CHAPTER - II

REVIEW OF RESEARCH IN DISTANCE EDUCATION IN INDIA
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- **Introduction:**

  Distance Education system is progressing in India. However, research in this mode of education is limited. There is need for conducting research on distance education since it provides the empirical data which can be used for the development of the system.

  Studies have been carried out on Indian Open and Distance Education since seventies. Most of the studies lacked comprehensiveness, methodological rigour, and compatibility with the system and its practices.

  When, for the first time, formal correspondence education was implemented in India in 1962 at higher education stage, there was much doubt and caution, for this mode was commonly perceived as a second channel for the leftovers of the campus-based colleges and universities. Though the underlying philosophy at macro level was to equalize educational opportunity and democratize higher education.

- **Status of Educational Research**

  Distance education is a branch of education and, therefore, distance educational research and practices have been influenced by the research on adult learning and adult education.

  M.B. Buch was the pioneer in the field of educational research in India. Buch has so far carried out the 4 surveys on the research in education (1974, 1979, 1987, 1991). The paper of Buch and his team (Buch, 1991a) indicates the present status of and the concerns in educational research. By March, 1988, nearly 3289 PhD studies and 1415 research projects in the discipline of education were completed. The first PhD in education was awarded by the University of Bombay in 1943 (Buch, 1991a). It is important to note that during 1989-90, 496 PhD degrees were awarded (UGC, 1991), and as per the Sixth Survey of Educational Research, from 1993 to 2000 (Published by NCERT 2006) the total number of Research and Projects were 2789.
• Research in Distance Education

Distance education as one of the stream of non formal education has a recent history, but has expanded considerably. Therefore very few researchers give thought to it. The Open University System established in India in 1982, there has been significant developments in the field of distance education. It is observe that the distance education have precedence in practices of correspondence education that related to the establishment of DEIs within the conventional universities.

All the researches in Open Distance Education were included in the Fifth survey, i.e. from 1971-92. In India the system of distance education is about three decades old. In the fifth survey of Educational Research (1997) the studies in Open Distance Education dealt with enrolment trends and courses growth, development and social relevance, needs and characteristics of learners, development and production of course material, instructional strategies and methodology, economics of Distance Education and evaluation of the system, covering period from 1971 to 1992. The review was confined to about fifty eight studies which included thirty two data based studies and about twenty four theory based articles relevant to some significant issues related to Open Distance Learning system.

Eleven data based studies covering the period of 1993 to 2000 has been covered in the Sixth Survey of Education Research. The number of studies indicates that Distance Education has not made much progress in research in the last decade.

• Rationale For Research In Distance Education In India

The open and distance education system was introduced in India for number of reasons. Correspondence education was introduced in 1962 by Delhi University, in distance education specially to cope up with the growing demand for higher education, as Delhi University could not offer seats in its constituent colleges to all desirous candidates. Hence, correspondence education programme was offered as an alternative mode of education. This mode also opened new opportunities to those who had discontinued studies and were now in occupations. This new system of education motivated a large number of persons from various categories of professions and age-groups.

This alternative mode of distance education was being followed by other universities and the states. The unit cost of education through this mode and the
overall economics of distance education became a major source of motivation for others to adopt it. Low unit cost compared to formal university education and marginal, almost negligible public cost of education threw up altogether a new way of looking at the issue of provision of educational opportunities.

The educational needs of learners with different social and occupational backgrounds can be catered by Distance Education System. It is necessary, however, to verify from time to time whether it has provided the desired access to the groups for whom it was primarily intended. Moreover, the changing needs and aspirations of anticipated learner groups in particular and society in general can influence the planning and management of distance education system, which will make the system socially responsive. Therefore, research is needed to identify the needs of existing and future distance learners.

Since distance learners belong to a heterogeneous background in terms of age, experience, socio-cultural, educational and occupational backgrounds, sustaining their motivation to continue with courses till completion is a crucial issue. Other factors like personal, occupational, institutional and instructional do affect learners' adjustment with studies in varying degrees. The identification of learners environmental factors that affecting their studies is one of the area of research.

There has been expansion of distance education both at school and higher education levels but its social, academic and labour market acceptability is rather low. There is a urgent need to identify the social, economic and academic factors that affect the acceptability and equivalence of Distance Education. Research should be taken for clearing the misconceptions about Distance Education and enhance its acceptability.

Research in Distance Education has been carried out on a variety of issues. The studies documented so far indicate specific aspects. On the basis of different aspects, researches in Distance Education have been classified into the following heads:

**PART - I**

I. Growth of Distance Education: Policy, Planning and Management

II. Programmes and Courses

III. Distance Learners

IV. Instructional Processes

V. Course Development and Evaluation
VI. Output and Impact of Distance Education

VII. Economics of Distance Education

I. Growth of Distance Education: Policy, Planning And Management

The above classified studies cover enquiries regarding policies of the Distance Education system, nature of courses and level of courses offered through Distance Education, enrolment, physical facilities etc. in the Indian context. The first study of this category was conducted by Dutt (1976). The study was conducted on the trend of enrolment in correspondence courses from 1971 to 1976 taking into consideration the nature of courses, annual compound rate of enrolment and levels of courses. There have been instances of studies on organizational aspects of correspondence courses by Anand (1979), Balasubramaniam (1986), Biswal (1979), Dutt (1984 & 1988), Khan (1982), Nagaraju (1982), Pugazhenthhi (1985), Rao (1980), Sahoo (1985a & 1989), Sudame and Pugazhenthhi (1986), Satpathy (1989), Singh (1979), and UGC (1986). Almost all the studies highlight the gradual growth of DE in the country as a mere extension of the system of regular courses offered through traditional universities. Therefore, the courses have had limitations in meeting the academic and the socio-economic needs of distance learners.

Biswal’s (1979) study, which covered almost all the correspondence institutions of India revealed that (i) the objectives of correspondence courses offered through different universities remained almost the same all over the country; (ii) the academic staff pattern remained more or less similar in all the universities, whereas differences were witnessed with regard to administrative staff patterns; (iii) enrolment rate was found to be higher in Arts, Commerce and Education than in other disciplines. The UGC (1986) study also revealed very similar facts about correspondence courses in the country. Mishra (1991) revealed that majority of the distance education institutes in the universities had no autonomy, innovativeness and decision making power.

With regard to the enrolment of DE institutions in India UGC (1986) study revealed that enrolment varied from 500 (Meerut) to 68,554 (Madurai) these was tremendous imbalance amongst regions with regard to enrolment. Dutt (1986) reported, Distance Education institutions in the southern region enrolled 9.5 percent of the total enrolment in universities and colleges of the region concerned, whereas the eastern region had only 0.4 per cent of the total enrolment in DE institutions. At
the state level, Himachal Pradesh and Tamil Nadu have enrolled 42 percent and 22 percent of the respective state level total enrolment in higher education. Sahoo (1989) found a similar trend of enrolment in distance education during 1986-87. Inspite of high enrolments in Distance Education, there were 11 out of 26 universities during 1982, which were treated as non-viable units because of admitting less than 2500 students. Takwale (1987) has emphasised the development of open education system using distance methodology to ensure quality of education. Jayagopal (1987) has highlighted the relevance of the distance education system in the context of Indian society. Prasad (1987) also has pointed out the need for open education system so that educational opportunities can be extended to a broad cross-section of people.

Bhattacharya (1991) studied how and to what extent open university can mould itself to fulfill the requirements of rural India. It was revealed by UGC(1986) that the institutes of correspondence courses were treated as separate units of the universities for all practical purposes. However, they were governed by the rules which are usually framed for regular courses and thus, inappropriate for Distance Education. As the status of Distance Education institutions inside the traditional structures was neither that of a teaching department nor that of a college, the power and status of the directors remained undefined.

Satpathy's (1989) study highlights the future expansion of the Distance Education system as national and state level open university systems, innovative practices in means and media used, and growth of enrolment upto almost twenty five percent of the total enrolment into higher education that expected by the year 2001. It has been visualized that changes would occur in the organisation of Distance Education, that mostly functioning within the traditional university system. Sahoo's (1989) analysis of enrolment of Distance Education including correspondence courses and open universities revealed that towards the beginning of the 21st century (by 2002 AD), the total enrolment of Distance Education would reach 10.21 lakhs (i.e. over 1 million) provided, the trend of the past 25 years is followed on a linear growth pattern. Interestingly the enrolment has already crossed this figure and there are over 1 million students in the system currently. Singh, et.al. (1994) conducted an indepth study of Correspondence/Distance Education in India and recommended revamping and upgrading correspondence courses into the distance education mode.
• **Relevance of Distance Education and Open Learning**

The researchers related to the relevance of distance/open learning system during the period 1993-2000 include studies conducted by Pandit (1994), Srivastava (1995) and Pandey (1996).

Pandit (1994), in the case study of Dr. B.R. Ambedkar Open University, examined the level of perception of women learners about education in general and distance education in particular. The main objective of the study was to find out the extent to which the existing academic programmes of Dr. B.R. Ambedkar Open University are relevant to the needs, motivation and aspiration of women clientele of urban and rural areas.

The effectiveness of distance education, as compared to traditional education, with regard to expansion and democratization of higher education in Karnataka state was studied by Srivastava (1995). He also found out the relevance of distance education courses to learners individual needs. The study points out that the distance education grew five times faster than the conventional (formal) education in seventies and four times in eighties.

• **Management and Comparative Studies in Distance Education**

The studies in the organization and management of different aspects of distance education in comparative perspective have been conducted by various researchers.

Kanchan Bala (1996) undertook a study to investigate to what extent distance education programmes introduced by the Institute of Correspondence Education, University of Jammu and IGNOU were feasible in Jammu region in respect of their relevance to the needs of the students, problems faced by these organizations in the implementation of distance education programmes and realization of objectives set out by the two universities in the context of admission procedures, enrolment trends of students, infrastructural facilities (building, classrooms, audio-video, library, technological gadgets etc), staffing patterns, orientation of teachers, teaching strategies, use of media-print and electronic, dissemination of information, study materials, assignment system, evaluation, counseling and placement services, management system, and co-ordination between various agencies of Jammu University and study centre of IGNOU. Using historical and descriptive survey
methods, the finding revealed:

i) Instruction to distance learners enrolled with both the institutions is mostly imparted by the teachers drawn from formal system and hence most of them are specifically acquainted with the instructional technology of distance education and open learning.

ii) enrolment percentage of female students enrolled in distance education programmes of Jammu University is higher than that of males in almost all the categories, viz. rural, urban, general, SS, SAT, married, unmarried and employed categories. But in case of IGNOU, males enrolment percentage was higher in all the categories than the females.

iii) Lecture method followed by discussion are used by the teachers engaged by both the institutions.

iv) The submission of assignments in both the institution is compulsory.

The study by Patel (1997) centred upon the different aspects of distance education in Karnataka with a view to identify its trends in terms of growth of higher education in the state and its normative futures towards 2005. The experts view on the normative futures of distance education in Karnataka revealed that the system should cope up with the future increase in the enrolment of students. It should incorporate networking with other distance education institutions and even conventional (formal) mode in the areas of instruction, practicals and utilization of infrastructural facilities.

Sharma (1999) compared the distance education programmes of IGNOU and the Directorate of Correspondence Courses, Himachal Pradesh University (now International Centre for Distance Education and Open Learning: ICDEOL) with respect to growth and development, functioning and management, staffing pattern, orientation of teaching faculty, teaching strategies, preparation of instructional material, evaluation assignment system, finance, infrastructural facilities, counseling and student support services, and academic benefits to disadvantaged groups (SC, ST, OBCs and rural women). Using historical and descriptive survey methods, the findings indicated that the:

i) Male students enrolment of ICDEOL was higher than that of females in almost all the categories of rural, urban, SC, ST, married/unmarried, employed and all students in the age group of 20 to 30 years.

ii) the percentage of male students enrolled in different courses with IGNOU
regional centre (H.P.) was more than that of females in almost all the categories of SC, ST, rural, urban etc;

iii) ICDEOL and IGNOU have given due consideration to the recommendations of UGC and both the institutions cater to the needs of local community and students in starting courses through distance mode

iv) both the institutions have neither started any special course for the disadvantaged groups of Himachal Pradesh nor they have any plan to start any such course in the near future

v) the students belonging to reserved categories viz., SC, ST, OBCs and physically challenged admitted in IGNOU are entitled for reimbursement in fees whereas, which such categories do not get in ICDEOL,

vi) students are admitted to various courses in ICDEOL on the basis of marks obtained in the last qualifying examinations except B.Ed course in which the admission is made on the basis of marks obtained by them in the last qualifying examination and teaching experience. Incase of IGNOU, students are admitted on the basis of marks obtained by them in the last qualifying examination except in case of MBA and MCA. In MCA only those students are admitted who have passed either of the (CIC, BCA, DCO) course from IGNOU. In case of MBA the admission is made through entrance test;

vii) distance learners enrolled with both the institutions do not receive instructional material well in time;

viii) importance and usefulness of contact programmes have been appreciated by the IGNOU teaching faculty and students;

ix) ICDEOL, receive financial assistance form state government and UGC. Tuition fees charged from the students provides a useful source of earning.

The organization and management of distance education programmes under the control of Dr. B.R. Ambedkar Open University was studied by Naidu (2000). The study also identified the problems encountered by the university in planning, organizing and administering distance education programmes. The findings indicated that there is need:

i) To better relations with students, meeting the problems of dropouts, meeting the needs of the students through well organized programmes of counselling and guidance and augmenting new infrastructure facilities for future courses and programmes
ii) for establishment of more number of study centers to provide opportunities in remote and backward areas where higher education facilities either do not exist or are meager;
iii) for policy making and better student support services including delivery system.

II. Programmes and Courses

Out of 40 DE institutions (which include correspondence course directorates and Open Universities), 14 to 30 institutions offered 37 degree level courses at undergraduate and post-graduate levels towards the end of the eighties. While courses belonging to Arts, Commerce and Education have been more popular, courses in other fields like Science, Law and Management have been gaining ground in this system (Sahoo 1989). While correspondence institutions are likely to introduce innovative courses, the approving bodies of parent universities look upon innovative proposals with suspicion and discourage experimentation in most instances (UGC, 1986). On the other hand, some of the potential students, dropouts and products of correspondence courses have shown their keenness to join innovative courses of applied and interdisciplinary nature, provided they are introduced through DE (Sahoo, 1985). However, nothing much has happened in this regard.

III. Distance Learners

A large number of studies conducted in India have focused on distance learners. Some of these studies focus on the needs and aspirations of learners, their motivation to continue and complete courses, and also take in to account the factors influencing learner’s decisions to pursue their studies. However, most of the studies conducted on Indian learners have concentrated on their socio-psychological characteristics. A few studies have been conducted on those learners who discontinued their studies.

Saxena (2000) conducted a study to draw profiles of distance learners at Indira Gandhi National Open University. The objective of the study was to gather information about IGNOU’s learners, their ideas about the programmes, the experience and their status after the programme. The study covered seven programmes of IGNOU from various disciplines. The findings of the study indicated that there are more number of females enrolled in ODE, they live in smaller houses
with 2-3 children and 4-5 family members, most students belonged to lower or lower middle income group, are employed in the public sector and want only the printed text material to study. Most of them feel that IGNOU should be an evening university. Students want to pursue higher education from IGNOU but want new programmes like Environment and Traditional wisdom of India.

- **Needs, Motivations and Aspirations of Learners**
  
  Studies by Anand (1979), Khan (1982), Koul (1982), Kumar et al. (1986), Filial and Mohan (1983), Singh (1983), Sahoo (1985), UGC (1986), and Mishra (1988) reveal that improvement of qualifications and desire for continuing with higher education acted as the major motivation for students in India for joining correspondence courses. Kumar et al (1986), Pillai and Mohan (1983), Sahoo (1985) and Mishra (1988) identified other motivators like improvement in one's profession and the opportunity for further promotion in his/her field. Moreover, sociological factors like improvement in social status have also been identified as motivators of DE learners (Pillai and Mohan, 1983; Sahoo, 1985; and UGC, 1986). A comparative study (Biswal, 1979) on academic motivation of distance and conventional students revealed that correspondence students had lower level of academic motivation than that of their regular counterparts. At the university level, learners joined correspondence courses in preference to regular conventional courses because of several personal and socio-economic reasons. The reasons as identified by Koul (1982) and Sahoo (1985), are: non-availability of time, mental maturity of learners, non-existence of colleges in one's locality and heavy expenses to be met in formal college education. Several background factors like age, employment, paucity of time, poor financial condition and performance in the last qualifying examination have also impacted upon their decision (Khan, 1982 and Sahoo, 1985). At the secondary stage, Singh (1980; 1983) found that learners preferred correspondence courses to regular schooling because of their being employed, their involvement in household activities, non-availability of school facility, and failure in regular courses.

  Studies conducted on university level students (Sahoo, 1985 and UGC, 1986) revealed that a large number of them decided to join the courses on their own. Sahoo (1985) identified homogeneity in the individual responses of the learners with regard to their expectations from correspondence courses irrespective of their being at the
entrance stage, at the course stage or at the course completion stage. Koul (1982) found that in the case of dropouts in distance education, the reasons for joining their courses were of academic and personal type. As it is in the case of students who continue with studies and complete them, the dropouts also had joined the distance education programmes because of their curiosity for learning new disciplines, to obtain professional training and to obtain an additional qualification. Upreti (1988), Gautam (1990) and Pugazhenthi (1991) explored the characteristics and aspirations of the learners who had joined teacher education programmes through the distance mode. Upreti (1988) found that majority of the learners who had joined B. Ed. had graduated in humanities and social sciences. Gautam (1990) reported that there was a positive relationship between learners characteristics and success in distance learning at B.Ed, level. Pugazhenthi (1991) reported that the age of the teacher trainees in distance mode ranged from 25 to 61 years.

- **Background of Distance Learners**

  Studies on the socio-economic and academic background of distance learners in India reveal significant facts regarding distance education system in the country. Unlike the age cluster of regular college students between 16 to 23 years, the age of the majority of correspondence students is between 16 and 35 years (Anand, 1979; Gomathi, 1982, Khan, 1982; Pillai and Mohan, 1983; Sahoo, 1985; and UGC, 1986).

  While most of the lower age group (16-25 years) candidates opted for undergraduate courses (Khan, 1982; Sahoo, 1985; and UGC, 1986), most candidates of the upper age group (20-60 years) enrolled in post graduate courses (Sahoo, 1985). In the case of one of the diploma programmes of IGNOU, a large group of students belonged to 30 - 40 years age group (Misra, 1988). The majority of learner population were men (Biswal, 1979; Gomathi, 1982; Pillai and Mohan, 1983; Sahoo, 1985; UGC, 1986 and Sahoo, 1989). Most of the learners were from upper castes (Anand, 1979; Pillai and Mohan 1983; and Sahoo, 1985) and they were employed and belonged to different cadres of vocations like teaching, clerical jobs, administration, sales service, farming, mechanics and labour, although they mainly came from teaching and clerical jobs (Gomathi, 1982; Pillai and Mohan, 1983; Sahoo, 1985 and UGC, 1986). Almost all the students on management courses of IGNOU are employed and a large number of them have less than 10 years service
experience. However, students with more than 25 years experience were also admitted to the course (Mishra, 1988). A sizeable number of them (30%) were first generation learners. Moreover, a large number of learners had 1 to 10 years' gap between their last qualifying examination and enrolment in the present courses (Sahoo, 1985). With regard to socio-psychological characteristics of the school level students of correspondence courses, Singh (1980; 1983) found that the age of students varied from below 20 upto 40 years with major concentration around 18-21 years (Dewal, 1982). A majority of the school level distance students had 4 to 10 years time gap between their having left a regular school and joining the distance education course (Singh, 1980; 1983). A majority of these students were married, hailed from upper castes, with moderate economic position and around one-third of them were employed (Singh 1980; 1983; and Dewal, 1982).

- **Dropouts in Distance Education**

  At the school level, distance education is an effective alternative for those who cannot attend school. Mukhopadhyay and Sujatha (1988) pointed that unschooled children constitute girls, schedule castes and tribes and rural people.

  Discontinuation of studies has been a serious concern for the Distance Education system everywhere. The rate of dropout in DE at the Central Institute of English and Foreign Languages, Hyderabad was studied and was found be 57% to 66% (Balasubramaniam 1976) and 63% Koul (1982). At the B A. courses of Delhi, Punjab, Bombay, Madurai, Sri Venkateshwara, and Meenit Universities, the dropout rate ranged between 8% to 25% (Yadav and Sharma, 1988). Sahoo (1985) found that during the very first semester about 50 to 75 percent dropouts were from PG courses. Koul (1982) found that 43 percent of total dropouts from a course were at the very outset, at zero lesson level. In general, the dropout rate at DE institutions was found to be higher than that of conventional institutions (Gupta, 1986).

  Mostly, the dropouts belonged to upper age groups with larger gap of time between their last qualifying examinations and admissions to the DE courses, poorer academic and family background, rural areas and employed groups (Sahoo, 1985). In the case of dropouts, men's ratio was higher than that of women (Koul, 1982; Sahoo, 1985). Major problems coming in the way of dropouts were: responsibility at home and place of work; lack of availability of time to pursue studies, inability to attend
contact programmes, lack of proper teacher-student interactions; non-availability of reference materials; inadequate submission of assignment responses and difficulties faced in responding to the study materials (Koul, 1982; and Sahoo, 1985). Non-payment of semester fees was also a reason for discontinuing the studies (Balasubramaniam, 1976). Koul (1982) found that at the Central Institute of English and Foreign Languages, Hyderabad, 20 percent of dropouts aspire to continue with their studies again. Similarly Sahoo (1985) found that 69 percent of the dropouts of the Himachal Pradesh University were interested to rejoin the correspondence courses provided certain improvements were brought about in the system. The dropouts felt the need for improvement in managerial, instructional and evaluative systems of DE (Koul, 1982; Sahoo, 1985).

- **Characteristics and Profile of Distance Learners**

  The characteristics and profile of distance learners have been studied by Anil Kumar (1998) and Kumar (1999).

  The academic self concept, study habits and attitude towards distance education in relation to academic performance at first degree level distance learners enrolled with IGNOU was explored by Anil Kumar (1998). Majority of the learners enrolled in 1991 were male in the age group of 25 years and above. They possessed average academic self concept, exhibited good study habits, held positive and favourable attitude towards distance education.

  Kumar (1999) found the attitude of distance learners enrolled with IGNOU, towards distance education favourable irrespective of their background characteristics. Married students possessed significantly higher positive attitude towards distance education when compared with unmarried ones. However, no significant difference in the attitude was observed among distance learners varying on the other nine background variables of gender, age, locale, social class, academic stream, educational level, employment status, experience in distance learning and discontinuity in studies.

**IV. Instructional Processes**

Distance education depends to a great extent, on educational technology. As a means of open learning, the functioning of distance education depends on better
utilization of instructional strategies. In other words, distance education banks on production of quality learning material, use of a wide range of media emphasising varieties of learning opportunities, and properly organised face to face contact programmes leading to group interaction among learners themselves and with the instructors. Keeping in view these aspects of the instructional system, research is being conducted on two main areas of instruction:

(i) management of instructional processes and

(ii) evolving suitable instructional methods and media inputs. We shall look at both the aspects in some detail as follows:

• With regard to the management of instructional processes, it is crucial to have quality control on the production and improvement of learning packages, appropriate integration of work by subject specialists and experts on communication technology and scheduling of production and despatch of materials. Management of two-way communication between learners and the instructors/institutions through assignment-responses, study centre activities and personal contact programmes is crucial for effective instructional processes in distance education. Moreover, synchronization of mass media systems like radio and TV which remain mostly outside the purview of Distance Education institutions, with Distance Education is another challenge for the management of Distance Education. Evolving suitable alternative mechanisms of management for the instructional system and studying their effectiveness is one of the major concerns of research on Distance Education.

• Studies on the potential values of different methods and the employing of sound theoretical models can help academic decision makers to choose appropriate means of instruction. Studies on evolving multimedia packages for specific subjects, definite instructional objectives, and heterogeneous learner groups are particularly necessary to make the system effective. Besides, availability of resources, time and feasibility are to be kept in mind while consolidating media inputs. How to facilitate flexible teaching-learning environments in which learners' participation in the instructional processes could be enhanced is a major concern in Distance Education. With the emergence of new forms of educational technology, it is necessary that Distance Education keeps pace with their obviously, there is ample scope for studies in these areas to broaden the Distance Education-base, so that the demands of education can be met.
Researches on these aspects in India focus on the effectiveness of different methods and media in experimental situations, studying the existing processes of instructional and evaluation programmes in Distance Education institutions, the usefulness of different components of instructional activities, evaluation system and participants' reaction to the functioning of the instructional system. It is noted that major instructional activities of Distance Education have been restricted to print materials and occasional interaction between tutor and students through assignments and personal contact programmes. In a few cases, instructional activities have been carried out through electronic media like radio, television, audio cassettes, video cassettes and computer programmes (Anand, 1979; Biswal, 1979; Khan, 1982; Pillai and Mohan, 1982; Sahoo, 1985; Balasubramaniam 1986; Kumar et al, 1986; UGC, 1986; and Sahoo, 1989). Various studies conducted on different aspects of instruction are discussed briefly in the following sub-sections.

Print Based Materials

It has been noticed that all the Distance Education institutions at the university as well as the school level depend mainly on print-based instructional material. They may be in modular forms, in self-instructional programmed learning packages, in semi-programmed form or in some other form as prescribed by respective institutions (Biswal, 1979; Singh, 1980; Khan, 1982; Singh 1983; Sahoo, 1985; UGC, 1986). On the part of students, it was found that a large majority of them at the university level (81 to 85 percent) depend on printed lessons for completing their studies (Anand, 1979; Khan, 1982; Sahoo, 1985). However at the school level, around 79 percent of the students depended on regular textbooks, notes and digests besides study materials (Singh, 1983).

All the studies reported the usefulness of printed study materials as perceived by the students in one or the other respect (Anand, 1979; Biswal, 1979; Singh, 1980; Khan, 1982; Pillai and Mohan, 1982; Sahoo, 1985; Kumar et al 1986; UGC, 1986). In most of the cases, study materials were not available in respective Distance Education institutions and did not follow a systematic format. While most of the students, dropouts and products of Distance Education expressed moderate views about the different aspects of lessons like style of presentation, content clarity, suggested references and language (Sahoo, 1985 and UGC, 1986), majority of them pointed out their difficulties in studying the lessons (Singh, 1980 and 1989; Dewal, 1982; Koul, 1982; Khan, 1982; Sahoo, 1985; UGC 1986). A large number of
students (41%) of six universities found the materials too heavily packed with information causing difficulties in studying all the lessons. Moreover, irregular despatch of lessons created problems for students (Singh, 1980; Nagaraju, 1982; Koul, 1982; Singh, 1983; Sahoo, 1985; and UGC, 1986). It was suggested by students and teachers that study materials be made self instructional, reviewed appropriately, edited and proofread properly, despatched in time along with references materials (Khan, 1982; Sahoo, 1985; Kumar et al. 1986). Further, it was found that the students preferred lessons written in Indian languages and most teachers emphasised on the need for acquiring necessary experience through formal training, orientations and workshops for developing effective materials (Khan, 1982; Sahoo, 1985; and Koul, 1986). Mishra and Gaba (1999) conducted an exploratory study into the "use of activities in Self Instructional materials by Distance Learner". Study indicates that students make use of activities which are given in Self Learning Material. They also use white space given in the side margin. Majority of respondents preferred descriptive type of SAOs.

- **Assignments**

Assignment is treated as one of the key components of student support services in Distance Education. Assignments were found useful by most students Himachal Pradesh University (Biswal, 1979 and Sahoo, 1985), University of Kashmir (Biswal, 1979), Regional Colleges of Education (Kumar, et al., 1986) and at school level programmes (Dewal, 1982) whereas in the case of Madurai Kamaraj University the response was negative (Pillai and Mohan, 1983). With regard to the rate of submission of assignments, it was revealed that 55 percent of the students did not submit any assignment at all (Dutt, 1976 and Khan, 1982) and 30 to 36 percent school level learners were not even aware of submission requirements (Singh, 1983). Submission was treated as a mere formality to be fulfilled for appearing in the examination, in cases where such submission is compulsory. In general, student's seriousness was not reflected in their responses to assignments. Most of the teachers, dropouts and successful learners point out several limitations concerning the present form of questions in and coverage of syllabus by assignments (Sahoo, 1985 and Balasubramaniam, 1986). However, most of the students appreciated the importance of compulsory submission, since most of the students who received evaluated
response sheets in time found the system useful to some extent Sahoo (1985), UGC (1986). Anand (1979) reported that on an average, a pre-university student spends 259 hours per session for completion pi."-studies and takes about 70 hours for writing assignments. Kumar et al (1986) revealed that most of the Distance Education students of the Regional Colleges of Education were not appreciative of the procedure followed in evaluating the assignments. DE institutions did not make serious efforts to clear students' doubts (Dewal 1982; Nagaraju 1982; Sahoo 1985), as learners generally expect detailed comments on assignments, and appropriate evaluation of their performance. Mi’lay et al (1986) found that the comments varied from institution to institution. Barring a few cases, because of limited time available for correction of assignment responses, lack of proper guidelines given to the assessors and insufficient remuneration, assessors fail to provide appropriate feedback to learners (Biswal, 1979 and Sahoo, 1985). Further, distance education institutions are not prompt in despatching evaluated response sheets to students on time (Singh, 1980 and 1983; Dewal, 1982; Sahoo, 1985; Balasubramaniam, 1986; and UGC, 1986). Almost all teachers insisted on reasonable distribution of work and flexibility in the assessment system (Khan, 1982 and Sahoo, 1985). The assignments in distance education as a means of learning is not properly exploited by both the institutions as well as learners (Rathore, 1993).

- Personal Contact Programmes

All the DE institutions had the provision for Personal Contact Programmes (Dutt, 1976 and Biswal, 1979). Compulsion, optional attendance, selection of venue for personal contact programmes (PCPs), employment positions of learners, their financial difficulties, lack of proper facilities for boarding and lodging and lack of prior information to students are some of the factors which influence students' attendance at PCPs (Sahoo, 1985), as the PCPs are mostly organised in cities (Sahoo, 1985 and Balasubramaniam, 1986). Regarding attendance in PCPs, (Anand 1979) revealed that in Punjab University only 18 percent of pre-university students turned up for PCPs and only 40 percent of the first day's strength was noticed on the last (10th) day of PCP. Sahoo (1985) found that where attendance was compulsory, 70 to 80 percent learners turned up for PCPs, and where it was optional around 33 percent learners attended the PCPs of PG courses. Srinivasacharyulu and Ramaiah (1992)
found that the degree holders did not attend the contact classes at BRAOU. At school level distance education programmes, Singh (1983) found, only 5 percent of the learners attended PCPs regularly and another 5 percent attended partially. However, Dewal (1982) found that in three distance education institutions at the school level, 50 percent learners attended PCPs. This certainly must have been a special case.

No uniform policy was followed in directing teachers to select topics for teaching during PCPs (Sahoo, 1985). The planning and organisation of PCPs seemed to be inadequate (Nagaraju 1982). The topics available in study materials were repeated in most of the cases (Balasubramaniam, 1986). The usual methods used for teaching in the PGP were lectures together with question-answer sessions (Sahoo, 1985). Even though the real purpose of PCPs was not achieved to a large extent, most of the learners in higher education expressed positive opinion about the usefulness of PCPs (Anand, 1979; Biswal, 1979; Mathur, 1979; Khan, 1982; Kumar et al., 1986; Pillai and Mohan, 1983; Sahoo 1985; and Balasubramaniam, 1986 and Rathore 1991). The utility of PCPs was experienced by learners in terms of clarification of doubts, getting inspiration for further studies, better preparation for examination and solving academic problems (Mathur 1979; Sahoo, 1985; Balasubramaniam, 1986 and UGC, 1986). Besides this the learners appreciated the teacher-student informal interaction (Sahoo, 1985). However, with regard to the school level DE system, most of the learner participants did not find PCPs purposeful.

Most of the participants of PCPs for P.G. courses welcomed compulsory attendance (Bhusan and Sharma, 1976; and Sahoo, 1985), while the U.G. students expressed a negative opinion (Anand, 1979 and Mathur, 1979). Most of the respondents among teachers, learners and dropouts favoured increased frequencies of PCPs (Sahoo, 1985) and also increased duration of each PCP (Bhusan and Sharma, 1976; Anand, 1979; and Sahoo, 1985). Usha Devi (1994) revealed that learners showed positive affirmation for the necessity of contact classes. The common recommendation in the above studies regarding PCPs was that, proper care must be taken for selection of venues, sending prompt information to participants, division of learners into appropriate groups, use of appropriate methods and media for encouraging group interaction, appropriate orientation for teachers for selecting topics, provision of library facilities, co-curricular activities and facilities for boarding and lodging of participants.
Electronic Media

Provision for adequate libraries, book banks, despatch of reference materials did not exist within the system of distance education (Sahoo, 1985, Balasubramaniam, 1986, and UGC, 1986). In general, there was little support from radio and television. Even though All India Radio stations at Delhi, Jalandhar, Hyderabad and Tamil Nadu broadcast educational programmes for correspondence courses, all distance education institutions of the regions concerned, could not make full use of radio broadcast facilities. Nagaraju (1982) witnessed usefulness of radio programmes for in-service teacher training programme of Kerala State. However, he found that all the trainees did not listen to all the radio programmes of the training course. Cassettes have been used to correct pronunciation and delivery in the teaching of languages (UGC, 1986). The TV support was not available in the past for any DE programmes (Biswal, 1979; Khan, 1982; Sahoo, 1985 and Balasubramaniam, 1986). It is only recently that Doordarshan allows 90 minute telecasts in a week for IGNOU programmes.

Several researchers examined the use of video, cable TV and the teleconferencing mode. Though video film was found to be more effective (Mandal and Shah 1992), majority of distance learners do not use audio and video support. (Srinivasacharyulu, Subba Rao and Rajamouli 1989). The cable TV network, when properly planned and managed, can provide useful support to distance education (Chaudhari and Behari 1994), Distance learners were found to be favourably inclined to use the teleconferencing mode (Sahoo, 1994). While analysing the interactivity of IGNOU’s one-way video and two-way audio teleconference facility, Mishra (1999) found that the total duration of interaction calls was little less than one tenth of the total teleconference time. Learners were satisfied with the use of technology and teleconference facility which increased the interaction of the learners with their peer as well as the experts.

Use of Media

The print and electronic media have a distinctive role in the distance and open learning system. Shah and Mandal (1993) studied studied the effectiveness of the instructional strategies (video film and booklet) in teaching selected aspects of puppetry to home science students in terms of gain in knowledge and development of
ability. Using experimental method, they also explored the effectiveness of these strategies in relation to the students’ English language competence, academic achievement and attitude towards instructional strategy. The results of the experiment indicated a significant gain in knowledge as well as development of ability through both the strategies.

There was also significant gain through all the 7 programmes in the interactive mode. However direct mode in none of the seven IGNOU ETVs programmes was found to be effective than the interactive mode. In four out of seven IGNOU ETV programmes, the interactive mode was found more effective than the talkback mode. Talkback mode was not more effective than the direct mode in any of the programme. In terms of achievement of viewers, direct and talkback modes in all the seven programmes were equally effective.

- Teachers and Supportive Staff

Studies pertaining to the traditional system of distance education reveals that instructional and evaluation activities are carried out by the internal as well as the external faculty. The major share of instructional activities, especially the production of self instructional material and teaching during PCPs were performed by external faculty. Quite a large number of teachers involved in the distance education system were experienced (Biswal 1979; Sahoo 1985 and UGC 1986). However, in comparison with the external faculty, the full time faculty members of distance education institutions were found to be less experienced in both teaching and research (Sahoo 1985). None of the faculty were formally trained in performing instructional activities in distance education systems. Most of the internal faculty of DE institutions did express their willingness to undergo such training courses (Khan 1982; Sahoo 1985; and Koul 1988) but such courses were not available in the country. While the teaching faculty of correspondence courses were supposed to have all the minimum qualifications in the case of teachers of university teaching departments, they did not enjoy comparable status in relation to the latter in most of the universities. Their representation in different academic bodies was almost non-existent (UGC 1986).
V. Course Development and Evaluation

Vydehi (1984) evaluated the presentation of first year degree General English course of S.V. University, Thirupathi with regard to satisfaction of students needs, attainment of the objectives of courses and the instructional process and evaluation procedures adopted. Analysis of the different objectives for teaching English, methods of instruction, reactions of students and teachers and observation of PCPs were the means used to identify weaknesses of the present structure of curriculum. An alternative student-active instructional format and a new type of distance teaching materials were prepared and used in an experimental situation. A comparison of the achievement of students following conventional and the modified materials revealed results in favour of the modified approach. A similar kind of study was undertaken by Sarwal (1984) at the Central Institute of English and Foreign Languages, Hyderabad for preparation of teacher training correspondence course units for English Language Teaching. It was found that 15-week programmes were more effective than the 4-week programmes with regard to the degree of comprehension, degree of interest and degree of understanding achieved by students.

Evaluation of distance education is necessary from the viewpoint of justifying internal as well as external validity of the system. Since distance education is a society sponsored institution and aims at maximum involvement of people belonging to different cross sections of society, everybody would raise questions and seek answers with regard to the efficiency and effectiveness of the system from one angle or the other. The criteria for evaluation may differ depending on the context of study. For instance, while social responsiveness of distance education can be considered as a criterion for evaluation, the instructional comparability of distance education system with regular courses in terms of its products can be another criterion. Some may be interested in studying the effectiveness of the distance education instructional system with reference to the achievement of different objectives meant for specific courses; in other cases, the evaluation criteria may be fixed with differential levels of long term impacts of distance education on its products, and match them with manpower requirements at a given time and cost effectiveness. If the system does not achieve success in a specific case, it may be worthwhile to raise questions about its limitations on the specifics concerned.
VI. Output and Impact of Distance Education

• Comparison of the Achievement of Distance Education and Regular Course Students

Comparative studies on the achievement of distance education learners have revealed mixed findings. First, no significant differences have been found between the achievements of distance education learners and regular course learners in the case of UG courses of Delhi University (Sashi, 1972) and M.A. (English) and UG Courses of Punjabi University (Biswal, 1979). The UGC (1986) study reported about comparable pass percentages of both the streams in two Indian universities. Second, the pass percentages of undergraduate distance education students of Meerut, Delhi, Punjab, Bombay, SV, and Madurai Kamraj University were higher than those of regular UG students of the respective universities (Pandey, 1980 and Anand, 1979) and in the case of B.Ed course, the correspondence students of SV university showed better results than the regular students (Reddy, 1986). It was also found that the proportion of students who obtained third division was more in distance education than in regular courses. Third, generally the results of distance students were below average than those of regular students. In the case of Punjab University, the pass percentage of Pre-University distance students was found to be lower than that of regular students (Anand, 1979). The mean achievement comparison of the result of M.A. programmes of Punjab University and B.A. of Madurai Kamraj University reflected poor performance of distance education students (Biswal, 1979). In the cases of UG and PG courses of Himachal Pradesh University and Rajasthan University respectively the pass percentages of correspondence students were lower than those of regular students (Sahoo, 1985; and Gupta, 1985). As far as the higher grades/divisions in UG and PG results are concerned, the distance education stream performed worse than the regular stream (Sahoo, 1985 and UGC, 1986). Similar findings are witnessed in the case of the UG level results of Utkal University (Panda, 1980; and Panda and Panda, 1986). However, in general, the top level students of both the streams achieved almost similar positions (Sahoo, 1989).

• Immediate and Long Term Impact

In the case of the Himachal Pradesh University it was found that the products of distance education during the year 1971 to 1979 perceived the usefulness of
distance education courses in so far as they satisfied their academic and social needs while professional courses like M.Ed, helped them to attain professional gains. A large population of the products of general courses did not perceive the utility of distance education in terms of economic and occupational benefits (Sahoo, 1985). A similar observation was made by Pillai and Mohan (1983) with regard to utility of distance education for occupational purposes. As stated earlier, the training programmes for teachers of distance education had resulted in improvement of necessary skills amongst the participating distance education teachers (Koul, 1988). The correspondence-cum-contact in-service teacher-training programme in Kerala was also found useful in raising the level of trainees' knowledge and skills. Kumar et al (1986) have drawn similar conclusions with regard to B. Ed. trainees of the Regional Colleges of Education.

Saini (1979) found that minimal technological information could be comprehended by farmers with middle and secondary level qualifications through DE programmes of Agriculture Universities. Such programmes were useful in improving the field practices of farmers.

On the future development of distance education and its impact on different social and educational developments, Satpathy (1989) revealed that expansion of distance education should have significant positive effect on (i) innovations inside distance education system, (ii) development of science and technology, (iii) further advancement of education of weaker sections of the society, (iv) decrease in students participation in campus politics, (v) increase of educated unemployment and (vi) the progress of inservice and continuing education. On the other hand, it was revealed that further progress of science and technology, advancement of education of weaker sections of society, increasing rate of unemployment, and progress of in service and continuing education would have significant positive effects on expansion of distance education and innovations in distance education systems. So the future of distance education is secure for a long time to come.

- **Learners Achievement and its Correlates**

A couple of studies have given some ideas about certain prominent variables affecting the achievement of learners in distance education. Gomathi (1982) revealed that there existed a significant relationship between the achievement of M.A. and
M.Com. distance learners and work on study materials; text book studies; participation in seminars and contact programmes; radio broadcast programmes; study centre activities; and effective role of instructors. Panda and Panda (1986) found that the socio-economic status of learners has significant positive effect on academic achievements of distance learners. While identifying the factors responsible for the successful functioning of distance education, Rao (1980) stated that communication facilities, awareness of the people involved in the system, experienced teachers and infrastructural facilities can make the innovation a success.

- **Attitude of Participants towards Distance Education System**

  Attitude of participants and the community towards distance education has been treated as one of the criteria in studying the success of distance education. A survey of employed persons in Kerala, mainly clerks with Bachelor's degrees, revealed that evening college education was preferred to correspondence courses for further education (Pillai 1980). However, the learners continuing with distance education courses had expressed positive attitude towards the system. In comparison with the male students, the female students had expressed more favourable attitude towards it; and in the same way, employed students were more positive than unemployed students (Sahoo and Bhat, 1987). Around 50% of the teacher and student respondents in Khan's (1982) study expressed positive opinion towards distance education, whereas the remaining 50% were either neutral or negative about it. Sahoo (1985) revealed that even though distance teachers had positive attitude towards the system, around 71 percent of them reported that they intended to leave present positions and join regular colleges/departments, provided they get opportunities to do so. They expressed their views anticipating greater scope for research and professional growth in a conventional institution.

**VII. Economics of Distance Education**

One of the major reasons for the fast growth of distance education is its cost effectiveness. While using suitable methodology, studies can be conducted on the cost effectiveness of distance education comparing it with the costs of formal courses. There exists a need for studying differential cost structures also, including differential allocation of funds to different activities and components of distance education.
education. Such analyses will be useful in evolving a suitable and optimal financial structure for distance education institutions.

Studies conducted in India in this area can be classified under five headings:

i) Sources of income in the system,

ii) Expenditure of the system under different heads and its comparison with total income,

iii) Unit costs of different types --total institutional cost, teachers' unit cost, non-teacher unit cost and private unit cost,

iv) Comparison of unit costs of distance education with those of regular courses, and

v) Cost benefits, especially in comparison with those of the regular streams.

**Sources of Income in a Distance Education System**

It has been revealed that in the case of almost all distance education institutions, one of the major sources of income is students' fees (Dutt, 1986; Biswal, 1979; Pandey, 1980; Khan 1982; Sahoo, 1985; UGC, 1986 and Gupta, 1987). The fee structure of distance education in Rajasthan University analysed by Gupta (1987) revealed that the major share of tuition fee to total fees charged from learners varied from 91.70% to 97.32% during 1972-1985. In the case of Himachal Pradesh University, the income raised through learners tuition fees to total income varied from 98.3% to 96.05% during 1975-1987 (Sahoo, 1989). Dutt (1988) identified learners contribution as 28 to 50 percent of the total income of Delhi University during 1980-86. The rest of the income came in through subsidies provided mainly by the governments. Srinivasacharyulu and Ramaiah (1994) urged the state governments and other financing agencies to pay more attention to the funding of distance education institutes.

**Analysis of Expenditure in a Distance Education System**

Studies on the expenditures of distance education over a period of one decade have indicated an increasing rate of expenditure in distance education institutions. In the case of Himachal Pradesh University, the annual expenditure of distance education during 1975-76 increased from Rs.1.56 million to Rs.4.41 million during 1985-86 (Sahoo, 1989). In the case of the distance education Directorate of Rajasthan
University the annual expenditure of Rs.0.71 million during 1972-73 rose 5 times, i.e. to Rs.3.56 million during 1984-85 (Gupta, 1987). Dutt (1978) concluded that the major areas of expenditure in Rajasthan, Himachal Pradesh, Punjab, and Delhi Universities were salaries of the teaching and the non-teaching staff, preparation of learning materials, payment for PCPs and library services. The expenditure profiles of distance education institutions have not remained constant over the past one and a half decades. In Himachal Pradesh University, the expenditure on the academic and the non-academic personnel amounted to 74.34% of the total expenditure during 1975-76 and 55.95% of the total expenditure during 1985-86 (Sahoo, 1989). In the case of Rajasthan University, the expenditure on establishment increased from 19.16 percent in 1972-73 to 52.1 percent in 1984-85. The expenditure on teachers salaries decreased from 22.33 percent in 972-73 to 11.2 percent in 984-85 . The expenses on teaching materials went down from 28.33 percent in 1972-73 to 13.4 percent in 1984-85. While the proportion of establishment expenses increased almost 3 times. The expenses on academic heads decreased by 50% (Gupta 1987). The UGC (1986) survey revealed that 59 percent of the budgets of 17 DE institutions in India was spent on academic heads like teachers' salaries, contracted teachers' remuneration, teaching materials, and student support services and 13 per cent was spent on the administrative staff. Dutt (1978) found that in Delhi University, the expenses on the salaries of teaching and non-teaching staff ranged between 63.7% to 74.5% during the years 1980-86.

- **Comparison of the Income and the Expenditure in Distance Education**

It has been observed that in the initial stages the distance education institutions had surplus budgets (Biswal, 1979). The surplus budgets of institutions in Rajasthan, Himachal Pradesh and Punjab has been noted by Dutt (1978), Sahoo (1985) and Gupta (1987) have indicated However, Sahoo's 1989 study indicated that during the eighties (1980-87) the Himachal Pradesh University maintained a total deficit of Rs.6.9 million. The UGC (1986) study revealed a mixed picture of expenditure and income levels of distance education institutions. Out of fifteen universities, four had annual surplus funds varying from Rs.4.75 million (Jammu) to Rs.2.97 million (Annamalai). Five Universities ran deficits between Rs.0.14 million to Rs. 1.61 million (Punjab, Himachal Pradesh, Utkal and Kerala). Only Andhra
University had a balanced budget. The surpluses have been used either for the distance education institutions during other years, but mainly for the parent university. Deficits are met by the universities from their consolidated funds and grants received from the state governments and the UGC as the budget of distance education institutions has been a part of the integrated budget of the concerned universities (UGC, 1986).

- **Unit Cost Analysis in Distance Education**

  Unit cost analysis has been a common feature of all the studies conducted in the area of Economics of Distance Education. Taking into consideration the data, from 1973 to 1976 of B.A. Courses of 7 Universities, Yadav and Sharma (1988) found that the total unit costs varied from Rs.269.71 to Rs.451.82. In the case of UG and PC courses of the Himachal Pradesh University the total cost per student was calculated as Rs.391.60 and Rs.360.22 for the years of 1978-79 and 1979-80 respectively (Saloo, 1985). In the case of the same university the per student cost of UG and PG courses varied from Rs.260.00 during 1972-73 to Rs.613 during 1985-86. Gupta (1987) found that the per capita expenditure at Rajasthan University ranged between Rs.133.77 and Rs.695.29 during 1972-73 to 1979-80. The UGC (1986) revealed that the average expenditure of twenty-three DE institutions was Rs.469.77 per student during 1980-81. Highest per capita expenditure was observed at, Utkal University (Rs.1,268.72) and lowest was the Kurukshetra (Rs.63.94). In the case of APOU (presently named as B.R. Ambedkar Open University) this was around Rs.1200.00 (Dutt, 1986). The cost per student of Delhi University came down from Rs.801 in 1980-81 to Rs.563 in 1985-86 (Dutt, 1988).

  The unit private costs of two year M.A. and M.Com. courses at the Himachal Pradesh University during 1978-80 were Rs.2450.00 and Rs.3000.00 respectively; for M.Ed, it was around Rs.1700.00 and for B.A. it was around Rs.2400.00 (Sahoo, 1985). In the case of seven distance education institutions of Delhi, Punjab, Punjabi, Bombay, Sri Venkateshwara, Madurai Kamaraj and Meerut the unit private cost for B.A. Courses during 1973-1976 varied from Rs.171.00 to Rs.262.00, while the teaching unit costs varied from Rs.58.00 to Rs.98.00 and the non-teaching unit costs from Rs.165.00 to Rs.359.00. (Yadav and Sharma, 1987).
Most of the studies conducted on comparison of unit costs of correspondence courses and face-to-face courses revealed that the unit costs of correspondence courses were lower than those of face-to-face courses, in some cases as low as 10 percent of face-to-face course unit costs (Biswal, 1979; Pandey, 1980; and Gupta, 1985). However, Agarwal (1986) revealed that in the case of professional training courses, the unit cost of correspondence course was higher by 39 percent than that of face-to-face courses. Of course, the nature of the institution was not considered for comparison of costs in this case.

The above studies are at the higher education level.

Gaba (1999) did cost analysis at the school level with focus on designing and development of self instructional material. The study revealed that most of the expenditure was incurred on printing (75 percent) followed by salary to the academic staff (12 percent). There is a negative correlation between the number of students enrolled and the unit cost.

- **Cost Benefit Studies**:

  Two studies, Pandey (1980) and Gupta (1985), have attempted to make cost benefit studies with reference to different cost components in India. Pandey's (1980) study, which was conducted on 10 sample universities, revealed that
  
  - There was significant difference between regular and correspondence streams with regard to recurring income. Correspondence courses supported themselves without government subsidy and mostly depended on students' contribution. However, with regard to non-recurring income, no difference was marked between the two streams. On the total income, there existed differences between the two streams.
  
  - The differences in recurring and non-recurring expenditure of regular and correspondence education were not different although their heads of expenditure were not similar.
  
  - Significant differences existed between per student expenditure on direct cost, indirect cost and total cost of enrolled and appeared level, whereas no significant difference was marked with regard to direct cost per student for pass level. However, there existed differences between per student
expenditure on indirect cost and total cost at pass level.

- There was no difference in terms of wastage cost per student at direct, indirect and total levels of the two streams.
- The difference between the direct cost per student failure was not significant, but that for indirect cost and total cost per student (failure) were significant.
- The 1978 study reveals that the correspondence education was more economical, as the total cost benefit per student was Rs.2823.14 at undergraduate level.

Analysing the relationship between student strength and cost per student in the case of all DE institutions at university stage, Dutt (1986) found the correlation co-efficient as low as 0.26. Sahoo (1985) revealed that the rate of growth of enrolment did not equally affect all aspects of expenditures of distance education since there existed a low relationship between student strength and different components of expenditure.

- **Overview**

  Research studies have mostly adopted descriptive survey approach and quantitative analysis techniques. The experimentation for testing the efficacy of various approaches, interventions and models; case study approach; use of interviews and observations; qualitative data analysis techniques have been neglected in the conduct of studies.

  The findings of the studies in comparative perspective indicated that the instructional material prepared and developed by IGNOU is greatly appreciated by the teachers associated with distance education programmes and distance learners. The quality and standard of the course content is maintained by involving professionals and experts from the field and adequate time is devoted in preparing the materials. However, course materials prepared by most of the correspondence / distance education institutions of conventional universities are poor in quality and prints because these institutions hardly involve professional of quality due to lack of finances. The materials are mostly prepared in hurry.

  The distance education programmes offered by conventional universities use print-based instructional materials. However, some state open universities use multi-media-based instructional technology. IGNOU, in addition to multi-media, use latest
communication and information technologies including teleconferencing in providing instruction and counselling to distance learners.

The teacher associated with the distance education courses in conventional universities are hardly provided any orientation in the theory and practice of distance education programmes. IGNOU is providing orientation to course writers through seminar and workshops.

PART – II

REVIEW OF DISTANCE EDUCATION ARTICLES (2000 TO 2008) by the e-journal – the International Review of Research in Open and Distance Learning (IRRODL)

(Analysis of Research Areas, Methods and Authorship Patterns.)

The articles (N-695) published in five prominent distance education journals between 2000 and 2008 were reviewed. The conclusion drawn is that the distance education research is strongly dominated by issues related to instructional design and individual learning processes whereas, other important areas (e.g. innovation and change management or intercultural aspects of distance learning) are neglected. There is a significant trend forwards collaborative research and more qualitative studies.

Research on distance education has been subjected to consistent critique (Berge and Mrozowski, 2001; Bernard et al., 2004; Perraron 2000, Saba 2000) Moore (1985) stated that there is “a massive volume of amateur, unsystematic, and badly designed research producing information of very little value”. Panda (1992) analysed the Indian distance education literature and concluded that “most of the studies are either descriptive status surveys or experimental studies with poor methodological base “Saba (2000) criticizes the lack of theoretical underpinnings: “Research questions are rarely posed within a theoretical framework or based on its fundamental concepts and constructs”

Selection of Journal and Articles :

Five journals namely Open Learning (OL), Distance Education (DE), the American Journal of Distance Education (AJDE), the Journal of Distance Education (JDE), and the International Review of Research in Open and Distance Learning (IRRODL). They were selected because of their reputations as the most prominent and recognized journals in the field of distance education.
Based on a literature review and a qualitative analysis of the responses three broad meta-levels of distance education research were derived:

1. **Macro Level**: Distance Education Systems and Theories,
2. **Meso Level**: Management, Organization, and Technology,
3. **Micro Level**: Teaching and Learning in Distance Education.

Within these three levels, the research issues that considered as important by the experts can be categorized into 15 research areas:

- **Macro level: Distance Education Systems and Theories.**
  1. Access, equity, and ethics: The democratization of access to distance education afforded by new media and by finding ways to deliver high-quality education to those who have limited resources and poor infrastructure; issues that refer to the (sustainable) provision of distance education in developing areas. What is the impact of distance education (e.g., via mobile learning) on narrowing the digital divide and what is the role of ICT (information and communication technologies) and/or OER (Open Educational Resources) in terms of access to education?
  2. Globalization of education and cross-cultural aspects: Aspects that refer to the global / external environment and drivers, the development of the global distance education market, teaching and learning in mediated global environments, and the implications for professional development.
  3. Distance teaching systems and institutions: Distance education delivery systems, the role / of institutional partnerships in developing transnational programmes, and the impact of ICT on the convergence of conventional education and distance education institutions. (hybrid or mixed-mode).
  4. Theories and models: Theoretical frameworks for and foundations of distance education, e.g., the theoretical basis of instructional models, knowledge construction, interaction between learners, or the impact of social constructivism learning theories on distance education practice.
  5. Research methods in distance education and knowledge transfer: Methodological / considerations, the impact of distance education research and writing on practice, and the role of professional associations in improving practice. Literature reviews and works on the history of distance education are also subsumed within this area.
• **Meso level: Management, Organization, and Technology.**

6. Management and organization: Strategies, administration, and organizational infrastructures and frameworks for the development, implementation, and sustainable delivery of distance education programmes. What is required for successful leadership in distance education? Distance education and policies relating to continuing education, lifelong learning, and the impact of online learning on institutional policies, as well as legal issues (copyright and intellectual property).

7. Costs and benefits: Aspects that refer to financial management, costing, pricing, and business models in distance education. Efficiency: What is the return on investment or impact of distance education programmes? What is the impact of ICT on the costing models and the scalability of distance education delivery? How can cost effective but meaningful learner support be provided?

8. Educational Technology: New trends in educational technology for distance education (e.g., Web 2.0 applications or mobile learning) and the benefits and challenges of using OERs, media selection (e.g., synchronous vs. asynchronous media), technical infrastructure and equipment for online learning environments, and their opportunities for teaching and learning.

9. Innovation and change: Issues that refer to educational innovation with new media and measures to support and facilitate change in institutions (e.g., incentive systems for faculty, aspects referring to staff workloads, promotion, and tenure).

10. Professional development and faculty support: Professional development and faculty support services as a prerequisite for innovation and change. What are the competencies of online teachers and how can they be developed?

11. Learner support services—The infrastructure for and organisation of learner support systems (from information and counselling for prospective students about library services and technical support to career services and alumni networks).

12. Quality assurance: Issues that refer to accreditation and quality standards in distance education. The impact of quality assurance and high quality learner support on enrolments and drop-out/retention, as well as reputation and acceptance of distance education as a valid form of educational provision.

• **Micro level: Teaching and Learning in Distance Education.**

13. Instructional design: Issues that refer to the stages of the instructional design process
for curriculum and course development. Special emphasis is placed on pedagogical approaches for tutoring online (scaffolding), the design of (culturally appropriate) study material, opportunities provided by new developments in educational technology for teaching and learning (e.g. Web -2.0 applications and mobile devices), as well as assessment practices in distance education.

14. Interaction and communication in learning communities: Closely related to instructional/ design considerations is course design that fosters (online) articulation, interaction, reflection, and collaboration throughout the learning and teaching process. Special areas include the development of online communities, gender differences, and cross-cultural aspects in online communication.

15. Learner characteristics: The aims and goals of adult learners, the socio-economic background of distance education students, their different learning styles, critical thinking dispositions, and special needs. How do students learn online (learner behavior patterns, learning styles) and what competencies are needed for distance learning (e.g., digital literacy)?

Conclusions and Implications for Future Research

The study examined (1) research areas in distance education, trends, priority areas, and gaps in distance education research; (2) research methods in distance education; and (3) authorship patterns. The results of this review convey certain implications for future research in distance education.

Major findings of this study may be summarized as follows:

- Research in distance education is dominated by studies that focus on interaction and communication patterns in computer-mediated communication, instructional design issues, learner characteristics, and educational technology.

- In terms of research methods, the only discernible trend was found for qualitative research methods, with a modest upward trend on a low percentage level. Maybe researchers in the field have taken note of those who advocate more qualitative studies to capture a deeper and richer range of data (cf. Minnes, 1985; Saba 2000).
• The AJDE clearly prefers to publish quantitative studies; whereas, DE accepted the highest number of qualitative studies, and JDE published the highest number of papers that followed a mixed method design.

• More than 80% of all articles were contributed by authors from only five countries: USA, Canada, UK, Australia, and China. The first authors of the 695 articles under review came from 54 different countries. Interestingly, the journals publish more from their own country of origin. The international journal is IRRODL with only 18.9% of authors coming from Canada; whereas, AJDE has a strong North American bias with over 80% of authors from the USA and Canada.

• A significant trend was found towards more collaboration among researchers in distance education. In the period between 2000 and 2008, the proportion of single-author papers was 44.2% compared to 61.5% of 361 articles published between 1991 and 1996 that were reviewed by Mishra (1997).

• **Gaps and Priorities:**

  Indian research in education began in 1943 that is more than fifteen years before the distance education programme in the form of correspondence education began in 1962. During the last 48 years of its existence, it has expanded to cover more than 37,36,744 students attending more than hundred Dual Mode Universities and thirteen State Open Universities and one National Open University. Despite this phenomenal expansion, major researches in Distance Education either at the doctoral or in the project form are few in number.

  Research in distance education can be classified, as micro and macro studies. In another way, they can be classified as simple components as drop out or integrated multi-components studies. On the basis of the analysis of the studies in the various areas as evident from the review earlier, there are concentrations in certain areas like characteristics of distance learners and economics of distance education. "In fact, both these areas have been extensively studied. The crucial area of andragogy and pedagogy of distance education were hardly touched. Distance Education has, all over the world, adopted a multi-channel learning format involving print material, PCP, audio, radio, television, interactive television and Internet. There has been no study on the effect of multi-channel learning on distance education. Within the instructional process there are very few studies on electronic media. TV and radio as
media of distance education have remained almost unexplored. Similarly, research in other components of instructional processes are few and scanty to derive any significant conclusions about the pedagogy and andragogy in distance education.

The studies on learning outcome through distance education and its comparability to the learning outcome in the conventional system are negligible. Studies are totally missing on excellence and quality of distance education-what constitute quality and what determines quality in distance education. The number of studies on organization and management of distance education are less. Besides, there are open universities and dual mode universities and distance education outfits in the conventional universities vary widely in their organizational structure. Some of them enjoy the status of a faculty (autonomous). Some are in the departmental status under a faculty and yet some others operate as constituent colleges. They vary widely in their academic and financial autonomy. Similarly, these institutions vary very widely in their staff structure. A few of the departments have a large number of staff within the distance education institution e.g. about 100 in the Directorate of Distance Education of Delhi University, some others maintain a skeleton staff e.g. only one Director in the Directorate of Distance Education, Bombay University drawing totally from other departments of the university.

Another related area, relatively unexplored is the staff development in distance education. Although STRIDE in IGNOU as well as some of the directorates of distance education have been conducting staff development programmes, research on the programmes is almost missing. Recently Ramanujam (1999) conducted a study on "STRIDE Training Programmes: Their Impact on the DOL systems in South Asia". The results are with regard to STRIDE training of academics in IGNOU. Majority respondents were positive to the training programmes but feels that STRIDE should equip itself in terms of leadership, understanding, and strategic planning. Secondly the impact of DDE, PGDDE and MADE programmes are found to be useful as these programmes have made the distance educators carry out their tasks effectively though the implementation and delivery mechanism suffer from many weaknesses. The third part reveals the impact of STRIDE training on the non teaching staff of IGNOU. It was found that training was given earlier to non teaching staff which has been discontinued now. The non teaching staff expects STRIDE to develop collaborative and need based training programmes which would contribute to the efficiency of their daily work.
Distance learners are a heterogeneous group. However, they follow the same curriculum as their counterparts in the conventional courses. The heterogeneity in age, occupation, interest, motivation, etc. are not reflected in the curriculum development process. Open universities have the autonomy of developing curriculum focused on distance learners. The relationship between the curriculum development process and the quality of curriculum is the important area of research.

Some of the Issues in distance education research are: What are the main research areas in distance education and how have they changed between 2000 to 2008? What are the most common research areas and where are there gaps in distance education research? (Mishra.1998).

It is observed that studies are too few to provide a comprehensive coverage of different issues and problems of distance education.

- **Research Priorities in Distance Education**

  Research priorities can be derived from the gaps. Research priorities can be fixed by individual experts or collectively, by the experts and field practitioners. NIEPA, an Indian national institution on planning and management of education, has developed a list of priority research areas in planning and management of distance education collectively with the directors of distance education departments of dual mode universities (Mukhopadhyay and Sujatha, 1991).

  To begin with research should be undertaken to assess how far distance education has actually made education accessible. In India, about 10% of total enrolment in higher education is through distance education. This 10% is of the 6% of the age group 18-23 who join higher education. Further this 6% enrollment in higher education is actually 60% of those who are eligible to join higher education. Causes need to be explored. Similarly, on the equity dimension, research on learners background indicate unequal gender ratio, rural urban ratio, employed-unemployed ratio economically viable-weaker section ratio, etc. Researches are needed to assess causes of inequity and remedial measures.
The prospects

The rapid expansion of the distance education / open university system in the country has provided a vast ever-growing field to introspect, explore and actualize-both in research, and policy formulation and implementation. With the increasing number of students seeking education at a distance the major issue before the academics and the scholars, on which the exploration in the field depends, are: i) allocation of staff time, resources and academic freedom to undertake both systemic and discipline-based research; ii) the growth of distance education as a discipline; and iii) the actualization of distance education as a career. Distance education as a form of open learning has vast potentiality of expand, influence and sustain, but it depends on how and to what extent this is subscribed to and increasingly tried out by the planners and practitioners.

Research in distance education would not only establish and enhance the theory of distance education, but also significantly contribute to its practices.