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Open and Distance Education

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INTRODUCTION

Illiteracy in the Third World countries is still a burning problem in spite of a number of policies formulated and implemented to achieve the goal of Education for All. The 'population explosion' is the main obstacle in spreading literacy. It is estimated that by the end of the twentieth century, the total population of the world will have increased to seven billion. The population of India is expected to touch 1,000 million in A.D. 2001, and presently its literacy level is 52.11%. This indicates that every second Indian is illiterate. Moreover, the number of female illiterates at 197 million is more than male illiterates by 70 million even though the female population is less than the male population by 32 million. There is also a massive rate of drop-outs from the formal education system. The available figures show that about 78% of the children drop-out before reaching Class V and about 84% drop-out before they complete education up to Class VIII. These drop-outs relapse into illiteracy after some time. According to the World Bank Report, if the present trend is not reversed, more than half of the total illiterates in the world would be in India by A.D. 2000. Moreover, demands in education at the elementary and tertiary levels are bound to increase considerably in future. The number and volume of teachers and materials required for the school and higher education will give rise to many financial, academic and administrative constraints.

Education through the formal mode reaches out only to the 'minority' group of well-to-do individuals. This mode has been, therefore, criticised for creating class distinctions and great disparity between the elite and the disadvantaged groups including ruralites, SCs, STs and other economically backward communities. The National Policy on Education (1986) has emphasised that the disparities in educational opportunities for SCs, STs and other backward sections, ruralites and girls need to be removed at the earliest so as to achieve equity and social justice in education. The children of these disadvantaged groups mostly cannot attend formal educational institutions due to the various types of jobs they have to do in their homes. The "open learning system", therefore, is an alternative system of education which is viable, forward-looking, flexible and cost-effective. It could take education to the doorsteps of needy learners.

Open learning system occurs in different contexts and countries with different meanings and different names such as "open education", "correspondence education", "external study", and "off-campus study". During the last two decades, the system because of its utility, high productivity, greater flexibility in the schemes of studies and examination, cost-effectiveness and innovative approach, has had a significant impact on the Third World countries, including India.

OPEN AND DISTANCE EDUCATION
THE INDIAN SCENE

In view of the need for open and distance education as an alternative viable model, more than seventy countries of the world are offering distance education programmes in several forms at various levels. There may be variations in the structure and designs of the programmes, but generally almost all the programmes offered in different countries are more or less in agreement with the view of the Commission on Non-Traditional Study (1971) that open and distance education programme may be regarded as "more an attitude than a system ...(which) puts the students first and the institution second, concentrates more on the former's need than the latter's convenience, encourages diversity of individual opportunity rather than uniform prescription and de-emphasises time, space, and even course requirements in favour of competence and, where applicable, performance. It has concern for the learner of any age and circumstances, for the degree aspirant as well as the person who finds sufficient reward in enriching life through constant periodic or occasional study."

In   order to provide a flexible and less expensive method of educational instruction especially at the higher education level in India, the first correspondence course at the university level was launched by the University of Delhi with the opening of the Directorate of Correspondence Courses and Continuing Education (presently known as School of Correspondence Courses and Continuing Education, University of Delhi) in 1962 on the recommendation of the Kothari Committee on Correspondence Courses and Evening Colleges appointed by the University Grants Commission as proposed by the Central Advisory Board of Education in 1961. This experiment can be considered as a pace-setter for providing education   through the distance mode in the form of correspondence courses. The Third

Planning Commission also took note of the success of this experiment and recommended the   adoption of these courses at the college and university levels so as to open the doors of higher education for all those who could not enter the formal system for some reason or other. The Education Commission (1964-66) also pointed out that the correspondence courses started by the University of Delhi as a 'pilot project' have proved to be a promising experiment and are producing satisfactory examination results. In view of this, the Commission recommended that correspondence courses should be extended as widely as possible and should also include courses in science and technology. Such courses would reduce the capital cost to a substantial extent especially as the enrolment grows. They are the only means to provide higher education to those who desire to study further but are compelled on economic grounds to take up employment at the end of the school stage. The Commission suggested that by 1986, at least one-third of the total enrolment in higher education be provided through a system of correspondence courses and evening colleges. These recommendations encouraged various universities and institutions to start education programmes which can be broadly categorised as follows:

1. Correspondence Courses offered by the Boards of Secondary Education at the secondary level.

2. Correspondence Courses offered by the traditional universities at the tertiary level.

3. Distance Education Programmes offered by Open Schools.

4. Distance Education Programmes offered by Open Universities.

5. Educational Television and Radio Programmes to supplement formal classroom teaching at the primary, secondary and tertiary levels and for adult education.

Correspondence Courses at the Secondary Level

Secondary education is concerned with the education of students of Classes VIII to X, and higher secondary education includes students of Classes XI to XII. It is terminal for those who enter the world of work after this stage, and for the rest it is preparatory to higher education. In 1983, there were 56,323 secondary/higher secondary schools and the enrolment at the secondary level was 97,45,419, and at higher secondary level 51,01,435. However, as a result of the recommendations of the NPE 1986, there was a significant increase in the number of secondary and higher secondary schools and in enrolment during the period from 1987-88 to 1990-91. During this period enrolment at secondary and higher secondary levels increased by 16.8% and 17.6%, respectively. The number of secondary schools increased from 54,845 in 1987-88 to 59,468 in 1990-91 and that of higher secondary schools from 16,460 to 19,151. But in spite of arduous efforts by the state and central governments, there are unserved areas in the country where there is no school for 10 to 20 km. like in some tribal and desert or hilly areas where enough children are not available to be enrolled due to low density of population. The disparities in enrolment on account of gender and socio-economic status are also significant. In 1990-91, girls accounted for 33.4% and 32% of the enrolment at the secondary and higher secondary levels, respectively. Scheduled Castes accounted for 11.85% at the secondary stage and 9.7% at the higher secondary stage. The corresponding figures for Scheduled Tribes are 4.21% and 3%, respectively. Moreover, the drop-outs from the secondary and higher secondary schools created an enormous increase in the number of those demanding education at these levels. In view of the increased number of unschooled children as well as the children who came out of elementary education, correspondence education at the secondary level was started in 1965 when the Conference of Board of Secondary Education recommended starting of correspondence courses with the objective of improving the academic standards of private students. The Board of Secondary Education, Madhya Pradesh, was the first to start correspondence courses in 1965 followed by Patrachar Vidyalaya, Delhi, which started such courses in 1968. Presently, the Boards of Secondary Education, Rajasthan, Orissa, Uttar Pradesh and Tamil Nadu also provide correspondence education to students of Classes X-XII. However, putting all the states together, the enrolment in the correspondence education institutes at the school level was as low as 0.31% in 1985. Besides this low enrolment, there were wide discrepancies among various categories which include ruralites, Scheduled Castes, Scheduled Tribes and girls.

Correspondence Courses at the Tertiary Level

In view of the growing demand for higher education, a need was felt for starting correspondence education so as to help in expanding and equalising educational opportunities. The University of Delhi made a pioneering effort by starting correspondence courses for the Bachelor's Degree in 1962. Since a large number of students got attracted to this programme, the University Grants Commission on the recommendations of the Education Commission (1964-66) formulated guidelines for introducing correspondence courses in universities. The Punjabi University, Patiala, was the second university to start correspondence courses in 1968. University of Rajasthan, Jaipur, also set up an Institute of Correspondence Studies and Continuing Education in the same year. Institutes of correspondence courses and continuing education were started in Meerut University and Mysore University in 1969. The period between 1970 and 1980 witnessed a major thrust in the correspondence education programme as

institutes of correspondence education/ directorates were set up in as many as in 19 universities. It is worthwhile to mention that during 1960s, only undergraduate courses were started as an experimental measure, whereas the 1970s witnessed the introduction of post-graduate, diploma and certificate courses as well. Between 1980 and 1986, seven more universities started institutes of correspondence courses. By 1992, there were 41 universities offering correspondence courses in the country. The institutes of correspondence studies in the universities offer undergraduate, postgraduate and diploma courses mainly through the print media. Some institutions use radio and TV talks to supplement lessons. The eligibility criteria, curriculum and examination system are more or less the same as those followed conventionally in their respective universities and colleges. Personal-contact programmes and counselling sessions of 7 to 10 days duration are also organised by the institutes for their students. The learning outcomes of the students are measured through assignments submitted by them. It is worth mentioning that recently a few universities like Mysore, SNDT Women's University, Mumbai, Andhra, Annamalai and Madurai Kamraj have adopted open admission policies by relaxing formal qualifications for entry to undergraduate courses. This innovative step is significant as it would provide flexibility to the strict and rigid admission criteria maintained by the Indian university system for almost 150 years. Such relaxations in the system are likely to provide momentum to the efforts for providing greater access to higher education for a larger chunk of the population, particularly those adults who are not able to complete their school education.

Distance Education Programmes by Open Schools

The formal education system at the school level can hardly tackle the problem of educating the out-of-school learners and drop-outs, besides those who are eager to learn and fall in the age-group of 15-35 years like working adults and housewives. Moreover, the rural girls, Scheduled Castes and Scheduled Tribes, and unemployed/part-employed persons due to certain social and economic constraints are unable to complete their school education. In order to the solve the problem the Government of India, after a series of meetings of working groups constituted for the purpose, decided to start the 'Open School System' as an alternative to the formal system. The Central Board of Secondary Education was asked to take up the Open School Project. The first Open School in the country was set up in 1979 in New Delhi to: (i) offer a parallel non-formal system as an alternative to formal schooling; (ii) provide an opportunity of education to out-of-school learners, school drop-outs, working adults, housewives, learners from the disadvantaged section of society and those living in remote areas of the country and not in a position to join regular schools; (iii) offer secondary, senior secondary, technical, vocational and life-enrichment courses through distance teaching techniques and methods; (iv) offer bridge/preparatory courses leading to the secondary level courses; and (v) promote a distance learning system of education through research, publication and dissemination of information. The open school system has some special features. It is open to all without restrictions of an upper age limit or rigid educational qualifications. The operations of the system are not limited to any region or country. It is open to all who need its services in India or abroad. The scheme of studies and examination is flexible. The learner is free to select subjects of his choice from a given list and enjoys learning at his own pace. He may pass the examination in one or more attempts, passing all the subjects at one time or one by one in nine attempts within a period of five years. The learners may opt for English or Hindi as the medium for studies and examination. Instruction is provided through printed lessons developed in simple language. The facility of

Resource-cum-study Centres are provided to the learners all over the country for face-to-face teaching and counselling. A moderate fee is charged from the learners. Scheduled Caste and Scheduled Tribe candidates, women, ex-servicemen and the handicapped are exempted from the tuition fee.

In addition to provision of education at home to out-of-school learners, the Open School in 1979 introduced a 'Bridge Course' also for those who dropped out in Classes VI, VII or VIII to enrol in the secondary course (Class X). The senior secondary course (XII) was launched in 1988. In 1989, the Delhi Open School was upgraded and became the National Open School. Now it is an autonomous institution for providing relevant, continuing and developmental education through the Open Learning System to the needy clientele, as an alternative to the formal system. The National Open School has decentralised academic and administrative responsibilities relating to admission, student support services and evaluation to 161 accredited institutions throughout the country, which serve as resource cum-study centres. The School has made a commendable achievement with regard to its access to people, catering to the educational needs of those who require its services (Singh, J. 1988). Starting with a meagre enrolment of 1,672 students in 1981-82, presently the National Open School draws candidates from all over India, including the rural areas of North-East Region, Andaman and Nicobar Islands, and abroad from age-groups between 17 to 40 years. These include Scheduled Castes, Scheduled Tribes and slum dwellers of cosmopolitan cities and in-service non-matriculate teachers.

Distance Education Programmes by Open Universities

The first open university in the world was established in the United Kingdom. It served as a model not only in India but also in other countries of the world. In India, the efforts in this direction were initiated in 1971 when a committee under the chairmanship of Sri G. Parthasarathy recommended that an open university at the national level be established. Till 1985, this recommendation could not be given any concrete shape. However, at the state level the government of Andhra Pradesh on the recommendations of a committee under the chairmanship of Prof. G. Ram Reddy, the present University Grants Commission Chairman, the legislature of Andhra Pradesh enacted the "Andhra Pradesh Open University Act" in 1982. It was in August 1982, that the first State open university in India was inaugurated by the then President, Sh. Giani Zail Singh, and Prof. G.Ram Reddy was appointed as its first Vice-Chancellor. The university has made considerable progress and presently it is providing access to higher education to more than 30,000 adults to upgrade their skills and improve the quality of their life. Inspired by the successful experiment of Andhra, the government of Maharashtra appointed a ten-member committee under the chairmanship of Dr. K.G. Deshmukh, the then Vice-Chancellor of Amaravati University, to examine the feasibility of starting an open university for the state. The committee recommended the creation of an open university for the state of Maharashtra. Two other states, Rajasthan and Bihar, also felt the need to start an open university so as to provide access to higher education to needy students through the distance mode, and in 1991 three more state open universities, namely Kota Open University (Rajasthan 1987), Nalanda Open University (Bihar 1989), and Yashwantrao Chavan Maharashtra Open University (Maharashtra 1989) were established.

At the national level, The Indira Gandhi National Open University (IGNOU) was established on 20 September 1985 by an Act of Parliament. The objects of the university are to: (i) advance and disseminate learning and knowledge by a diversity of means, including the use of any communication technology; (ii)

strengthen and diversify the degree, certificate and diploma courses related to the needs of employment and necessary for building the economy of the country on the basis of its natural and human resources; (iii) provide access to higher education for large segments of the population, and in particular, the disadvantaged groups such as those living in remote and rural areas, including working people, housewives and other adults who wish to upgrade or acquire knowledge through studies in various fields; (iv) promote acquisition of knowledge in a rapidly developing and changing society and to continually offer opportunities for upgrading knowledge, training and skills in the context of innovations, research and discovery in all fields of human endeavour; (v) provide an innovative system of university-level education, flexible and open, in regard to methods and pace of learning, combination of courses, eligibility for enrolment, age of entry, conduct of examination and operation of the programmes with a view to promote learning and encourage excellence in new fields of knowledge; (vi) contribute to the improvement of the educational system in India by providing a non-formal channel (through open university and distance education systems) complementary to the formal system and encouraging transfer of credits and exchange of teaching staff by making wide use of texts and other software developed by the university; (vii) provide education and training in the various arts, crafts and skills of the country, raising their quality and improving their availability to people; (viii) provide or arrange training of teachers required for such activities or institutions; (ix) provide suitable post-graduate courses of study and promote research, (x) provide counselling and guidance to its students; and (xi) promote national integration and the integrated development of the human personality through its policies and programmes.

IGNOU has already initiated certain effective steps to fulfill these objectives by a diversity of means of distance and continuing education. It seeks the cooperation of certain existing universities and institutions of higher learning and makes full use of the latest scientific knowledge and new technology to offer a high quality education to the needy.

The Board of Management of the IGNOU, in July 1991, framed the statutes for the establishment of a Distance Education Council (DEC), a Statutory Body under the IGNOU Act for the promotion, coordination and maintenance of standards of Distance Education System at the national level. The powers and functions of the DEC are to: (i) develop a network of open universities/ distance education institutes in the country in consultation with the state governments, universities and concerned agencies; (ii) identify priority areas in which distance education programmes should be organised and to provide such support as may be considered necessary for organising such programmes; (iii) identify the specific client groups and the types of programmes to be organised for them, and to promote and encourage the organisation of such programmes through the network of open universities/ distance education institutes; (iv) promote a flexible and open system of university-level system in regard to methods, course structure, eligibility and examination; (v) promote the organisation of programmes of human resources development for the open university/distance education system; (vi) recommend to the Board of Management of IGNOU, the pattern and nature of financial assistance that may be sanctioned to state open universities/distance education institutions and the conditions that may have to be fulfilled by them to receive such assistance; (viii) take such steps as are necessary to ensure the coordinated development of the open universities/distance education system in the country; (ix) establish and develop arrangements for coordinating and sharing the instructional materials prepared by different open universities/distance education institutions and student support systems with a view to avoiding duplication of efforts; (x) evolve procedure for sharing of courses and

programmes and for the payment of royalty or other charges to the members of the network whose courses and programmes are used by other members; (xi) prescribe broad norms for charging fees from students who join various programmes offered by the network of open universities/distance education institutions; (xii) collect, compile and disseminate information relating to the courses and programmes offered by various open universities/distance education institutions; (xiii) advise state governments, universities and other concerned agencies on their proposals to set up open universities, or to introduce programmes of distance education; (xxiv) appoint Review Committees from time to time to study and assess the performance of the open universities/distance education institutions participating in the network on any aspect relevant to the functioning of the network; (xv) prescribe a broad framework for courses and programmes, including their pattern and structure; (xvi) evolve norms, procedures and practices in respect of admission, evaluation, completion of course requirements, transfer of credits, etc., of the students admitted to the programmes of the open universities/distance education network and for the award of certificates, diplomas and degrees to them; (xvii) evolve guidelines for the organisation of student support services for the open university/ distance education programmes; (xviii) provide an innovative, flexible and open system of university education for the promotion including introduction and continuation of courses and programmes which conform to the standards prescribed by DEC, to maintain such standards in the institutions offering distance education programmes and to prevent institutions from offering courses and programmes which do not conform to the standards laid down by the DEC through such measures as are considered appropriate; (xix) appointment committees to assess, in consultation with the concerned open universities/distance education institutions, the development grants required by them for a five-year period and make recommendations to the Board of Management of IGNOU for sanctioning such grants; and (xx) sanction grants to open universities/distance education institutions for specific projects on the basis of reports by duly appointed committees and in accordance with guidelines prescribed for the purpose and report such approvals to the Board of Management.

In view of the objectives set by IGNOU and its various bodies, the university has emerged as a pioneering distance education institution not only for India but for all the Third World countries. Since its establishment, the university has launched a number of activities to give effect to the mandate given to it. In order to promote distance/open education, the IGNOU on the recommendations of DEC had made available grants to state open universities and has also taken the initiative in starting IGNOU study centres in the UAE. The DEC has initiated activity in credit transfers and common grading patterns in order to achieve coordination in the distance education system in the country. In addition, IGNOU has provided grants to enable the state open universities to use the materials produced by the other open universities. Moreover, a central data-base, with nodes in the state open universities, is being created by IGNOU. It will facilitate coordination by making available a dependable body of information on distance and open education system at the national level. In order to maintain high standards in the open learning system, the IGNOU through DEC has initiated certain effective steps through funding to: (i) support staff training and development activity in state open universities; (ii) computerise certain crucial operations in state open universities; (iii) enable the staff of the state open universities to attend academic activities in India and abroad, and to publish important research work; (iv) establish audio-visual production facilities in the state open universities; and (v) launch programmes for validation and quality assurance activities in the open universities in the country.

Educational Television and Radio

The stations of the All India Radio broadcast educational programmes for primary school-children in sixteen regional languages, including Hindi. These programmes are broadcast for 15 to 20 minutes on three to five working days in a week for general awareness. The broadcasts for secondary school students are based on the prescribed syllabus and are relayed for 15 to 20 minutes on all school working days in a week. Adult education programmes are also covered by radio broadcasts of 15 minutes duration a week by about 14 All India Radio stations.

The National Council of Educational Research and Training (NCERT), New Delhi, has developed a number of programmes on school education. The national TV network through INSAT-IB telecasts these school education programmes for students in the age-group of 6-8 years and 9-11 years daily in the morning for 3 hours and 45 minutes on about 220 school days in five regional languages, namely, Hindi, Gujarati, Marathi, Oriya and Telgu. These are telecast from Monday to Friday for students followed by programmes for primary school-teachers on Saturday.

The UGC develops enrichment programmes in English on higher education. These programmes are telecast on the national television network for one hour followed by a repeat telecast the same day on five days a week through the "countrywide classroom programme". Some imported programmes are also telecast on the national TV network. Adult education programmes in regional languages are also telecast by some regional television centres.

IGNOU has developed some video and audio programmes to supplement the print material for its courses, and since 1991 these programmes are being telecast on the national TV network for half an hour in the mornings, three days a week.

In order to produce quality learning material, the UGC has set up the Educational Media Research Centres (EMRCs) and Audio Visual Research Centres (AVRCs) at different universities for production of software, for research, and for orientation of personnel. The Government of India has also set up the Central Institute of Educational Technology (CIET) at New Delhi and six State Institutes of Educational Technology (SIETs), one each in the six INSAT States, for production of Educational Television Programmes.

STUDIES ON OPEN AND DISTANCE EDUCATION

Open and distance education in India, as discussed earlier, is emerging as an effective and need based component of education at the school and tertiary levels. The addition of an open school at the national level and open universities at the national and state levels to the traditional type of distance /correspondence education programmes offered by various boards of school education and formal universities have contributed positively to the development of the open education system. However, the researches conducted under the umbrella of "Open and Distance Education" were not reported in any of the earlier surveys. The purpose of this report is to fill this gap so as to trace the trend of researches from 1971-92 in this important emerging area. It is pertinent to mention here that some of the researches included in this review are reported in the earlier surveys under such general or broad categories as 'Educational Technology', 'Teacher Education', 'Non-Formal Education', or 'Higher Education'. But the reason for including such studies in this report is to highlight the studies together so that the emerging trends in the open and distance education system can be properly delineated and discussed.

Research in open and distance education in India gained momentum in the late seventies. The studies in this area that formed the corpus for the present review included mainly doctoral researches and reports of research projects completed by individual researchers/

institutions. Moreover, the review is not restricted to data-based field studies only but it includes some relevant theory-based papers also so as to reflect the current status and trends in this emerging area.

Organisation and Classification

The organisation of the report is as follows:

1. Enrolment Trends and Courses;
2. Growth, Development and Social Relevance of the Distance Education System;
3. Needs and Characteristics of Distance Learners;
4. Development and Production of Course Materials;
5. Instructional Strategies and Methodology;
6. Economics of Distance Education;
7. Evaluative Studies.

Important features of studies and papers in terms of the themes covered and the findings are included in each category. Some recommendations pinpointing research needs in open and distance education system for future action are also made.

Enrolment Trends and Courses

During the last two decades the enrolment of distance learners increased considerably at the school and tertiary levels. A large number of girls; children and youth from various disadvantaged groups of Scheduled Castes, Scheduled Tribes and ruralites drop-out of the school, colleges or universities due to poor economic conditions, social taboos or their inability to cope with the rigid demands of the formal education. The following discussion pertains to enrolment figures and nature of the distance education courses at the school and higher education levels.

School Level

The main objectives of the distance/open education programmes at the school stage is universalisation of education for achieving social equity and justice, and creating a learning society. Distance education at the school stage is an effective alternative to meet the challenge of bringing unschooled children within the fold of education. Mukhopadhyay, M. and Sujatha, K. (1988) have pointed out that a large majority of the unschooled children constitute girls, Scheduled Castes and Scheduled Tribes, and rural impoverished people. However, in 1985 the proportion of students enrolled in distance education was far too low as compared to those who were in schools. Putting the states, namely, Madhya Pradesh, Delhi, Rajasthan, Orissa and Tamil Nadu together, the enrolment in the correspondence education institutes at the school level was 62,962 or 0.31% of the total enrolment in secondary education. Correspondence education at the school stage in Rajasthan was started as early as 1968. In his paper, Bakliwal, B.C. (1988) reported that the number enrolled in the 'self-study' programme in Rajasthan was 2,325 in 1968, which rose to 30,260 in 1988. In Madhya Pradesh, the Institution of Distance Education and Open School, of the Board of Secondary Education was started in 1965. Previously, it was known as Institute of Correspondence Courses. It was catering to the needs of intermediate students who were appearing in large numbers as private candidates at the intermediate examinations conducted by Board of Secondary Education of the state. Alkari, S.K. (1988) reported that since the success rate of these students was very low, it was thought that they should be coached through correspondence lessons before taking the examination. In 1987-88, correspondence courses for Classes X and XII were started so as to provide a parallel mode of non-formal system which helped the state in lessening the burden on formal schooling.

The open education programme at the school level was first started as a project of the CBSE in 1978 and was later subsumed in the National Open School (NOS). The Open School has made

a significant contribution in providing relevant, continuing and developmental education to needy prioritised disadvantaged groups. Making a humble beginning in 1989-90, currently the NOS has a cummulative active enrolment of over two lakh students drawn from each state and UT of India. These students include prioritised groups, namely, rural people, urban poor, girls and women, Scheduled Castes, Scheduled Tribes and backward classes, the handicapped, war widows and ex-servicemen, the unemployed or part employed, groups in need of a second-chance education for employment, better employment or self-employment; and school drop-outs after the primary or middle stage. State-wise enrolment in academic courses in 1992-93, as reported in the NOS Annual Report, indicates a steep rise in the enrolment figures from 34,781 in July 1991 to 53,567 in July 1992

— a rise of over 56%.

The state-wise enrolment of the students in academic courses reported in NOS Annual Report is reproduced in Table 1.

From Table 1, it is evident that the highest number of students enrolled was from Delhi (36%), followed by West Bengal (13%), Haryana (11%) and Uttar Pradesh (8%).

Region-wise, the highest enrolment was from the Northern Region (64%), followed by the Eastern Region (17.5%), North-Eastern Region (9%) and Western Region (7.5%). The lowest registration was from the Southern Region (2%).

The profile of the enrolled students in academic courses (1992-93) with regard to course-wise registration, medium offered, male-female ratio, category-wise distribution, age-wise distribution and subjects offered indicated the

Table 1

State-wise Enrolment (Academic Courses)

1992-93

State/Union Territory	Total	Percentage
State		
Andhra Pradesh	616	1.15
Arunachal Pradesh	1,250	2.33
Assam	78	0.15
Bihar	1,038	1.94
Delhi	19,485	36.38
Goa	368	0.69
Gujarat	95	0.18
Haryana	6,114	11.41
Himachal Pradesh	876	1.64
Jammu and Kashmir	67	0.13
Karnataka	199	0.37
Kerala	126	0.24
Madhya Pradesh	757	1.41
Maharashtra	2,679	5.00
Manipur	956	1.78
Meghalaya	32	0.06
Mizoram	771	1.44
Nagaland	1,155	2.16

Table 1 *(Continued)*

State/Union Territory	Total	Percentage
Orissa	2234	0.44
Punjab	901	1.68
Rajasthan	1,721	3.21
Sikkim	854	1.59
Tamil Nadu	205	0.38
Tripura	403	0.75
Uttar Pradesh	4,033	7.53
West Bengal	6,850	12.79
Union Territory		
A and N Islands	350	0.65
Chandigarh	1,281	2.39
Daman and Diu	05	0.01
Pondichery	10	0.02
APO	58	0.11
Total	53,567	100.00

the following trends:

(i) Of the total number of enrolled students, the highest enrolment was in the secondary course (59%), followed by the senior secondary course (39%). The enrolment in the bridge course was low (2%).

(ii) 70% students in the bridge course, 62% in the secondary course and 64% in the senior secondary course offered Hindi as their medium of instruction. The remaining students offered English.

(iii) The ratio of male and female students was 63% and 37%, respectively.

(iv) Of the total number of students, 3% were Scheduled Castes and 6% Scheduled Tribes. The enrolment in the handicapped category was as low as 0.68%.

(v) The highest enrolment in the age-group 17-19 years was 42.7% followed by 32.64% in the age-group 20 years and above. The enrolment in the age-group 14-16 years was the lowest (24.7%).

(vi) At the secondary stage, the maximum number of students offered English (89%), followed by social sciences (81%), Hindi (79%), science (53%), and economics (51%).

(vii) At the senior secondary level, the maximum number of students offered English (89%), followed by Hindi (78%), political science (57%), history (52%) and economics (48%).

The state-wise enrolment in vocational courses in the session 1992-93 from the different states and Union Territories indicated that 2,887 students registered in the National Open School and their state-wise numbers for different vocations reported by the NOS is reproduced in Table 2.

Table 2 indicates that the highest number of students enrolled for vocational courses was from Delhi (30%), followed by Andhra Pradesh (26%), Kerala (17%) and Uttar Pradesh (8%).

The profile of the students, enrolled for different vocations, highlighted in the Annual Report of NOS (1992-93) presented the

following trends:
  (i) Of the total number of 2,887 students enrolled for vocational courses, 1,880 (68%) were male and 1,002 (32%) were female students.

  (ii) One-year vocational courses attracted highest number of students (1,851), followed by six-month vocational courses (384), general and life-enrichment courses (256), Jan Swasthya (218) and Secretarial Practice (178).

  (iii) Trade-wise, the highest enrolment was in one-year vocational courses of radio and TV repairing and refrigeration and air-conditioning with enrolment of 504 students in each course. House-wiring, electric appliances and motor rewinding (394), and cutting, tailoring and dress-making (340), were other popular courses.

Table 2
State-Wise Enrolment (Vocational Courses)
1992-93

State/Union Territory	Total	Percentage
State		
Andhra Pradesh	751	26.05
Bihar	65	2.25
Delhi	879	30.44
Gujarat	35	1.21
Haryana	84	2.91
Kerala	480	16.65
Madhya Pradesh	40	1.38
Maharashtra	644	2.22
Orissa	60	2.08
Rajasthan	51	1.76
Tamil Nadu	90	3.12
Uttar Pradesh	243	8.43
West Bengal	01	0.03
Union Territory		
Chandigarh	44	1.52

Tertiary Level

The total enrolment in higher education (universities and colleges) in 1975-76 was 24,90,319 out of which 64,210 studens were enrolled in distance education. This gradually increased to 4,54,243 by 1988-89. For comparative analysis, the data for enrolment in university departments and colleges (formal system) and distance education for the period 1975-76 to 1988-89, computed from Annual Reports of UGC and official documents of the Department of Education, Ministry of HRD, Government of India, are presented in Table 3.

Table 3
Total Enrolment in Higher Education in India and Share of University Departments and Colleges (formal system) and Distance Education (universities and institutions)

Years	Institutions University Deptts. and Colleges	Distance Education Universities and Institutions	Total Enrolment
1975-76	2,426,109 (97.4)	64,210 (2.6)	2,490,319 (100.0)
1976-77	2,431,563 (96.8)	79,718 (3.2)	2,511,281 (100.0)
1977-78	2,564,972 (95.6)	119,163 (5.5)	2,684,135 (100.0)
1978-79	2,618,228 (95.1)	133,459 (4.9)	2,751,687 (100.0)
1979-80	2,648,579 (95.1)	136,699 (4.9)	2,785,278 (100.0)
1980-81	2,752,437 (94.3)	166,428 (5.7)	2,918,863 (100.0)
1981-82	2,952,066 (93.8)	193,691 (6.2)	3,145,757 (100.0)
1982-83	3,133,093 (94.1)	197,555 (5.9)	3,330,648 (100.0)

Table 3(Continued)

Years	Institutions University Deptts. and Colleges	Distance Education Universities and Institutions	Total Enrolment
1983-84	3,307,649	NA	- -
1984-85	3,404,096	NA	- -
1985-86	3,570,897 (91.0)	355,090 (9.0)	3,925,987 (100.0)
1986-87	3,681,870 (91.1)	357,791 (8.9)	4,039,661 (100.0)
1987-88	3,814,417 (89.4)	402,720 (10.6)	4,217,137 (100.0)
1988-89	3,947,922 (89.7)	454,243 (10.3)	4,402,165 100.0)

Annual Growth

Rate of Enrolment (in percentage)

1975-76 to 1982-83	3.7	17.4	4.2
1982-83 to 1988-89	3.9	16.2	4.7

Note: Figures in parentheses indicate the percentage of total enrolment.

It is worth mentioning that in 1989-90, 83% of the enrolment in distance education was in the institutes of correspondence studies and 17% in the open university system. Moreover, enrolment in the three major open universities, was 37145 in 1989 in Andhra Pradesh Open University (APOU); 18327 in 1990 in Kota Open University; (KOU) and 1,18,442 in 1991 in Indira Gandhi National Open University (IGNOU). In the theme paper of Conference of Vice-Chancellors in 1990, it was reported that the annual growth rate of enrolment in correspondence courses and open universities during the past few years has been especially higher than that in the conventional universities. It may be seen from Table 3 that while the annual growth rate of enrolment in universities from 1982-83 to 1988-89 was around 4%, in distance education during this period it was over 16% per annum. The enrolment in distance education has gradually gone up from 2.6% of the total enrolment in universities and colleges in 1975-76 to over 10% at present. Singh, A. (1992) pointed out that distance education system has been able to accommodate an additional number of 3,17,544 students during the last decade. He is of the opinion that with distance teaching institutions and, in particular, open universities, steadily gaining popularity and attracting a larger clientele for the first time, the target of enrolling about one-third of all students at the university level in correspondence education, as envisaged by the Education Commission (1964-66), appears possible of achievement by A.D. 2000.

Tables 4 to 6 present data pertaining to enrolment and academic programmes/courses offered by IGNOU, APOU and KOU.

The process of admission begins with the announcement of academic programmes on offer in leading national and regional newspapers during May/June every year. Admission is granted on the basis of entrance test/self-appraisal or on the basis of merit depending upon the nature of the course. Reservations for certain categories of candidates are provided as per the norms of the Government of India. Generally, the session begins from January of the following year.

The enrolment data presented in Tables 4-6 reveal following significant trends:

(i) The total enrolment in IGNOU in the seven years since its inception rose from 4,381 in 1986-87 to 75,666 in 1992-93, and it is anticipated that the enrolment may touch 83,000 in 1993-94, i.e., the increase in enrolment would be about 20 times.

Table 4

Enrolment in Indira Gandhi National Open University

(Year-wise and in Various Programmes/Courses)

			Year-wise Enrolment			
	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92
	4,381	16,811	42,324	48,281	52,376	62.3375

Programmes/courses		Enrolment	
	Men	Women	Total
1. Diploma in Creative Writing in English	(cumulative figures for 1988-91) 1294	715	2009
2. Postgraduate Diploma in Distance Education	(cumulative figures for 1987-91) 3743	1504	5247
3. Bachelor of Library and Information Science	(cumulative figures for 1989-91) 2337	1062	3399
4. Post-graduate Diploma in Higher Education	(programme launched in 1992)		
5. Certificate in Food and Nutrition	(cumulative figures for 1988-91) 2799	4802	7601
6. Diploma in Management	(cumulative figures for 1987-91) 28160	1291	29451
7. Diploma in Computers in Office Management	436	(1991) 48	484
8. (i) Bachelor's Degree Programme (Non-formal)	(cumulative figures for 1987-91) 40,358	9,617	49,975
(ii) Bachelor's Degree Programme (Formal)	12,515	3,9234	16,449

Table 5
Enrolment in Andhra Pradesh Open University in 1988-89

Programme/Course		Enrolment		
		Men	Women	Total
1.	B.A., B.Sc., and B.Com.(Ist year enrolment)	11,381	4,985	16,366
2.	Bachelor of Library and Information Science	401	175	576
3.	Postgraduate Diploma in Public Accounts	503	39	542
4.	Postgraduate Diploma in Public Relations.	900	135	1,035

Table 6
Enrolment in Kota Open University in 1988-89

Programme/course		Enrolment		
		Men	Women	Total
1.	B.A. (Preparatory)	1,635	360	1,995
2.	B.A. (Foundation)	95	41	136
3.	B.Com.(Preparatory)	352	18	370
4.	B.Com. (Foundation)	56	06	62
5.	Diploma in Management	1,447	32	1,479
6.	B.J.M.C.	624	96	720
7.	Diploma in Library and Information Science	1,765	964	2,729
8.	B.Ed.	7,734	2,884	10,618

Sources:

1. IGNOU: *Student Profile,* 1991.
2. *Perspectives on Distance Education: Distance Education in India* by Abhimanyu Singh, Vancouver: The Commonwealth of Learning, Vancouver, 1992.

(ii) Some of the courses launched by IGNOU have been popular among women. Women accounted for about 64% of the enrolment in the certificate course in Food and Nutrition. They also comprised over 25% of the total enrolment in the Bachelor's degree programmes for formal students, Diploma in Distance Education and the Diploma in Creative Writing in English.

(iii) Women constituted about 20% of the enrolment at IGNOU as against 29% at APOU and 24% in KOU.

(iv) About 54% of the enrolment in distance education was at the undergraduate level and about 24% at the postgraduate level.

Prasad, V.S. (1987) reported that enrolment in distance education reflects the urban and upper class bias of the university system as a whole. The student profile of APOU revealed that most beneficiaries belong to economically better off families and are from urban areas. IGNOU too had a preponderance of students from urban areas. However, Kulandai, Swamy V.C. (1991) pointed out that 30% of the students in the correspondence institutes were from rural areas.

Singh, A. (1992), on the basis of the Theme Paper presented in the Vice-Chancellor's conference, pointed out that the Southern Region accounts for two-thirds (66%) of the total enrolment, followed by the Northern Region with 27% and the Central and Western Regions with only 5%. It is worth mentioning that the three major universities of the South, viz., Madras, Madurai Kamraj and Annamalai attracted a significant number of students from the Northern and other regions to their correspondence education programmes. However, as far as individual states were concerned, enrolment in correspondence courses was as high as 46% of the total enrolment at the tertiary level. In Tamil Nadu, it was 41% and in Delhi, 34%, followed by Karnataka and Kerala with 6% each, Jammu and Kashmir with 6%, Haryana with 4%, and

U.P. with the small percentage of 1%. It was also pointed out that distance education students were mostly concentrated in 11 institutions, 7 of which had an enrolment of over 20,000 each. These institutions accounted for 84% of the total enrolment in the distance education mode. Moreover, males constituted 59% and females 41% of the total enrolment in distance education. It is noteworthy that this percentage of women compares favourably with 30.5% enrolment of women in the entire university system.

There are regional and institutional imbalances in the development of distance education in India. However, the high enrolment ratio of women indicates that the distance education programmes may adhere to educational needs of this disadvantaged group in the near future. The profile published by IGNOU indicated that most of its programmes are offered in the English language. However, the Bachelor's degree programmes are offered in Hindi also. The Certificate in Food and Nutrition course is available in English, Hindi, Assamese, Gujarati, Kannada, Malayalam, Marathi, Punjabi and Tamil mediums. Since there is need for diversity in the courses offered at a distance to rural areas and the disadvantaged groups of Indian society, with greater emphasis on science, technology and vocational subjects, IGNOU proposes to launch the following courses in the near future: Diploma in Creative Writing in Hindi: M.A. in Distance Education; Certificate in Guidance; Diploma in Rural Development; Master of Business Management; P.G. Diplomas in Human Resource Management, Financial Management, Operation Management, Marketing Management and Journalism and Mass Communication; Diploma in Early Childhood Care and Education; Advanced Diploma in Computer Applications; B.Sc. (Nursing); Master's Degree in Library and Information Science; Certificate in Tourism Studies; Advanced Diploma in Water Resource Engineering; Construction Management. The

state open universities are also expected to offer such courses especially in the regional languages.

Growth, Development and Social Relevance of the Distance Education System

The studies pertaining to the history of the growth of the open and distance education systems in India would not only help to view the current developments of the system in the right perspective but also aid in effective planning of future action. In this category we may include the studies conducted by Anand, S. (1979), Khan, I. (1982), Datt, R. (1984) and Balasubramanium, S. (1986). These studies had highlighted the gradual growth of distance education in the Indian perspective. Since the programme was merely an extension of the system of the regular courses offered by formal universities, it had limitations in meeting the academic and socio-economic needs of target groups of distance learners. However, the studies pointed out that the distance education programmes proved their efficacy as suitable modes of lifelong education. Biswal, B.N. (1979) in his study revealed that: (i) the objectives of correspondence instruction imparted through different universities remained similar more or less all over the country; (ii) the academic staff pattern remained more or less similar in all universities, whereas differences were marked with regard to the administrative staff pattern; (iii) the enrolment rate was found to be higher in arts, commerce and education in comparison to other disciplines; and (iv) admission procedures were found to be liberal in nature.

Reddy, R.G. (1987) made a strong plea for the development of open and distance education systems in India. Coming to the reasons why the systems should be adopted and encouraged, he emphasised the prevailing educational inequalities across different classes and geographical regions, the deterioration in the quality of education and its lack of relevance today as the main reason for which we need to move on to a different educational strategy. He held the view that the origin of distance education lies basically in the philosophy that the society has a responsibility to provide educational opportunities to those who for some reason or the other cannot go to the conventional system. Takwale, R. (1987) also emphasised that it is desirable to develop the open education system using distance methodology to ensure quality of education, extension of educational opportunity and serve large numbers with the diversity of courses that are relevant to the individual and also to societal needs.

The relevance of the distance education system in the context of Indian society has also been highlighted by Jayagopal, R. (1987). He pointed out that the Indian societal pyramid reveals that the base of the pyramid is broad which indicates that the lower class, as represented by the masses, constitute a large number. The middle and the upper classes that occupy the higher ranks of the pyramid, are numerically very low. The complex social stratification and a large number of people who are living below the poverty line, pose a challenge to the educational policy makers in terms of providing appropriate education, and hence it is desirable to evolve the education system through the distance mode as an alternative to the formal system. Prasad, V.S. (1987) in his study also pinpointed the need for the open education system so as to extend educational opportunities to a very broad cross-section of people. How and to what extent the open university can mould itself to satisfy the real needs of the Indian people was studied by Bhattacharya, Sudip (1991). The period between 1960 and 1985 was regarded as the most progressive period for the development of distance education in the developed and developing countries including India in his study. The study further revealed that the comprehensive educational programme, in the name of Visva-Bharati Lokasiksha Samsad of Sriniketan, developed by Tagore and his

associates was not only a forerunner of the present-day open university, but also a model for the development of open universities in India. A good comparison between the salient features of the models of Rogers, Sriniketan and traditional university has also been made in the study.

Needs and Characteristics of Distance Learners

The studies of Anand, S. (1979), Khan, I. (1982), Gomathi, M. (1982), Pilliai, J.K. and Mohan, S. (1984) and Sahoo, P.K. (1985) are included in this category. Improvement of qualifications and the desire to continue with higher education were identified as major motivating factors for joining the correspondence course, in almost all the studies. Non-avaialability of time, mental maturity, non-existence of colleges in the locality, heavy expenses in formal colleges, age, employment, paucity of time, poor financial condition and poor performance in the last qualifying examinations were found to be some other additional reasons (Sahoo, P.K. 1985 and Khan, I. 1982).

Most of the characteristics of the distance learners identified by various studies included several background variables like age, sex, marital status, regional background, academic qualifications, parents' education, self-occupation, employment and income. Anand, S. (1979), Gomathi, M. (1982), Khan, I. (1982), Pillai, J.K. and Mohan, S. (1983), and Sahoo, P.K. (1985) in their studies revealed that most of the learners belonged to the 16-35 year age-group. While most of the students in the lower age-group of 16-25 years continued with undergraduate classes, most of the students in the 26-60 years age-group continued with post-graduate courses. The majority of the distance learners were males. Most of them were from the upper castes, pursuing different types of vocations, like teachers, administrators, clerks, sales and service workers, farmers, mechanics and labourers. A sizable number of them were identified as first-generation learners. Besides

these, Sahoo (1985) found a large number of learners having 1 to 10 years gap between their last qualifying examination and enrolment in the present courses.

The studies conducted by Upreti, D.C. (1988), Gautam, R. (1990) and Pugazhenthi, G. (1991), in addition to other factors, also explored those distance learners' characteristics and aspirations who had joined teacher education programmes through the distance education mode. Upreti, D.C. (1988) found that the majority of distance learners joining B.Ed. through correspondence courses had graduated in humanities and social sciences with low percentage of marks at school and college levels. A positive relationship between learners' characteristics and success in distance learning at B.Ed. level was reported by Gautam, R. (1990). The age of the teacher trainees in the distance mode ranged from 25 to 61 years in the study of Pugazhenthi, G. (1991). Also, a sizable number of students, both at the B.Ed. and M.Ed. levels, had the rural background.

Development and Production of Course Materials

The success of any distance education programme mostly rests with the development and production of course materials keeping in view the background and needs of distance learners. In this exercise there may be radical departures from many of the concepts, approaches and methods of the formal education system. The course material needs to be self-instructional so as to provide the maximum flexibility in its structure and design. Takwale (1987) in his conclusions on the 'Dimensions and Extensions of Distance and Open Educational Systems' suggested that distance education should offer relevant courses that are self-instructional and provide experiential learning and freedom to learners. He opined that at higher levels, the development of knowledge, critical thinking and higher cognitive and affective abilities need to be emphasised.

A number of studies on the development and

production of course materials, both at the macro and micro-levels, have been conducted by various researchers. However, hardly any in-depth study on the designing of innovative courses for distance education programmes at the national has been undertaken by any institution/university. Mulay, V. et al. (1986) pointed out that correspondence institutions have been looking forward to introducing innovative courses. But the parent university course development bodies looked upon the innovative proposals with suspicion and discouraged experimentation in most instances. This statement is corroborated by the studies conducted by Anand, S. (1979) and Sahoo, P.K. (1985) which revealed that at undergraduate and postgraduate levels, traditional subjects like arts, commerce, languages and education are offered by the majority of institutions. In their studies, Gupta, M.L. (1985), Biswal, B.N. (1979), and Rathore, H.C.S. (1991) have pointed out that the instructional materials supplied to the distance learners are not designed scientifically. The course materials are mostly written in essay-type format lacking the pedagogy of self-learning. Moreover, the materials are sketchy and the contents are not fully elaborated and explained with sufficient examples/illustrations. The self-tests/exercises at the end of the course units are stereotyped and hardly develop interest among the students. However, in some studies it was found that the students, mostly at the university level, depend solely on print-based course materials/lesson scripts for completing their studies. A large majority of students, reported difficulties in the comprehension and language of the course materials in the studies conducted by Sahoo, P.K. (1985) and Koul, B.N. (1987). It has been pointed out by Biswal, B.N. (1979), Datt, R. (1984) and Mulay, V. et al. (1986) that the revision and evaluation of the course materials is hardly carried out by the institutions and in view of this, the internal faculty members of various correspondence institutes had expressed a desire to undergo training in the pedagogy of distance education.

One of the main objectives in the study conducted by Pillai, S.S. (1988) was to assess the curricular aspects such as syllabus, instructional materials and evaluation so as to prepare a data-base for designing distance learning programme for the postgraduate diploma in English for teachers of professional institutions in India. On the basis of the responses to the questionnaire, most of the principals and English teachers of polytechnics in the Southern Region commented on the inadequacy of the syllabus in spelling out specifically the objectives, and they expressed a strong plea for preparing a good textbook in English to meet the specific requirements. It was also found that guided exercises/tests are mostly prepared by teachers. Pugazhenthi, G. (1991) found that the teaching faculty mostly lacked expertise in writing scripts for course materials for distance learners.

In order to improve the quality of the course materials it is advocated that we must adopt the idea of 'course writing teams' instead of leaving it to an individual teacher to write lesson/scripts. But it has been pointed out by Weingartz, M. (1981) that this approach is expensive, and it may lead to a depersonalised style of presentation contrary to the style of didactic communication and may tend to support the presentation of learning material as ready-made systems rather than as guides to problem-solving. Hence, the efficacy of the team approach in course writing and its economic viability needs to be studied in the Indian context. Only one study by Venkataiah, N. (1989) on the feasibility of course materials for distance education by a course team has been reported. The main objective of the study was to suggest a good model for course material production. The investigator hypothesised that: (i) the success of distance education basically depends on quality of the course materials; (ii) the Course Team Approach would be helpful in preparation of qualitative instructional material; and (iii) the Course Team Approach adopted and practised by the British Open University would

be useful for India. The major findings of the study are that: (i) adequate attention should be paid to the writing of course materials; (ii) the standard or quality of instructional materials should not be sacrificed, whatever might be the financial constraints; (iii) the Course Team Approach of the British Open University, though expensive, is feasible, economically viable and justified if the course material is used for a large number of students; and (iv) the Course Team Approach will ensure good-quality instructional material.

Instructional Strategies and Methodology

This section is confined to a discussion of the studies pertaining to: (i) instructional processes and the role of information technology; (ii) submission of assignments; (iii) the role of the personal contact programmes; and (iv) study-centre support services. The use of course materials in the form of lesson scripts, assignments, and personal contact programmes are the major strategies in most of the distance education institutes.

The Instructional Process and the Role of Information Technology

The success of open and distance education programmes depends largely on effective and flexible guided instruction. Koul, B.N. et al. (1987, p.6) pointed out that the absence of prolonged human interaction with the distance learner gives the open learning system a propensity for greater dependence upon information technology. They opined that as compared to the formal system, the open learning system can derive greater benefit from this association in order to develop itself as a viable alternative to the formal learning system. In order to improve the open learning system, effective and meaningful use of various aspects of information technology like electronic publishing of course materials, computers and telecommunications has been suggested.

The 'course material' distributed among the distance learners replaces the teacher in the open learning system. It is regarded as a 'teacher in print'. The distribution of course materials among the distance learners should be well planned and time bound. The usage of the material needs clarification. It may be pointed out that no comprehensive study to explore the organisational machinery and frequency of the despatch of course material to distance learners has been undertaken. However, the studies by Nagaraju, C.S. (1982), Sahoo, P.K. (1985), Balasubramanium, S. (1986) and Rathore, H.C.S. (1991) have indicated that the despatch of course materials to the distance learners is irregular and time-consuming. In some cases the course material was received just before the commencement of examinations.

The audio-visual aids and other media like radio, TV, etc., have a distinctive role in the open learning system. However, these should not be introduced with a view to replacement of the essentials of the traditional teaching-learning strategies like chalk-and-talk, book-and-examination, etc. Amritavalli, R. (1987) was of the opinion that the role of educational technological gadgets should be supplementary to the traditional system so as to provide education to a large number of students. The experiences of a few open learning institutions in the developed countries have demonstrated that a 'lecture controlled' approach was found to be more effective in expanding the reach of distance education. Under such a system, while the media personnel would play the supportive role of extending the reach of education, the lecturer would deliver lectures as he would do in a traditional classroom. The TV programmes of IGNOU and UGC (country-wide classroom) are worth mentioning in this context. However, the educational programmes which the UGC telecasts on the national TV network are not linked with the courses taken by the majority of the distance learners. Hence, the utility of these telecasts as a supplement to distance

learning programmes is somewhat doubtful. Rathore, H.C.S. (1991) has pointed out that these telecasts may be serving some general interests of both the regular on-campus and distance students but often fail to serve the specific learning needs of the distance learners pursuing a wide variety of courses. Studies conducted by Biswal, B.N. (1979), Khan, I. (1982), Sahoo, P.K. (1985) and Balasubramanium, S. (1986) revealed that none of the institutes of correspondence courses telecast educational TV programmes. However, an account of the education television programmes telecast by Madras Doordarshan for students of formal education, adult and non-formal education has been presented by Ananthasayanam, R. and Rajamani, N.C. (1988). Nagaraju, C.S. (1982) found radio programmes useful in the in-service teacher training programmes in Kerala State, though all the teacher-trainees did not regularly listen to all the radio broadcasts related to the training course.

In the distance education system it is strongly advocated that various media need to be integrated for making the instructional process effective. The main problem is not how many media should be used but how we integrate the media with the course structure. In this context, Pathak, A. (1987) has also emphasised that instead of aiming at the 'Multi-media Approach', we need to aim at the 'Integrated Media Approach'. He opined that an 'Integrated Approach' takes into account the possible value and suitability of each medium and links each new medium with the existing media.

Submission of Assignment

The assignments in the form of Students' Response Sheets are generally attached with the course material supplied to the distance learners by open/distance education institutes. It is considered as one of the effective means for providing feedback to learners to support their learning outcomes. The studies by Biswal, B.N.

(1979), Mulay, V. et al. (1986) and Rathore, H.C.S. (1991) revealed that most of the students, who received the evaluated response sheets well in time, appreciated compulsory submission of assignments and found them useful to some extent in pursuing their courses. However, in a study of Madurai Kamraj University, Pillai, J.K. and Mohan, S. (1984) reported that students do not appreciate the compulsory submission of assignments. Regarding the study hours of students, Anand, S. (1979) conducted a small sample survey. He reported that, on an average, a pre-university student spends 259 hours per session for completion of studies and takes around 70 hours for writing assignments.

The didactic comments of the tutors/ teachers on assignments provide a meaningful feedback to distance learners. Some studies were conducted to assess the didactic quality of the tutor's comments. Mulay, V. et al. (1986) found that the comments varied from institution to institution. Nagaraju, C.S. (1982) and Sahoo, P.K. (1985) pointed out that the tutors/teachers of distance education institutions did not make serious attempts to clarify students' efforts. In addition to this, Biswal, B.N. (1979) and Sahoo, P.K. (1985) also found that students wanted detailed comments on their assignments and appropriate evaluation of their performances.. In view of the importance of the comments of the tutors, Koul, B.N. (1987) suggested that if teachers in distance/open learning systems are made aware of what teaching-type comments are like, and what they can do in terms of teaching, and how they might be written and used purposefully, the system of distance teaching will function more effectively than they do otherwise.

Personal Contact Programmes

Personal Contact Programmes (PCPs) provide face-to-face support to instructional programmes in the distance education system. Anand, S. (1979), Biswal, B.N. (1979), Sahoo, P.K. (1985) and Rathore, H.C.S. (1991) reported that almost

all the distance education institutes had the provision of PCPs. However, the study by Mulay, V. et al. (1986) revealed a significant variation among the institutions in the organisation of the PCPs. There is a large variation among the open learning institutions with regard to the duration, participation of staff and students, and mode of conducting the programmes. Sahoo, P.K. (1985) and Balasubramanium, S. (1986) pointed out that mostly PCPs are organised in cities. Regarding the attendance in the PCPs, Anand, S. (1979) reported 18% attendance of the pre-university students of Punjabi University. On the other hand, Sahoo, P.K. (1985) reported 70 to 80% attendence in courses for which participation in PCPs was compulsory at Himachal Pradesh University; and 33% attendence in courses where participation was voluntary. He further revealed that compulsory/ optional provision of attendence, selection of venue of PCPs, nature of employment, financial constraints, lack of proper facilities for boarding and lodging, and lack of prior information to students influence students' attendence at PCPs. This finding was also corroborated by Rathore, H.C.S. (1991).

Sahoo, P.K. (1985) revealed that no uniform policy was maintained in directing teachers for selection of topics for teaching during PCPs. Balasubramanium, S. (1986) reported that the topics of lesson notes were repeated in most of the cases. The methods used for teaching in PCPs were lectures followed by questions-answers. Because of paucity of time, most of the teachers covered the selected topics through lectures. Anand, S. (1979), Biswal, B.N. (1979), Khan, I. (1982), Pillai, J.K. and Mohan, S. (1983), Sahoo, P.K. (1985), Balasubramanium, S. (1986) and Rathore, H.C.S. (1991) found that most of the students who attended PCPs expressed a positive opinion about their usefulness in terms of clarification of doubts, getting inspiration for further studies, better preparation for examination, solving academic problems, and effective teacher-student

interaction. Success in distance learning system was found to be intimately associated with PCPs in a study by Gautam, R. (1990).

The drop-out rate in the distance education system was reported to be high in the studies by Sahoo, P.K. (1985) and Balasubramanium, S. (1986). Mostly, the drop-outs belonged to the upper age-groups with larger gap of time between their last qualifying examination and admission in the present courses; they belonged to the poorer academic and family background, rural areas, the female group, and the employed class of people. Non-attendance in PCPs, lack of library study facilities, lack of proper teacher-student contacts, non-availability of reference materials, non-payment of semester fees, non-submission of the required number of assignments, and difficulties in studying the course materials/lesson scripts were reported to be the major problems of the drop-outs. Quite a large number of drop-outs aspired for continuing with their studies further provided certain improvements are brought about in the system. Khan, I. (1982) reported that the majority of the students drop-out of the correspondence courses because of compulsions such as family problems (including ailment), unfavourable service conditions, high tution fees, less contact with teachers, poor service by the institutes, and lack of regular college life and loneliness of the distance learners.

Study Centre Support Services

In the instructional process, the distance learners generally fail to get immediate feedback from the teachers. Moreover, the distance education institutes hardly provide good library facilities to them so that they can supplement their studies. Although non-contiguous two-way communication in the form of self-learning material with submission of assignments and face-to-face teaching, tutoring and discussion during the personal contact programmes are helpful to some extent in providing immediate feedback to distance learners, yet these

measures alone are not adequate to provide them all such benefits as are enjoyed by the on-campus regular students. Hence, in order to strengthen the instructional process some open/distance education institutes established study centres of their own in various towns and cities. Singh, B. (1987) pointed out that a network of study centres is of vital importance to distance education institutes for providing useful support to students in their learning pursuits. Each study centre usually has a counsellor who is competent enough to give general counselling, advice and guidance to students on the methodology of learning through the distance education system and general aspects of the various courses. Some study centres have good library, audio and video equipment and other facilities. Mani, G. (1987) evaluated various learning support systems of the distance education programme of Madurai Kamaraj University. The sample of the study was drawn from post-graduate students from three out of five personal contact programmes organised in different places in Tamil Nadu. The students among other aspects of the support system reported that the 'study centres' are very few and ill-equipped. They expected that the study centres should have a full-fledged library, radio, audio-tapes, TV, video-cassettes and a full time instructor for academic and administrative counselling. Rathore, H.C.S. (1991) also pointed out that the study centres of correspondence institutes in India are not fulfilling the purpose of supporting the distance learners the way they are ideally expected to. In the light of the results of the study, he suggested that library of the study centres should be equipped with standard text and reference books. Moreover, book-bank facilities should be created for the benefit of distance learners. The presence of a tutor should also be ensured at the study centres daily at fixed hours.

Economics of Distance Education

Education has both consumption as well as investment value. It benefits those who are provided education and the country which utilises their services in various development activities. Since the calculation of socio-economic and cultural benefits pose serious difficulties, the studies in the economics of distance education have been confined mostly to studying the cost or financing aspects of this system. Studies conducted in this area mostly pertain to the analysis of sources of income of the system, expenditure of the system, unit cost, and cost benefit analysis, especially in comparison to those of the regular streams. The studies conducted by Biswal, B.N. (1979), Khan, I. (1982), and Sahoo, P.K. (1985) have revealed that the major sources of finance of distance education were students' fees, and rarely were funds raised through grants from other sources'.

The study conducted by Pandey, S.K. (1980) pointed out that the unit costs of correspondence courses were much lower than those of regular courses. With regard to recurring income, it was found that correspondence courses supported themselves without government subsidy and mostly depended on students' fees. However, in the case of non-recurring income no difference was found between the two streams. A significant difference existed between per-student expenditure on direct cost, indirect cost and total cost at enrolled and appeared levels, whereas no significant difference was marked with regard to direct cost per-student at pass level. Gupta, M.L. (1985) found that the development of correspondence education in Rajasthan had not taken into account the economic needs of the State. However, on the cost comparison, correspondence courses were more economical than the regular courses (Ram, S. 1984, and Gupta, M.L. 1985).

A comparative study of unit costs in the School of Correspondence Courses and Colleges of Delhi University by Datt, R. (1988) revealed that in the latter, not only the unit costs but also state subsidy was substantially higher than in the former. He suggested that keeping the norm

of one-third of the cost of distance education system as against the formal university system, it would be desirable to realise 25% of the student expenditure from student fees while the remaining 75% should be state subsidy. Ansari, M.M. (1987) attempted to isolate the factors which may be responsible for making the system of distance education cost-efficient and cost-effective. He identified choice of educational media, number of students and number of courses as the major determinants of the distance learning system and argued that while the fixed cost of the preparation of course material may be cheaper under the correspondence method, the same may be relatively higher under the audio-visual method because of the involvement of costlier transmission and reception equipment and a relatively high level of salaries of technical and media personnel. The variable costs in both the cases would, however, depend upon the number of students and the number of courses offered. Azad, J.L. (1987) pointed out that the financial and management policies relating to distance education should be given a closer look. He suggested that the expansion programmes of distance education in India should be based on a well thought out, integrated plan of development, taking into consideration the manpower needs of the country on a long-term basis. Further, the investment, particularly in the electronic equipment utilised by the distance education systems, should be based on their academic effectiveness. In the comparative study by Agrawal, P.D. (1987) unit costs of distance education and traditional education in the context of the Entrepreneurial Development Training Programme conducted by the Small Industries Service Institute (SISI), Karnal which imparts education through regular classroom lectures and the All India Manufacturers Organization (AIMO), New Delhi, which imparts education through correspondence, it was revealed that the unit cost at AIMO is higher by 39% than that at SISI, which is mainly due to the lower level of utilisation of the teaching and

administrative staff at AIMO. As the major portion of the expenditure is incurred on staff salaries which influence the fixed costs, there is need to make optimum and efficient utilisation of the existing staff. Because of inadequate data, it was difficult to draw conclusions about the extent of unit cost variations in the professional education provided through general and distance education, in a comparative perspective.

Evaluative Studies

In this category most of the studies have been conducted on the comparison of the achievement of students of the correspondence and the regular streams. Anand, S. (1979) and Pandey, S.K. (1980) reported that the achievement at the undergraduate level was better in case of distance education students in comparison to regular students. Sahoo, P.K. (1985) reported poorer performance of correspondence course students in comparison to the regular students of B.A., M.A. and M.Com. courses of H.P. University. Similar results at the postgraduate level were reported by Mulay, V. et al. (1986). In the comparative study of correspondence and formal education, Bahuguna, R.C. (1988) found that the achievement of B.A. students of the correspondence mode was lower than that of the students in formal stream. However, the correspondence course students had mostly a poor academic background when compared to their counterparts in the regular stream. Moreover, the correspondence courses were more economical and less expensive than the regular courses.

Khan, I. (1991), reported that there was a year-wise increase in the enrolment from 1977-78 to 1988-89 of B.Ed. students in distance education in Kashmir University when compared to the formal system. In the distance education stream, there was a high rate of state-wise enrolment of B.Ed. students when compared with the formal system. The pass percentage in both the streams was almost equal. During

1977-78, the pass percentage ratio between non-formal and formal systems was 60:63.5, and during 1988-89, it was 62:65. The teaching competency of teachers trained through the formal system was better than that of those trained through the distance mode. The per capita cost in the distance education system was found to be less when compared to the formal channel.

The approaches to learning and academic performance of students in traditional and open universities in a comparative perspective were studied by Das, M. (1992). The main objectives of the study were: (i) to identify the relationships among learner, content and context characteristics and approaches to learning of students in open and traditional universities, and to find out the predictability of such approaches; (ii) to identify the relationships among the learner, content and context characteristics and academic performance of students in the open and traditional universities and to find out the predictability of such approaches, and (iii) to compare the approaches to learning as well as academic performance, of students in open and traditional universities. Using the samples of one open university (IGNOU) and two traditional universities, it was revealed that: (i) the students in the open university significantly differed from students in the traditional university in terms of the learner, content and context approaches to learning; and (ii) the learner, content and content characteristics significantly correlated with the approaches to learning and academic performance of students both in open and traditional universities.

OVERVIEW

In the preceeding discussion, the quantitative growth and trend of research during the last two decades in the distance and open education system have been traced. The analysis of the researches reveals the following significant features of the system along with the scope and quality of research conducted in this emerging area:

1. Research in the distance and open education systems did not make much headway during the seventies. It gained momentum in the eighties when more and more institutes/universities started correspondence courses. Most of the researches are descriptive surveys confined to a comparison of the enrolment trends and the academic achievement of students in the formal and distance modes. Issues relating to the needs of distance learners and their characteristics, drop-out phenomena, preparation of instructional material and submission of assignments, status of study centres, organisation of personal contact programmes, and finances have also been studied as isolated events lacking proper follow-up research.

2. Most of the research studies are based purely on arbitrary combinations of variables relating to psychology, pedagogy, media and information technology, finances, etc., without much relevance to either the theory or the practice of distance open learning systems in the Indian context. The researches generally lack long-range perspective without any relevance to future planning. The problems, needs and issues of local, regional or national importance, especially in the context of the disadvantaged clientele have been mostly ignored.

3. The methodology of the studies indicate that researchers have mostly adopted the descriptive survey approach and quantitative analysis techniques. The case study approach, experimentation for testing the efficacy of various approaches/models and qualitative data analysis techniques hardly find any place in the conduct of studies.

4. Impact and intervention studies for programme development and evaluation of distance education system are virtually non-existent.

5. The studies indicate that presently education through distance mode is offered both at the school and tertiary levels in two major forms:

(i) correspondence courses run by state boards of school education or by conventional universities; (ii) the distance education offered by open schools in school-level courses or by open universities for undergraduate or post-graduate students.

6. Data reveal that correspondence courses provide greater access to: (i) school education for children who missed school education; (ii) to higher education for working people, women and other disadvantaged groups, and people residing in remote areas. The enrolment of distance learners at the school and tertiary levels has been continually increasing. But there is unevenness in the spatial distribution of distance education. Institutes of correspondence and open education are being established without taking into account the potential of the catchment area and the socio-economic and manpower needs of the region/country.

7. Correspondence/open education institutes have reduced pressure on the formal schools, colleges and universities. However, education through the distance or open mode is looked down upon as a second-rate system of education.

8. Distance/correspondence courses are mostly confined to languages, social sciences, or humanities. Professional or vocational courses are few, and are limited mostly to the diploma and certificate levels. Efforts to offer courses in science through the distance mode are limited.

9. Education through the distance mode is more cost-effective than through the formal/conventional system and has advantages of economics of scale. However, the correspondence courses are often diluted versions of courses offered in the formal mode and retain the same rigidities with regard to admissions and examinations.

10. The course materials of most of the correspondence/distance institutions are prepared in a hurry and without any consideration for quality. However, in IGNOU courses are introduced on the basis of identified manpower needs. The quality of the course content is maintained by involving professional practioners. The despatch and evaluation of assignments submitted by distance learners is time bound, but this is mostly neglected by most of institutions of correspondence/distance education. However, the Personal Contact Programmes organised by IGNOU are effective in solving the academic problems of distance learners.

11. The distance education institutes are mostly print-based and not multi-media based. However, IGNOU uses the latest communication and information technologies to provide instruction.

12. In most of the distance education institutions 'Student Support Services' are virtually non-existent. However, at the national level IGNOU has been able to provide an effective, extensive network of Regional Study Centres all over the country. Through this effort the university has been able to attract students from almost all the states and Union Territories.

13. Faculty development/improvement programmes are not given importance by almost all the distance/correspondence institutions. In the absence of an apex organisation, the maintenance of standards in distance education by the institutions is completely ignored. IGNOU, through the Distance Education Council, has taken effective steps to ensure that high standards are maintained in the educational provision made by the distance and open education institutions in the country. The State Open Universities have already taken steps to share the expertise and resources of IGNOU for staff development, planning and management and to use some IGNOU course materials.

RESEARCH NEEDS

Distance and open education have now been firmly established on the Indian educational scene as important, effective and meaningful alternatives to the formal system of providing

education and of enlarging the access to educational opportunities.

At the school level, there is a National Open School and several open schools have been planned in the states. At the tertiary level, there are five open universities. The IGNOU operates at the national level and is also the apex institution for open and distance education in the country. The other four open universities exist in Andhra Pradesh, Rajasthan, Maharashtra and Bihar. One more open university at the state level is likely to be established in Madhya Pradesh. In addition, some state boards of school education and about 42 conventional universities now have distance/correspondence teaching units. The distance education system has been identified as an important thrust area in the Eighth Plan and it is proposed that distance education should absorb 50% of the additional enrolment during the Plan period, envisaging the total enrolment in distance education programmes at the tertiary level to be 15 lakh.

Although the distance and open education systems are to play a crucial role in the educational development of the country, it is a fact that there is shortage both of trained personnel in distance education and, even more serious, absence of relevant data which may be used for planning distance education programmes both at the school and higher education levels. Almost the entire distance education system is planned and executed on the basis of intuitive judgements and assumptions. Such judgements relate to almost every component of distance education programmes, including such crucial factors as student enrolment and profiles; cost-benefit analyses; students' needs and characteristics; students' expectations about counselling and tutoring; student support services, including study centre functioning; development, choice, and use of audio-visual materials; formats of print materials; and other important issues which are crucial to the functioning of distance education system. Research is, therefore,

neededto: (i) generate knowledge on various aspects necessary for the successful creation and operation of distance education systems; (ii) enable practioners in the distance education systems to encapsulate their experiences for the benefit of future researchers; (iii) contribute to the emergence of distance education as a discipline; (iv) strengthen the morale of the distance education community in the country and help to attract talent to the field of distance education; (v) provide policy-makers with a true picture of the potential of distance education to ensure high-quality education to a large number of needy learners, especially at the higher education level, at a reasonable cost. To achieve these objectives, it is suggested that the University Grants Commission and the Indira Gandhi National Open University may undertake the responsibility of commissioning and assisting research projects jointly so that the two systems—the formal/conventional and the distance/open—could come together and students in the open system might be able to enjoy the benefits of the more flexible system together with the credibility which the conventional system offers.

Research in distance and open education in India is still in its infancy. Researchers select problems and topics which they feel are useful and conduct research on them without considering their utility in meaningful development of the distance/open education system. Hence, the research in this emerging area could not relate itself effectively to the formulation of the theory and practices of distance education. It is, therefore, worthwhile to pin-point certain priority areas for undertaking research in distance education. These areas may be of immense help to researchers in selecting problems which demand immediate attention:

1. Identification of the academic, professional and vocational courses keeping in view the needs of various target groups, including deprived sections of the society, with the help of comprehensive survey studies.

2. Development of course materials and their efficacy through experimental and follow-up studies.

3. Orientation and training of teachers, administrators, and other supporting staff in distance education using various models developed through experimental and longitudinal studies. These models may be confined to script writing, editing, organisation of personal contact programmes, evaluation of assignments, computer applications, office management, production of audio-video programmes, choice of media and communication technology.

4. Augmentation and strengthening of student support services, improvements in the delivery system, decentralisaion of administration and extensive use of communication systems need to be studied using the experimental and the case study approaches.

5. Development of formative and summative models for evaluating performance of distance learners with the help of well designed experimental studies.

6. In most of the developed countries, the 'Quality Assurance Activity' has been formally initiated, both at the institutional level and at the apex level. Therefore, it is necessary that similar steps may be taken in India to ensure that the quality of the educational provision made in the distance education institutes in conventional universities and open universities is routinely monitored and the results of such monitoring disseminated. Since quality assurance procedures in the context of distance education are still evolving in many countries, it would be worthwhile to launch pilot research studies/projects using longitudinal/experimental research designs to arrive at an agreed and knowledge-based set of guidelines/parameters.

7. Cost-effectiveness of the ongoing programmes of distance/open education in relation to institutional costs and private costs need to be studied. In the 'institutional costs' we may indicate both recurrent costs (staff salaries and benefits, training materials, utilities, maintenance of facilities, staff training, student service, etc.) and capital costs (annual costs of buildings, equipment, and vehicles, etc.). The 'private costs' may include both direct costs (tuition and other fees, room rents, books, supplies and transportation) and 'indirect costs' which pertain to earnings foregone as a result of taking the course.

8. Evaluative studies pertaining to organisation, methods, procedures, and results in terms of the learning outcomes of distance learners, and the impact of distance/open education on the socio-economic development of various target groups deserve special attention for planning and policy-making.

It is gratifying to note that Distance Education Council, as a Statutory Authority under the IGNOU Act for performing the functions of an apex body for open universities in India, has proposed initiating effective steps for promoting quality research in distance and open education at the fundamental, the experimental and the application levels in order to constantly enrich the training programmes, management processes, distance education systems, and meet the challenges of the changing times and needs, and the new communication and information technologies. The steps will be directed to: (i) create a centralised pool of researchable topics reflecting the priorities and thrusts in the distance system; (ii) establish a Distance Education Research Committee to screen proposals for research fellowships and grants for minor and major research projects; and (iii) provide financial support for short-term and long-term fellowships for undertaking minor and major research projects as well as for M.Phil. and Ph.D. level research studies.

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