and development of lessons/programmes
- Preparation of audio-video cassettes
- Use of electronic media centres/studios/facilities
- Adopting/adapting certain programmes and credits from other universities to promote mobility of learners
- Transfer of credits and enabling mobility
- Using modular system.

IGNOU

We are aware that among the open universities in the world IGNOU has a uniqueness:

- It is an institution that offers educational programmes like other universities.
- It is a national institution that has the mandate to coordinate and determine standards in the ODL system in the country.
- It is a national centre for innovation, development and training in distance education.

When the conventional universities in the states transform themselves into dual-mode and they along with the state open university start offering programmes in large numbers, the role of IGNOU may have to change. Most of the programmes in the states will also be in the languages of the states, and IGNOU shall be called for to provide national resource expertise and guidance to other distance teaching institutions to come up to the agreeable benchmark of standards on all the functional areas of operation.

Maintenance of standards

Quality and relevance are two important characteristics of any education system. Till such time that IGNOU was established, there was no mechanism to address itself to standards of distance education programmes. UGC, though mandated to determine and maintain standards, mainly contented itself with laying down norms for academic framework and providing development funding. It is under section 4 and section 5(2) of IGNOU Act that DEC has been set up with well defined objectives to determine standards, and coordinate and promote ODL system in the country.

The provision of section 4 and section 5(2) almost makes IGNOU a parallel institution to UGC in so far as education is concerned. Distance education is a rapidly expanding field and comprises a great diversity of programmes. DEC in a way carried with it the functions of:

- NAAC in so far as assessing quality; and
- UGC in so far as providing development funding.

The DEC is the creation of IGNOU, and IGNOU is one of the central universities. Will the conventional universities and even the state open universities accept the authority of IGNOU, a sister university, over them without reservation?

Though the Union Ministry of Human Resource Development incorporated sections 4 and 5(2) in the Act, the government had considerable hesitation in empowering IGNOU and creating the DEC. The subject was deferred meeting after meeting by the Board of Management, and when the choice was to be made between deleting sections 4 and 5(2) and creating DEC, the Board of Management decided in favour of a body like the DEC.

Pre-requisites

Before we state the pre-requisites, we need to turn to the basic reference point which

envisages the above objectives, the areas of concern and jurisdiction in the form of the mandate given to the Indira Gandhi National Open University through the instrument of the IGNOU Act 1985. Among other things, it envisages that:

it shall be the duty of the University to take all such steps as it may deem fit for the promotion of the open university and distance education systems and for the determination of standards of teaching, evaluation and research in such systems and for the purpose of performing this function, the University shall have such powers, including the power to allocate and disburse grants to Colleges, whether admitted to its privileges or not, or to any other university or institution of higher learning, as may be specified by the Statutes.

[IGNOU Act 1985, Clause 5 (2)]

This mandate suggests the following pre-requisites for any mechanism of coordination to come into existence.

- The UGC transfers whatever authority it exercises on state open universities and directorates/departments/schools of correspondence/distance education to whatever mechanism of coordination is established by IGNOU over an agreed period of time (to be specified).
- The universities/institutions operating correspondence/distance education programmes allow more and more autonomy to these directorates/departments/schools of correspondence/distance education for purposes of their coming into the fold of the IGNOU mechanism of coordination referred above.
- Budget provision of IGNOU is increased proportionately as more and more universities and directorates come into the fold of its mechanism of coordination.
- Through its training, extension and research programmes, the IGNOU mechanism of coordination raises the level of awareness among the masses in general and the institutions in particular so as to facilitate the process of strengthening itself.
- IGNOU takes up full responsibility for providing assistance in transforming all those institutions/directorates into distance teaching systems, and put in-built quality assurance mechanisms in place.
- All institutions of correspondence/distance education should volunteer to subject themselves to continuous evaluation and assessment, through an agency, of the programmes, departments, instructional delivery, training and research, and the institution as a whole.

The DEC is, even now, the creation of the Board of Management of IGNOU, drawing the authority from sections 4 and 5(2). For DEC to be more effective, two steps may be considered:

- (i) The IGNOU Act may be amended and DEC may be incorporated explicitly in the Act with well defined powers and functions.
- (ii) The VC, IGNOU, may be designated in the Act itself, as Chairman, DEC and VC, IGNOU.

- In terms of salary and protocol, the VC, IGNOU may be on par with Chairman of UGC, AICTE and other autonomous bodies. As of now, the official status of VC, IGNOU is not commensurate with the responsibilities that devolve on his/her shoulders.
- The budget provision for DEC must be separate, and IGNOU, in addition to the grant that it might get from the MHRD, must also be eligible to apply to DEC for support like other open universities.
- From the point of view of maintenance of standards, IGNOU will be under the authority of DEC like any other university.

Some of these suggestions can generate a lot of debate within and outside IGNOU. But the point I wish to make is: we need to have a very different organisational and functional status of DEC, and the nature of its workforce, than what we have today.

Institutional mechanism

It has been mentioned earlier that while the conventional universities in the world, as they now stand, exhibit no major differences among themselves in terms of objectives, structure and academic programmes, the open universities often differ from each other.

The Indian scene has a uniqueness of its own. India has in the length and breadth of its land, a dispersal of tertiary level distance education establishments known by such varying names as Directorates, Institutes, Schools and Universities of Distance Education. They represent a wide spectrum in the instructional tools employed by them from the first generation level to Internet and flexible learning opportunities using English as well as the respective state language.

A broad base in the form of institutional potential exists and the need is one of combining the resources in order to increase and upgrade the strength of individual institutions. Fortunately the IGNOU Act, Clause 5 (2) provides for an institutional mechanism to build, as tall a cooperative endeavour as we may choose to materialise.

We have two national level bodies, namely National Assessment and Accreditation Council (NAAC) for general education and National Board of Accreditation (NBA) for technical education. The NAAC, NBA and DEC need to come to certain understanding among themselves soon regarding their jurisdiction and the norms they would follow in evaluating the quality and relevance of the programmes. The evaluation of each of them must be treated as having a national standing and acted upon accordingly wherever necessary. The details have been discussed in Chapter 2.

The DEC in a way is a unique and pioneering creation. It combines in itself the nature of functions of UGC and NAAC or of AICTE and NBA as far as Distance Education is concerned. Though created by the Board of Management of IGNOU, it has the authority to assess the quality of IGNOU's programmes as well and the responsibility to fund the development programmes of IGNOU too, as was visualised at the time of its establishment.

In this section we are concerned with coordination of the functions of open learning institutions. Coordination in the case of open university system has many tiers:

- Between the conventional and distance education components in a dual university.
- Among the distance education components in the conventional and the open university in the state.
- Among the distance education component in the conventional universities, the open universities in the country and IGNOU.

An effective and broad network can be established in the country with meaningful objectives. Since each university is an autonomous body, it is desirable to enter into a memorandum of understanding between each of them. As regards IGNOU, its role may be governed by the provisions in the Act and Statutes formed under them.

Coordination among these universities may be in:

- The preparation of course material: there are many subjects in the undergraduate degree programmes which have a nearly common syllabus among the institutions, within the state. On the basis of mutual understanding, two or more universities can come together and identify one of them as the course preparation centre. Another university may be similarly identified for another subject.
- Sharing physical facilities for multimedia preparation.
- Sharing the classrooms for counselling.
- Sharing the multimedia study materials.
- Conduct of examinations.
- Any other activity that would be of mutual benefit.

The NPE, 1986 (GOI, 1986) has provided for the establishment of a State Council for Higher Education. The Council can have in each state, a chapter for distance education which will be represented in all institutes of distance education, including the open university. Between and among these councils, there may be contracts for cooperation in as many activities as possible.

In the course of development, a stage may be reached when every state will have an open university and the dual mode institutions have upgraded their distance education components. The medium in most of the subjects will be the mother tongue. When such a stage is reached, IGNOU may not run the routine programmes. It may offer special programmes of national interest, function effectively as a coordinating, assessing and promotional body through DEC, prepare multimedia and interactive study materials, develop various protocols and models, experiment with new ways of doing things and technology enabled teaching-learning, and administer and operate at the national level networks.

Since the entry of technology into education, study materials have become commercial commodities; education has become a marketable good. Institutions within the country and institutions across the countries have come together to form consortia, thereby combining their strength and increasing their competitiveness. IGNOU may play an effective role in promoting cost reduction and national as well as international competitiveness.

India has the privilege of a number of distance education institutions and the possibility of building a network under the aegis of DEC. India's educational needs are massive. It has the need to combine all its strength to meet the challenges of education in the knowledge era.

Epilogue

An inequitous world

The terms Access and Equity are interdependent: in any field of activity, lesser the access to opportunities, the more inequitous the situation. In spite of major developments in all spheres of life, it is unfortunate that the 20th century was a century of inequity: a century when inequity grew as never before. It has left behind a legacy of gross divide threatening social stability and world peace. In the long history of humanity, we have not seen a period when inequity existed in more frightening form than now:

- An unusually vast divide exists between the rich and the poor within a country and between the rich and poor countries in the world.
- The disparity which was bad enough even earlier has been growing rather rapidly during the second-half of the last century.

We have on one side the advanced countries and on the other side the developing countries in the world. In 1990s, 20.0 percent of the population in the richest countries had access to 86 percent of the world GDP, the poorest 20.0 percent in developing countries had access to just 1.0 percent of GDP.

The nineteenth century also had been a century of rather gradually growing inequities between countries in the world as a whole: the income gap between the top and bottom countries was (UNDP, 1999): 3 to 1 in 1820; 7 to 1 in 1870; and 11 to 1 in 1913.

Widening inequity

When we come to the 20th century, the ratio of income between the fifth of the world's people living in the richest countries and the fifth in the poorest grew rapidly (UNDP, 1999): 30 to 1 in 1960; 60 to 1 in 1990; and 74 to 1 in 1997.

Similarly inequality within the country grew: for instance between parts of China, countries in Eastern Europe and European Union, countries like Sweden, the USA and the UK. The rate of increase in inequality grew faster as the years advanced in the last century.

As we stand at the beginning of the 21st century, it is the widening inequity that within a country and across the countries, stares at us and poses a serious problem. It is the modern technology and the developmental strategy employed by the advanced countries that has brought about this situation. The potential to create inequity seems to be inherent in the use of high technology as a developmental device. Problems created by technology have to be solved by the application of technology only. In the ultimate analysis, it is a matter of education.

Education, the key

A World Bank survey conducted in 34 developed countries for 110 years from 1850 to 1960 showed that the economy in these countries started showing an upward trend only after they reached the level of universal education. Therefore we realise that to improve the economic condition and the quality of life in the developing world and to improve accessibility and reduce inequity within the country and across the countries, these countries have to launch a massive programme of education.

Universal primary education, though of great importance is not adequate to create wealth. In an age of Science and Technology, the society must be capable of innovations leading to the development of new processes, products and materials and applying them to development. Therefore tertiary education which was confined to the elitist section of the society is now becoming gradually mass based. The progressive increase in the age group entering the university in U.K. (Table 8.1) will illustrate the point (Lockwood, 2002).

Table 8.1 Age group in percent entering tertiary education

Year	Percent of age group (18 years) entering the University
1960	8.0
1980	15.0
2000	30.0
2010	50.0 [Estimated] (in 18 to 30 years age group)

An increase of about 70 percent in enrollment within 10 years is rather difficult if one depends on conventional methods. A world picture of secondary and tertiary education is given in Table 8.2 (UNESCO, 2000).

In India, only 9.2 percent of those enrolled in secondary education go to tertiary education. The world average is 22.2 percent. Even if India is to provide access to tertiary education for 15.0 percent of the present strength in secondary education, we have to start 8000 new colleges of the conventional type. This is just impossible. We have to seriously examine the potential alternatives.

Table 8.2 World secondary and tertiary education enrollments and percentage transition rate

Country/Region	1990			1997		
	Enrollment: secondary edn. (million)	Enrollment: tertiary edn. (million)	Transition (%)	Enrollment: secondary edn. (million)	Enrollment: in tertiary edn. (million)	Transition (%)
World Total	315.0	68.6	21.8	398.0	88.2	22.2
Most developed	68.9	29.1	42.2	75.8	34.2	45.1
Latin America	52.4	3.8	7.2	71.9	6.1	8.5
Asia	55.0	5.0	10.0	69.7	6.4	9.2

World Education Report 2000 (UNESCO, 2000)

Evolution of education

It is desirable to review briefly, but critically, the development that has taken place in the world of education. The end of 18th century saw the beginning of Industrial Revolution. Over the 19th century and 20th century, production in every field became technology-based. The result of application of technology meant that technology replaced craft and productivity increased. Today the difference between an advanced country and developing country is the difference in productivity. Whether it is industry or agriculture, the productivity is many times higher in an advanced country than in a developing country. But when it comes to education, the situation is different. Industrial Revolution did not enter the classroom even in advanced countries. The productivity in education did not change substantially till the middle of the 20th century. Even in advanced countries, productivity in education remained stagnant during the 19th century and over a major part of the 20th century.

The art and science of communication became revolutionised in every area of operation—entertainment, advertisement, press and public platforms. But it remained tradition bound in the classroom. When technology was applied to education, ‘distance education’ was ushered in and classroom instruction changed from craft to technology (Kulandai Swamy, 1992). This transformation marked the inauguration of ‘New Era’ in education. In the history of classroom instruction, distance education constitutes, as I used to say, the third stage of development in education, the first being the ‘Gurukul System’ and second the ‘Classroom System’ (ibid).

Starting with Bologna University established in Italy in 1075, the conventional university system evolved slowly over a millennium. Universities were established in other parts of the world much later, following U.K and Europe. By and large, the system remains the same all over the world with marginal changes. The conventional system, as is characteristic of any craft, did not undergo any revolutionary change over the centuries and among the countries.

The Open University, UK really heralded formally, the arrival of technology in imparting education and training. Within a matter of 40 years, the system has established itself on a global basis and has seen four generations of development, notwithstanding the reservation on the part of academics who are in the conventional system and scepticism among the members of the public.

Demands of access and equity

We all know that Distance Education meets the education and training demands of two major sectors:

- equity in education in an extremely and widely inequitous world; and
- access to continuing education in a world of rapid obsolescence of knowledge, an essentially 20th century phenomenon.

The most important aspect is accessibility to education to those who:

- are employed, when they are free and have time;
- are handicapped, through various modes, specially designed for individuals of various handicaps;
- cannot reach the place of learning, by taking education to where the learner is; and
- cannot afford the cost, by lowering the cost and offering it at affordable cost.

Since technology entered education, the education system has seen rapid progress. In terms of delivery system it has seen five generations: every generation increased the productivity and efficiency of instruction:

- (i) Correspondence education
- (ii) Lectures through Radio and Television: audio-video cassettes and use of computers
- (iii) Interactive radio—video teleconferencing
- (iv) Virtual class room: Internet
- (v) Flexible learning.

Low and high technology

We need to stress the following new development consequent to the use of technology. *Once technology entered the domain of taking education to people, it brought about the division of high technology and low technology.*

Printed instruction material and the use of radio and television, audio-video cassettes are well within the technological capability of every developing country. But once we move to teleconferencing and Internet, we have entered the domain of high technology.

Education is tending to become an industrial operation. We face again the possible elimination of advanced countries. We may have to examine the phenomenon.

During the process of development of industrial age, a wide gap developed early between the advanced countries and developing countries. We have not been able to bridge this gulf so far. But when it comes to distance education, we are not at such a disadvantage. The developing countries, at least many of them, are reasonably well placed and some in this region are well on their way to be almost level with the advanced countries. But the possession of a tool is a necessary but not sufficient condition to be able to use it. The beneficiary group must be able to avail itself of it. There are countries where tools falling under low technology will be more appropriate and practicable, though less effective and limited in coverage.

We do realise that Internet provides a vast scope for coverage at the national level and beyond the shores. However the availability, for the present and in the immediate future, of the hardware with the learners individually or as a community and the preparedness on the part of beneficiaries to use the Internet constitute the restraint. Figure 8.1 and Figure 8.2 give an idea of the Internet access in advanced and developing countries.

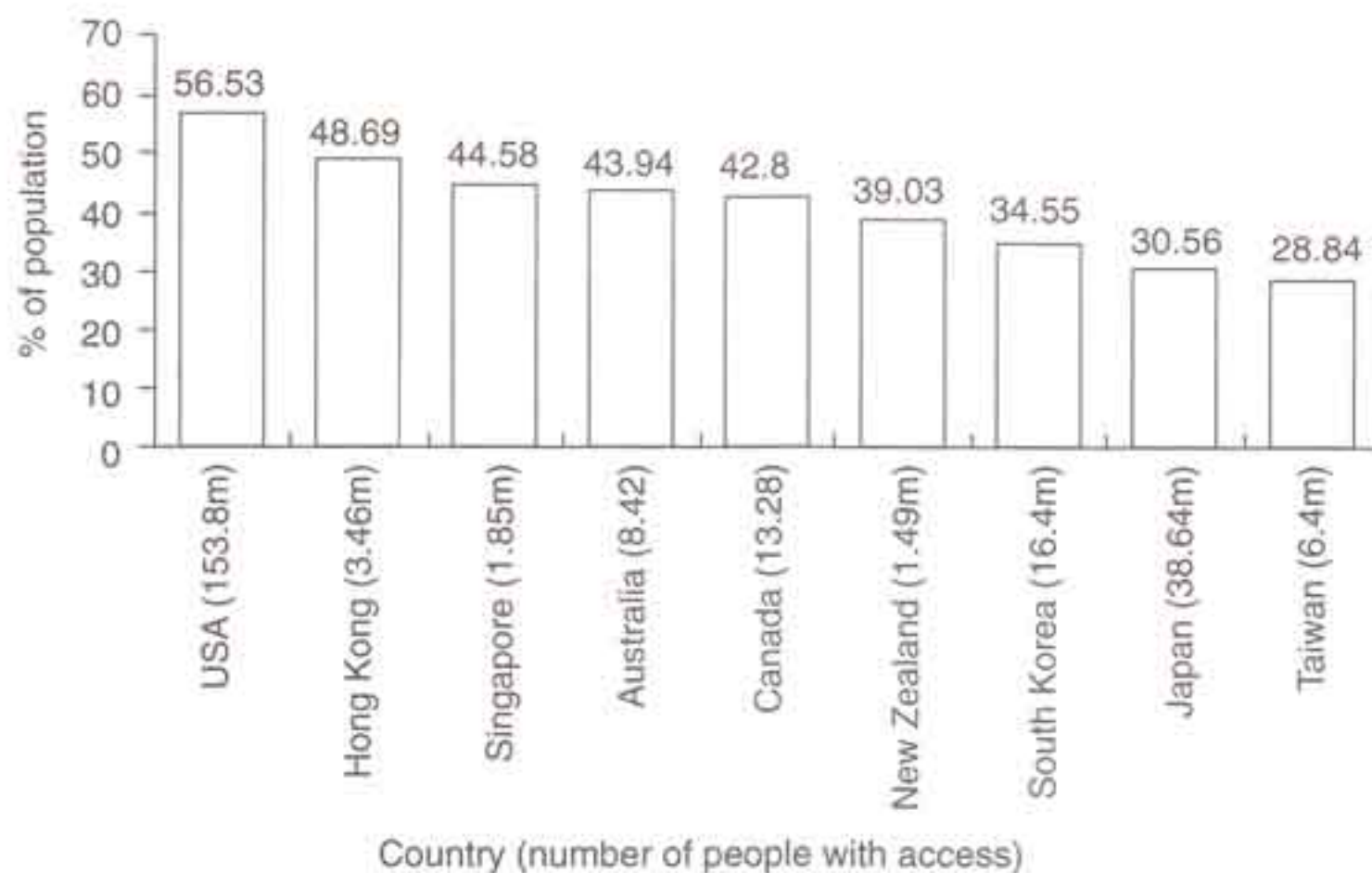


Figure 8.1 Internet penetration in advanced countries (over 25 percent of the population)

The use of high technology may appear to be attractive and satisfy the ego of certain institutions to make the claim that they have the most advanced infrastructure. But we must judge the appropriate technology for ODE in a given situation. *The most advanced is not necessarily the most advantageous in all situations.* As we gradually develop the infrastructure, we must prepare the beneficiaries to take advantage of it. When technology comes in, considerations of appropriateness inevitably follow.

Since educational operation has taken the form of an industry, it has scope for seeking markets on a global basis. Like multinational corporations in industry, there are multinational corporations or consortia of educational institutions. The Global University Alliance (GUA) is a consortium that has nine members – 3 in Australia, 3 in USA and 3 in Western Europe.

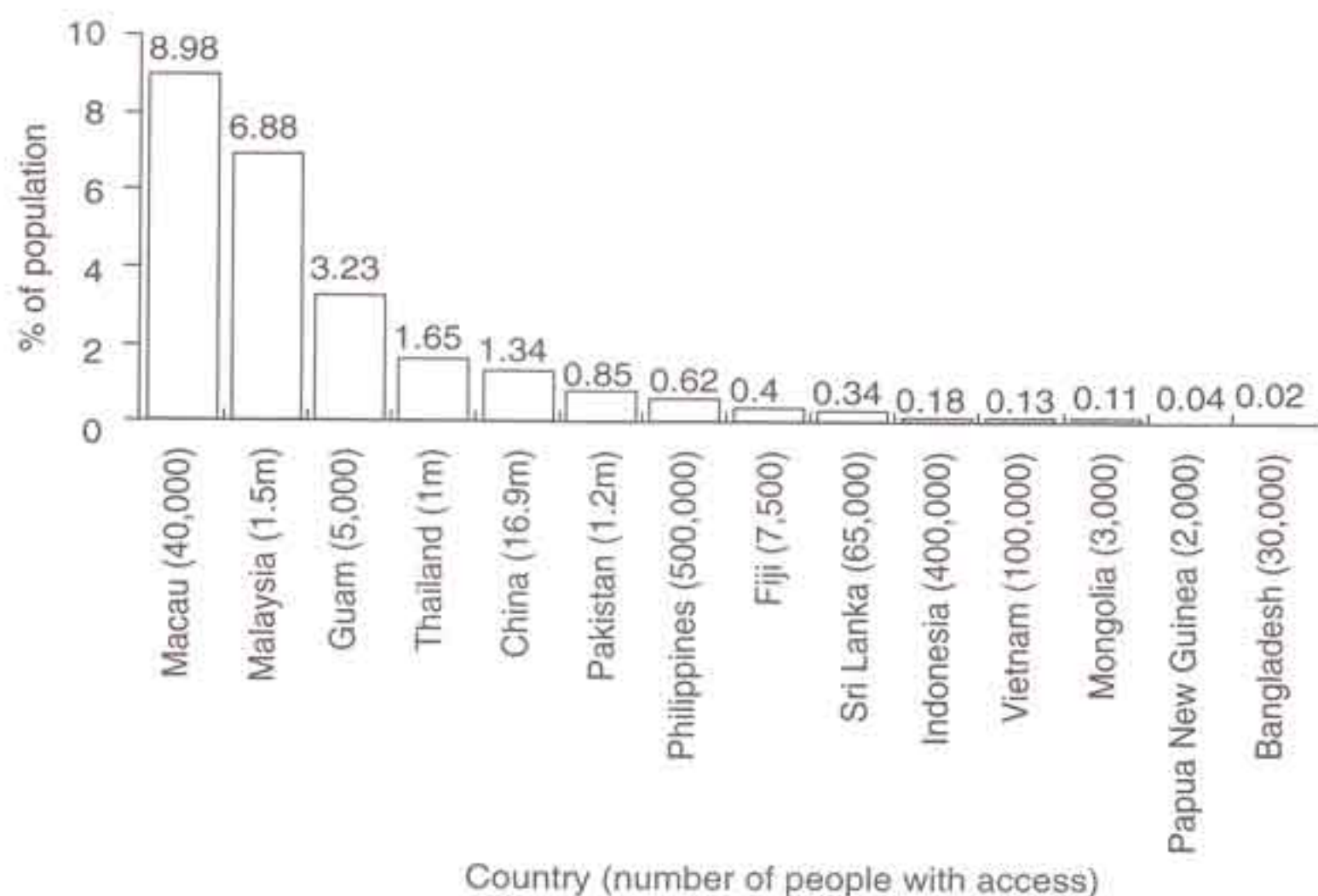


Figure 8.2 Internet penetration in developing countries (over 10 percent of the population)

Similarly Universitas 21 (U21) is another consortium consisting of 19 members – 4 in Australia and New Zealand, 5 in USA, 4 in East/South East Asia and 6 in Western Europe. The objective is providing global online education: it is yet to be realised. However, if the developing countries do not develop strategies for appropriate approach for ODE, it is highly probable that advanced countries will become highly competitive providers of instruction and instruction materials and they will repeat the domination which they enjoyed in industrial market. *This would mean not only economic but cultural invasion.*

Educational requirements in the developing world are not necessarily the same as in advanced countries. The target group is different; the economic environment is different; the cultural background is different. Each developing country's programme has to be in conformity with the economic and knowledge environment of the target group.

Research

Technology is always accompanied by research. If not kept renovated by research it will starve to a state of anaemia. Education related themes are said to account for about 10 percent of the innovation literature (Robinson, 2001). In 1995 there were about 4000 publications on innovation. It is necessary for developing countries to promote active research in ODE and come out with appropriate hardware and software combinations. It is said that in Asia, only OUHK, Hongkong and IGNOU, India have research programmes. In a new area involving technology, active research is inevitable for survival.

As in the case of industrial products, educational institutions from advanced countries offer programmes through distance learning and market educational materials on a highly competitive basis. Marketing opportunities are expanding rapidly in the academic world.

We have to be careful that again the vast disparity that developed in industry does not develop in distance education. During the Industrial Revolution, advanced countries marched ahead leaving us behind. In distance education we made a beginning early enough and we are not very much behind the advanced countries. We must keep up our near parallel position.

Indian diaspora

It is pertinent to mention here a new development in the use of distance education, especially employing Internet. There are certain tribes in the world that have a global presence. They are:

- The Britishers
- The Chinese
- The Japanese
- The Jews
- The Indians

These communities who have a worldwide diaspora and live in different societies, have the problem of maintaining their ethnic identity. Every individual has his/her professional life, social life and spiritual life. Social and spiritual life are inextricably bound with the cultural heritage and traditional faiths and beliefs. All over the world, enlightened governments help the minorities to learn their language, maintain their identity and preserve their values. The main component of one's identity is the language. If you give up your language, you will slowly get dissolved in the dominant majority.

Tamil Virtual University

As mentioned earlier, Indians are a global community, but they speak various languages as their mother tongue. Among those of Indian origin settled abroad for generations, the Tamils form an important group. The total Tamil population in the world is about 75 million; of them about 15 million live outside the boundaries of Tamil Nadu in India and abroad. They live in over 50 countries. Representatives of these people have been requesting the Government of Tamil Nadu to provide opportunities for them to learn Tamil, Carnatic music, Bharatha Natyam and generally keep in touch with Tamil culture and Indian tradition. In response to this request, the Government of Tamil Nadu decided to set up Tamil Virtual University. The Government appointed a Committee under the Chairmanship of Dr V.C. Kulandai Swamy, former Vice-Chancellor, Indira Gandhi National Open University. The Committee submitted a report outlining the hardware, software aspects and functions of the university (Kulandai Swamy, 1999).

The Vision statement is as follows:

The Tamil Virtual University aims at providing internet based resources and opportunities for the Tamil communities living in different parts of the globe as well as others interested

in learning Tamil and acquiring knowledge of the history, art, literature and culture of the Tamils.

The Tamil Virtual University [www.tamilvu.org] serves the needs of a new target group: a new requirement. It is a new experiment, perhaps the first one in this domain.

Tasks ahead

State policy

Since the University of Delhi started correspondence education, individual universities have been offering correspondence education programmes on their own. Some, or most of the universities, resolved to offer these programme almost on a commercial basis, to augment their financial resources. There are many universities, which survive even today, on the income from their institutes of correspondence education. Though the UGC in the past and the DEC in the last few years have exercised their mind over this development, the performance of these programmes is yet to be monitored seriously. Moreover, there is no state policy as such concerning correspondence programmes excepting brief references in the *Programme of Action 1992* of the *National Policy on Education*. The POA envisaged that each state should establish an open university in the VIII Plan period.

This was not achieved and the Ninth Plan document moderated the targets; it envisaged that 12 open universities be started. As of January, 2002 only ten open universities were functional. While there seems to be at the political level a desire to increase access to higher education, it has not been implemented.

It was stated in the POA, 1992 (GOI, 1992) under the heading 'open school system' that:

The possibility of launching vocational education programmes through the open learning system will be explored. For this purpose meaningful linkage will be established with workstations, industries and other organisations.

We find that the open universities are organising vocational programmes in engineering, agriculture, health and home science at secondary education level. It is not clear whether there is any well defined level of participation between the open schools and the university level distance education programmes. Now, the open universities seem to be offering programmes at all levels—education and training at craftsman's level to postgraduate programmes. Lack of demarcation of clear cut mandates and jurisdiction will only compound confusion and adversely affect performance and production.

The establishment of open schools has not made satisfactory progress in the country in comparison with the distance education system at the tertiary level. It seems to be the ironical extension of the cultural characteristic of this country that our preference is not for mass education, but for programmes at the relatively elitist level. Literacy, till the Tenth Plan, did not receive the importance and priority that was its due; and schools received less attention than colleges. There are more colleges preparing students for UG and PG degrees

than institutions for vocational education and training; we produce more doctors than nurses. We need to reach a balance in this regard.

It is necessary that at the state level and national level, we develop a reasonably well defined policy for open learning to take advantage of its full potential.

Funding

It is conceded that distance education is cost-effective because it has higher productivity, as it is technology-based. As a matter of fact, while in all fields of activity, craft has been replaced gradually by technology from the beginning of industrial revolution, teaching however remained a craft and there has been no significant increase in productivity in the last hundred years or more. Distance education really marks the transition from craft to technology in education. The increase in productivity and economy in cost consequent to the introduction of technology must be taken advantage of to meet the demands of equity and social justice. There is, in general, a disturbing trend in some universities to make profit out of DE programmes and meet budget deficit in the conventional system. In general, a reasonably comprehensive funding policy for the open university system has not emerged. Educationists and governments should address themselves to this problem, analyse the practices comprehensively and establish broad policy framework for funding. The desire to attain self-sufficiency and the objective of reaching the unreached and serving the disadvantaged should not become conflicting goals; there must be a reconciliation.

Thrust Areas

- Access or 'reaching the unreached' has remained one of the major concerns of distance education. While the open universities, including the national open university, have to still address a wider audience especially from far flung areas and from the disadvantaged sections of the society, the CCIs need both quantitative and qualitative expansion so as to remain viable and sustainable. The differently-abled, people from blackhole districts, SCs/STs and women need to be prioritised. In a word, *special groups need special attention*.
- Flexibility in structures and operational arrangements need to be widened so as to meet the most important goal for which open distance education exists, i.e. provision to meet the diversified needs and learning styles of distance learners.
- It is high time that international class research and development initiatives and activities are built into policy plans and the required functional arrangements are put in place. This is all the more essential for augmenting effectiveness and efficiency in the existing structures and processes, and meeting the demands for innovation and change.
- We have reached a stage of evolutionary development in our educational practice when formation of consortia and convergence of goals, organisational arrangements, strategies and methods, and appropriate modes of delivery are pre-requisites to further development. Management of change and required proactive human resource development and training are then basic mantras for successful institutional enterprise.

- It has been noted at various places in this book that we need to keep pace with and proactively converge the developments in media and technology for teaching-learning and institutional management. Networking and technology-enabled learning/training need to be put at the forefront of such initiatives. While I have noted in my 'preface' to this book that today's job should be done with today's tools (and not that of yesterday's), I must qualify this further: that we must enhance technology-enabled learning which is community-based, individual learning-style oriented, constructivist and multi-purpose. This clearly suggests that technological provisions should be extended to the unreached, and that we need to consider establishment and expansion of multi-purpose community-based tele-learning centres which have now come up successfully in many parts of the world.
- Quality continues to be a major concern for the entire education system. This is all the more essential when we have a system involving a variety of teams of experts being involved in educational design, development, implementation and evaluation. Similar perception and wavelength are essential; so also institutional policy initiatives and mechanisms, benchmarks and performance indicators (Powar et al, 2000), and detailed action plans and a time frame for their implementation. Once the preliminary threshold is achieved, it lends itself to a never-ending cycle. That's how quality based institutional development is ensured.

Conclusion

We have already 40 years of experience in correspondence education and over 20 years in open university system. Almost all the states may have an open university before long. More and more universities are starting correspondence courses in the name of distance education programmes. There does not exist any well defined structure of the Directorate or Institute of Distance Education in the conventional universities. As already mentioned, there is no clear cut and criteria-based funding policy at any level for distance education programmes. Within the state, there is no co-ordination and there is considerable duplication, especially, in the preparation of study materials. There is a growing and disturbing trend on the part of the conventional universities to start distance education programmes to augment the receipts and meet the deficits in the conventional system. The distance education system has witnessed a steep rate of growth and is assuming an important role in the educational horizon. While the conventional system has seen many Committees and Commissions to review its working, similar exercise has not so far been done with regard to distance education system. In view of these facts, it is desirable that the MHRD, Government of India appoint at the national level a Commission on Distance Education to review the past developments, present position and trend, and recommend the desirable directions of growth and development in the next 10 years.

References

- Abdus Salam (1988) *Notes on Science, Technology and Science Education in the Development of the South*, The Third World Academy of Science.
- AIU (1991) *Directory of Distance Education Institutions, Part I*, New Delhi: Association of Indian Universities Press.
- Ansari, M.M. (1992) 'Cost effectiveness of distance education programmes: with reference to correspondence courses in India', paper presented at the Madras Seminar, December 22-24.
- Ansari, M.M. (1992a) *Economics of Distance Higher Education*, New Delhi: Concept Publishing House.
- Birch, D.W. & Cuthbert, R.E. (1981) *Costing Open Learning in Further Education*, London: C.E.T.
- Brown, Nester R. & Flavin, C. (1999) A new economy for a new century, *State of the World*.
- Brown, Nester R. (1999) Feeding nine billion, *State of the World*.
- Chaya-Ngam, Iam (1987) 'Distance education in Thailand', in *Distance Education in Asia and the Pacific*, Volume II, Manila: Asian Development Bank.
- Chaya-Ngam, Iam (1993) 'The funding of open universities: The case of STOU', paper presented at the COL workshop on *Funding of Open Universities*, Hong Kong, November 26.
- Croft, M. (1992) 'Single or dual mode: Challenges and choices for the future of education', Conference on *Reforms in Higher Education*, Commonwealth of Learning and UGC, New Delhi, August 17-21.
- Curran, C. (1988) 'Resource factors', in *Developments in Distance Education in Asia: An Analysis of Five Case Studies*, UNESCO/ICDE.
- Daniel, J. (1987) 'World trends in higher distance education and opportunities for international cooperation', in *Higher Level Distance Education* (Perspectives for International Cooperation and New Developments in Technology), UNESCO-Deakin University Copublication.
- Daniel, J. (1996) *Mega Universities and Knowledge Media*, London: Kogan Page.
- Datt, R. (1993) 'Cost of distance education institutions', in K.D. Sharma and D.V. Sharma (eds.) *Open Learning System in India*, New Delhi: Allied Publishers Ltd.
- Dhanarajan, G. & Hope, A. (1992) 'Planning towards self-financing: A question of quality, access and economics', paper presented at the Madras Seminar, December 22-24.
- Dissenayake, N. et al. (1989) 'Cost of courses/programmes of study offered by OUSL', Colombo: OUSL (mimeo).
- Distance Education Council (2001) 'Report on Tenth Five Year Plan Perspectives on Distance Higher Education', New Delhi: DEC (mimeo).
- Forsyth, I. (1996) *Teaching and Learning Materials and the Internet*, London: Kogan Page.
- Garg, S. and Panda, S. (2001) World Wide Web and distance education, *University News*, 39 (44), 1-7.
- GOI (1951) *First Five-Year Plan*, New Delhi: Planning Commission, Government of India, 540.
- GOI (1961) *Third Five-Year Plan*, New Delhi: Planning Commission, Government of India, 589.
- GOI (1963) *Report of the Expert Committee on Correspondence Course*, New Delhi: Ministry of Education, Government of India.
- GOI (1966) *Report of the Education Commission*, New Delhi: Ministry of Education, Government of India, 308.

- GOI (1974) *Report of the Working Group on Open University*, New Delhi: Ministry of Education, Government of India, 4.
- GOI (1986) *National Policy on Education*, New Delhi: Department of Education, Government of India.
- GOI (1992) *Programme of Action - 1992*, New Delhi: MHRD, Government of India.
- GOI (1997) *Ninth Five Year Plan, 1997-2002, Vol. II*, New Delhi: Planning Commission.
- Gooler, D.D. (1981) 'Critical issues in evaluating distance teaching programmes', paper presented at the regional symposium on distance teaching in Asia, May, Universiti Sains Malaysia.
- Green, D. (1994) *What is Quality in Higher Education?* Buckingham: SRHE and Open University Press.
- Green, K.C. (1999) When wishes come true: Colleges and the convergence of access, lifelong learning and technology, *Change*, 31(2), 11-15.
- Gupta, M.L. (1986) Finances of correspondence education, *Journal of Higher Education*, 12 (1-3).
- Hawkrige, D. (1987) 'General operational view of distance education', Discussion paper on education and training series, Report No. EDT 68, The World Bank.
- <http://www.gua.com>
- <http://www.universitas21.com>
- <http://www.wun.com>
- ICDL (1999) *International Centre for Distance Learning Database*, UKOU, June.
- IGNOU (1993) *Vice-Chancellor's Convocation Report*, New Delhi: IGNOU.
- IGNOU (2001) *Information Brochure*, New Delhi: Indira Gandhi National Open University.
- Koul, B.N. (ed.) (1993) *IGNOU: A Vision*, New Delhi: Indira Gandhi National Open University (mimeo).
- Kulandai Swamy, V.C. (1991) 'Distance education: Status and prospects', in Moonis Raza (ed.) *Higher Education in India: Retrospect and Prospect*, New Delhi: AIU Press.
- Kulandai Swamy, V.C. (1992) 'New pattern of education: Distance education', paper presented at the Madras Seminar, December 22-24.
- Kulandai Swamy, V.C. (1992) Distance education in Indian context, *Indian Journal of Open Learning*, 1(1), 1-6.
- Kulandai Swamy, V.C. (ed.) (1999) *High Power Committee on Tamil Virtual University: Report*, Government of Tamil Nadu, Chennai.
- Lockwood, F. (2002) 'Access and equity in open and distance learning: revisiting previously identified trends and directions', keynote paper, XV Annual Conference of AAOU, New Delhi.
- Mason, R. (1994) *Using Communication Media in Open and Flexible Learning*, London: Kogan Page.
- MHRD (1999) *Selected Educational Statistics, 1990-91*, New Delhi: Ministry of Human Resources Development, Government of India.
- Musa, I. (1991) 'Policy implication of the scale economies of the Universitas Terbuka courses and programmes', unpublished Ph.D Thesis submitted to the School of Education, Department of Educational Administration and Policy Studies, State University of New York at Albany.
- NCERT (1992) *Fifth All India Education Survey, Volume 1*, New Delhi: National Council of Educational Research and Training.
- Panda, S. (1999) (ed.) *Open and Distance Education: Policies, Practices and Quality Concerns*, New Delhi: Aravali Books International.
- Perry, W. (1984) Report in 'The State of Distance Learning-Worldwide'.
- Peters, Otto (2000) 'The flexible and virtual university: Pedagogical models', ICDE Asia Conference, New Delhi, November 3-5.
- Pillai, C.R. (1992) 'Accommodating social demand for higher education: Cost effectiveness of IGNOU', paper presented at the Madras Seminar, December 22-24.
- Pillai, C.R. and Naidu, C.G. (1991) *Cost Analysis of Distance Education: IGNOU*, New Delhi: Indira Gandhi National Open University.
- Powar, K.B. and Panda, S.K. (1995) 'Accreditation as a means of quality assurance in higher education', in Powar, K.B. and Panda, S.K. (eds) *Higher Education in India - In search of quality*, New Delhi: AIU Press.
- Powar, K.B.; Panda, S. and Bhalla, V. (2000) *Performance Indicators in Distance Higher Education*, New Delhi: Aravali Books International.

- Prasad, V.S. (1993) 'Andhra Pradesh Open University - A profile', in K.D. Sharma and D.V. Sharma (eds.) *Open Learning System in India*, New Delhi: Allied Publishers.
- Rakhmat, A. et al. (1988) 'The Indonesian open learning university', UNESCO Project Report in *Developments in Distance Education in Asia*, UNESCO/ICDE.
- Ramaiah, P. et al. (1990) 'A Study of Students' Profile in Andhra Pradesh Open University', BRAOU, Hyderabad.
- Ranasinghe, A. (1992) 'Accommodating social demand for higher education: Cost effectiveness of OUSL', paper presented at the Madras Seminar, December 22-24.
- Reddy, G.R. (ed.) (1988) *The Ivory Towers thrown Open*, New Delhi: Sterling Publishers, pp. 107-23.
- Robinson, B. (2001) 'Innovation in open and distance learning: some lessons from experience and research', in Fred Lockwood and Anne Gooley (eds) *Innovation in Open and Distance Learning*, London: Kogan Page.
- Rojanasang, C. (1992) 'Accommodating social demand for higher education: Cost effectiveness of Sukhothai Thammathirat Open University', paper presented at the Madras Seminar, December 22-24.
- Rumble, G. (1986) *The Planning and Management of Distance Education*, London: Croom Helm.
- Selim, M. (1987) 'Distance education in Asia and the Pacific', in *Distance Education in Asia and the Pacific*, Volume I, Manila: Asian Development Bank.
- Sharma, Y. (1992) 'Accommodating social demands for higher education and the cost-effectiveness of open universities in Asian countries with special reference to Rajasthan', paper presented at the Madras Seminar, December 22-24.
- Siddiqui, S.A. (1987) 'Distance education in Pakistan', in *Distance Education in Asia and the Pacific*, Volume II, Manila: Asian Development Bank.
- Singh, B. et al. (1992) *Correspondence/Distance Education in India: An in-depth study*, New Delhi, IGNOU Research Project.
- Snowden, B.L. & Daniel, J.S. (1983) 'The economics and management of small post-secondary distance education systems', in David Sewart, et al. (eds.) *Distance Education: International Perspectives*, London: St. Martin's Press.
- Sriprasart, P. et al. (1988) 'An Asian institution making large scale use of communications technologies for educational purposes: A case study of Sukhothai Thammathirat Open University', UNESCO Project Report in *Developments in Distance Education in Asia*, UNESCO/ICDE.
- Srisa-an, W. (1987) 'Financing and cost effectiveness of distance education', in *Distance Education in Asia and the Pacific*, Volume I, Manila: Asian Development Bank.
- Takwale, R.G. (1992) 'On the socio-economic effectiveness of the YCMOU during the initial phase', paper presented at Madras Seminar, December 22-24.
- Takwale, R.G. (1998) Role of ODE in integrating education with development — emerging model of networked collaborative learning and networking, *Indian Journal of Open Learning*, 7(1), 1-4.
- Taylor, James C. (1998) Flexible delivery: The globalisation of lifelong learning, *Indian Journal of Open Learning*, 1(7).
- Tiffin, J. and Bridgeman, N. (1999) 'The global virtual university (GVU)', *The ICDE Conference Proceedings*, Vienna.
- UGC (1990) 'UGC Document on Distance Education', Conference of Vice Chancellors on Distance Education Coordination and Maintenance of Standards, Ahmedabad, October.
- UGC (1990) *Theme Paper*, Conference of Vice-Chancellors, New Delhi: AIU.
- UGC (1992) *Programme of Action 1992*, New Delhi: University Grants Commission.
- UNDP (1999) *Human Development Report*, New Delhi: Oxford University Press.
- UNESCO & NIME (1992) *Asia and the Pacific: A survey of distance education*, UNESCO.
- UNESCO (1990) UNESCO Conference on 'Education for All', Thailand, March.
- UNESCO (2000) *World Education Report: 2000*, UNESCO.
- Vijay Mulay Committee Report (1978) *Correspondence Education in Indian Universities: A Review*, New Delhi: UGC.
- von Prummer, C. (1999) 'Issues of access and exclusion: notes on the role of evaluation in the virtual university', paper presented at the ICDE Conference, Vienna.
- World Bank (1991) *World Development Report*, New Delhi: Oxford University Press.

EDUCATION FOR KNOWLEDGE ERA

Open and Flexible Learning

ABOUT THE EDITORS

Professor Suresh Garg is Professor of Physics and presently Director, School of Sciences at Indira Gandhi National Open University. He is member of several national and international educational bodies like CASTME-Asia, ICTP-India, and a JSPS scholar, among others. He has been Commonwealth Distance Science Expert at the University of the South Pacific, Fiji from 1996 to 1998. He has co-authored two books in physics, edited two books on distance education and published several research papers in physics and distance education in national and international journals of repute. Since 2001, he serves as an Editor of *Global E-Journal of Open, Flexible and Distance Education*.

Professor Santosh Panda is Professor of Distance Education and Coordinator of Staff Development, Staff Training and Research Institute of Distance Education, Indira Gandhi National Open University. His previous experiences include as Director, STRIDE, IGNOU and Director, Research Division, Association of Indian Universities. He has edited several books on higher education and distance education and published several research papers in international journals. Since 2001, he serves as an Editor of *Global E-Journal of Open, Flexible and Distance Education*.



Kogan Page India Private Limited

4325/3, Ansari Road, Darya Ganj, New Delhi 110 002

ISBN 81-7554-178-4



9 788175 541788