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EDITORIAL

Since the Distance Education and learning has become a global movement in the fields of academic and professional programmes, it seems that the fast developing system might become an alternative to the traditional education set-up by the turn of the century itself. After the creation of first Open University in Andhra Pradesh, the establishment of Indira Gandhi National Open University (IGNOU), followed by the setting up of a number of State Open Universities in India, has thrown up a challenge for the perceptors, scholars, and managers connected with the distance learning. Thus the need of the hour is not just going on expanding the system haphazardly but to maintain and develop the related infrastructures in a truly authenticated and systematic manner.

Indian Journal of Distance Education can be considered a well- thought effort in shaping the theories, principles, and practical aspects of the system. The special innovative practical approach has to be evolved keeping in view our regional aspirations, national perspectives, and international standards. The VIth Volume of the Journal has been brought out and is being presented in this specific context. I am thankful to the learned contributors for their academic and practical approach while preparing their research papers and I also appreciate all concerned who have provided their specialized assistance in bringing out this publication.

My heartiest thanks and gratitude to our esteemed Vice- Chancellor, Professor M.M.Puri for his being associated with the Journal as its Chief-Patron.

(Santosh K.Sharma)

Editor-in-Chief

IJDE VOL.VI : Possibilities and Challenges in Distance Education

The slogan of the 20th century was 'Education for all'. The slogan of the 21st century is going to be 'Education for each'. It will be well nigh impossible for the formal system of education to meet these rising expectations. Correspondence Courses or the informal system needs to take stock of the situation and carefully plan its growth and development. The system has miles to go... But go in which direction?

Correspondence Courses now needs a new package -- a package of Distance Education. The focus of this volume of the IJDE is to formulate certain guidelines so that the second chance education does not become second rate education. Dr. S.Kishore's paper looks upon this process of Distance Education being akin to an industrial operation and closely examines the area of student support service. The focus of Dr. Goel's and Dr. Sarangi's paper is on teacher-taught interaction and especially the role of tele-conferencing. Dr.Surinder Shukla's paper takes up the basic pedagogic issues involved in the whole process of learning at a distance.

Prof. Meera Malik's paper shows how the personal contact between the teachers and the student can be constantly maintained by the judicious use of audio-cassettes. The method is both effective and cost effective. Dr. Veena Singh's paper shows how the Indian women can benefit from Distance Education. This can give women both power and credibility.Dr. R.K.Mahajan grapples with certain basic problems of our education system and sees how they can be worked out in the distant mode of education. Major Tiwari's paper tackles the issues of new technology and how it is changing the very concept of Distance Education in India. Dr. Saran Sharma and Ms. Neelam Satsangi also take up this and also deal with the limitations of new technologies.

Dr.Romesh Verma shows how through Distance Education both the masses and the classes can contribute to the development of society in the 21st century. Dr. J.S.Bains outlines certain common problems faced by the distant learners and explains ways and means to solve these. Dr.Shamshad Hussain's paper emphasizes the importance of human resource development in Distance Education. Human resource is one resource we have in plenty and channelizing and utilizing it can help us to meet the new challenges.

Mrs. Poonam Gupta's paper is a practical exercise in distance teaching. She shows how a tough concept in Economics can be explained to the distant learners. Mr. Hardeep Singh and Mrs. Ravinder Kaur define the simple canvas of the system. Dr.J.Rama Naidu takes up the growth and development of Distance Education institutes and the introduction of various courses. Dr. L.K.Bansal's paper raises the all important question of the credibility of the system. Dr.Parminder Khanna's paper opens new frontiers for Distance Education to show how it can help the universities not only to transcend the boundaries of the class room and the campus but also the state and national boundaries. We conclude the journal with a vision of multi-national open universities.

The onus of maintaining standards in Distance Education rests squarely on motivated learners and professionally honest educators. Both function under constraints and limitations. But I would like to sign off by quoting George Eliot, "It always remains true", she wrote in a letter to a friend, "that if we had been greater, circumstances would have been less strong against us."

Meera Malik

Chief Editor

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MANAGEMENT OF STUDENT SUPPORT SERVICES AND ITS COST IN INDIRA GANDHI NATIONAL OPEN UNIVERSITY.

S.Kishore

Introduction :

The aim of any distance/open learning institution is no longer confined to the democratisation of education but also concerned about the quality of outcome and its parity with conventional system. Recently, in distance education (DE) the emphasis has started shifting towards learner-centred education with the advent of features like independent learning, individualisation, two-way communication etc. The distant learner who is separated from the teacher and involved in self-study requires continuous support during the course of his/her study. The support extended by the distance learning institution (DLI) to meet all the varied needs of the learner is called student support services (SSS). In DE, normally, support is extended in the form of counselling, audio/video and library facilities, conduct of practicals etc.

The concept of SSS has received wider attention as well as impetus in the DLIs of advanced countries mainly due to the worldwide advancement witnessed in the field of communication and information technologies. But the same is not the case with our country and still the SSS concepts have not percolated sufficiently in the Indian DE scenario.

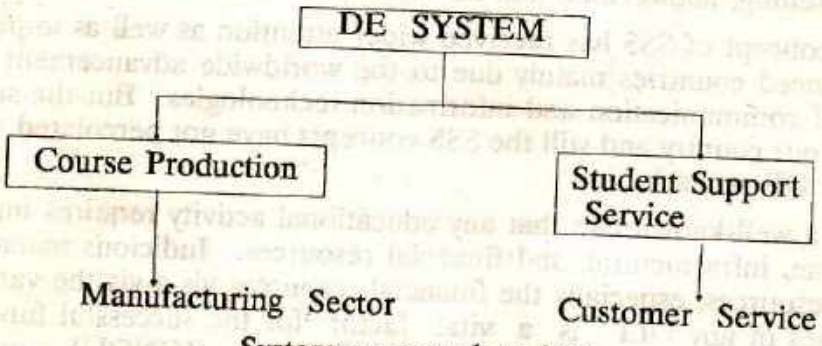
It is a well-known fact that any educational activity requires inputs in the form of human, infrastuctural, and financial resources. Judicious management of these three resources, especially the financial resources vis-a-vis the varied educational activities of any DLI is a vital factor for the successful functioning of the institution. Indira Gandhi National Open University (IGNOU), a premier DLI in the country, has completed a decade operation and is also an apex body for the maintenance of standards in DE in the country. Therefore, this article traces the various student support activities in IGNOU as well as the cost involved in operationalising them to examine whether financial resources available at the disposal of IGNOU are managed efficiently.

Student Support vis-a-vis Service Industry Approach :

Distance education (DE) is an alternative and convenient non-formal channel providing equity and access to higher education to the heterogeneous learners differing in age, sex, social status etc. Moreover, DE is also considered as a flexible mode to those who want to pursue life-long and continuing education irrespective of their place, pace, and time.

Distance education (DE), if we examine closely, is a mass higher education activity and has characteristics associated with the industrial operation. For instance, the activities commencing from the production to the delivery or print materials are undertaken on a large (mass) scale as well as there is a division of labour in the multitude of activities connected with the DE. All these activities in DE have similarity to the assembly line approach adopted (starting from the production of goods to the delivery to its customers) in an industrial enterprise. Therefore, activities in DE apriori, can be subject to the industrial management principles. The industrial management principles inter alia view the concept from the angle of system approach, which involves the bifurcation of a system into sub-systems so that the various subsystems can be analysed from the point of their need-based contribution to the integral functioning of the whole system.

In conformity with this principle, the two major sub-systems which can be identified in DE are course production and student services and these are equated respectively with the manufacturing sector and customer service of an industrial enterprise (Lewis 1993).



Systems approach to DE

In an industry, the customer service is as significant as the manufacturing sector. The success or failure of the industrial enterprise depends upon whether the customer is satisfied or dissatisfied with the service, since the customer is the one who normally receives the service; that is customer satisfaction is given prime importance for which both the sub- systems must work in an integrated fashion. Akin to this, in DE, the success or failure and the overall image of the institution is determined by the strength or weakness of the SSS. For the balanced and successful functioning of any DLI, it is to be ensured that the student support sub-system is not only given due significance but also gets integrated with the course production sub-system. Moreover, from the learner and institutional perspectives, SSS in the form of learner- learner interaction, learner-teacher interaction, learners access to library, and other resources are deemed essential and beneficial for their progress and success.

However, implementation of the sub-system approach in an integrated fashion needs sound planning as well as optimal utilisation of financial resources on the part of any DLI. Perceptibly, the integration too demands the balancing of the resources allocation between these two sub systems. But for a DLI it may b a formidable task considering the fact that the course production is a one-time off cost and the average cost for course production (unit cost) comes down when the enrolment goes up. But this is not the case with the SSS whose cost would go up when there is a progressive increase in the annual enrolment owing to increased operational expenses. Consequently, SSS sector is a high volume cost operation centre and it has got its own financial implications for any DLI. This could be one of the primary reasons for many DLIs in failing to pay sufficient attention to SSS sector without realising the fact that it forms an important arm for DE as the customer service for an industrial enterprise.

Student Support Activities in IGNOU

IGNOU which came into existence in 1985 has completed a decade of operation. IGNOU is a central university and has jurisdiction all over India. IGNOU offers instruction in different branches of knowledge at the degree, diploma, and certificate levels. It offers courses mainly in relation to the needs and employment development in the country including in the areas of engineering and technology, computer and nursing. The salient feature of IGNOU's courses is that it mainly caters to adult learners and in-service personnel. At the end of the first decade (in the year (1973) it has been offering 38 programmes and 372 courses. The enrolment in IGNOU has been steadily increasing every year and it has been about 1.0 and 1.3 lakh respectively, during the year 1995 and 1996.

As student support services (SSS) form the backbone for any DLI, it has to start immediately after the delivery of the course materials and the support has to continue till the conduct of the term-end examination. IGNOU's SSS is mainly based on the United Kingdom Open University's (UKOU) student support model. The structure consists of three tiers-the headquarters, the Regional Centres and the Study Centres. It is a decentralised model planned to provide effective support to the distance learners. The Regional Services Division (RSD) at the IGNOU headquarters formulates the policies of SSS The support services are implemented by a network of about 250 Study Centres (SC) situated all over the country with the help of the Regional Centres (RC). The RC's are playing an intermediately role and coordinate the functions of a cluster of study centres in the region. There are 17 state based RCs which are permanent offices of IGNOU and the SCs have been housed in educational institutions with the part- time staff drawn from the host institutions looking after the functions of the SC.

The Major activities and functions connected with the student support at all RC and the SC are summarised in Table 1.

Table 1 : Student support activities at the Regional and Study Centres

	Regional Centre	Study Centre
1,	1.Publicising and promoting IGNOU programmes and courses in the area	1. Giving advice, guidance and information to the students
2.	Providing admission related details and guidance as well as responding to student queries	2. Arranging and conduct of academic counselling
3.	Acting an interface between headquarters and Study Centres in implementing SSS policies	3. Discussing individual problems both academic and personal
4.	Conducting orientation/training programmes for Study Centre functionaries	4. Providing library and audio-video facilities to the learners
5.	Conduct of long term/extended programmes for the learners	5. Facilitating individual learning
6.	Selection and appointment of academic counsellors	6. Evaluation of tutor marked assignemnts of the learners
7.	Looking after the admission activities	7. Conduct of Term and examinations
8.	Provision of teleconferencing support to the learners	8. Providing laboratory/work centre faciltities for science/technical courses.
		9. Distirbution of course material and maintenance of student's records.

Cost of Student Support in IGNOU

It is well-known that cost is one of the key inputs for any educational activity, and also has been referred in terms of the value of real resources made available for that activity. The IGNOU, the SSS is one of the three major cost centres, others being course production and course delivery. SSS is always a high volume activity

meaning that the higher the rise in enrolment each year, the greater would be the size of operation. Moreover, as it is essential to balance course production and support activities, it is pertinent to have knowledge about the financial resources made available for SSS in IGNOU.

In IGNOU, the expenditure related intrinsically per se to the RSD, RCs and Study Centres (SCs) constitutes the cost of SSS. Even though, the cost in terms of expenditure incurred for the SSS signifies the total input for the support extended, rationally the unit cost (or cost per student) for SSS has been considered to be of more diagonistic value and is a measure of not only the input but also the benefits transferred to the learners in the form of knowledge/skills imparted, achievements in learning etc. Table 2 projects the SSS costs of IGNOU for the years 1987-88 to 1994-95.

Table 2 : Cost of Student Support in IGNOU for the Period from 1987-88 to 1994-95

Year	Enrolment	Number of Study Centre	Total SSS costs (Rs.lacks)	% of SS costs to total expenditure	Unit cost for SSS (Rs.)
1987-88	16811	94	28,45	7.6	169
1988-89	42324	120	69.98	9.2	165
1989-90	48821	133	118.67	10.6	243
1990-91	52376	170	162,36	NA	310
1991-92	62375	202	226.21	13.9	363
1992-93	75666	219	249.55	12.0	330
1993-94	84200	229	386.66	18.4	459
1994-95	91398	244	410.94	19.1	450

Source of Data : Annual Reports, Annual Accounts and official documents of IGNOU NA: Data not available

A glance at Table 2 shows that the enrolment has registered a five-and half fold increase from 16811 in 1987-88 to 91398 in 1994-95 but the SSS cost have shown a 14-fold increase from Rs.28.45 lakhs to Rs.410.94 lakhs during the corresponding period. Thus there has been a steady increase in the allocation of resources for SSS in IGNOU over the years and the percentage of SSS cost vis-a-vis the total expenditure has been also on the rise from 7.6 in 1987-88 to 19.1 in 1994-95. that is, by 1994-95, almost one-fifth of total resources has been spent on SSS.

A closer examination of the details in Table 2 reveals following three stages in SSs operation.

Stage 1: The years 1987-88 and 1988-89 are the initial phase for IGNOU. During this initial phase, the number of programmes and courses on offer has been fewer and the support activities also functioned only through 95 and 120 study

centres. Therefore, the unit cost has been Rs.169 and Rs.165 respectively for these two years.

Stage 2 : This is an expansion stage for IGNOU during the period from 1989-90 to 1992-93. This could be seen from the high growth in the number of study centres by 86 (133 in 1989-90 to 219 in 1992-93). This four-year period has been marked by considerable enhancement in the enrolment which must have necessitated in the establishment of more study centres for the sake of strengthening the student support. This has been reflected in the rise of unit cost from Rs.243 in 1989-90 to Rs.330 in 1992-93.

Stage 3: The years 1993-94 and 1994-95 can be called as diversification phase for IGNOU. Surprisingly the number of study centres and enrolment have shown only marginal increase as compared to that of stage 2 (Table 2). But the unit cost and the total expenditure on SSS have shown a phenomenal increase respectively by about Rs.100 and Rs.135 lakhs in the year 1993-94 in comparison to the year 1992-93. The reason being, in these two-year period, IGNOU has launched more programmes especially in the areas of Computer, Engineering and Technology and Health Sciences. The intensive support required for these programmes, especially the inputs in the form of laboratory, work centres etc. has caused an upward trend in the cost of SSS in the third stage.

The resource allocation to the extent of one-fifth of the total expenditure by the year 1994-95 (incurring Rs.450 per learner) definitely points out the kind of attention the support activities has received in IGNOU. More over, the unit SSS cost which also happens to be one of the operational costs can be a useful parameter for deciding the fee structure by a DLI. This is because it is essential for any DLI to balance it per student operational cost and per student fee income for which the knowledge of unit SSS cost is a very critical factor.

Conclusion

In IGNOU, the unit cost of SSS has shown a two - and half-fold increase in eight years from Rs.169 to Rs.450 and this reveals the endeavour of IGNOU in giving thrust to the student support activities. Quality in distance education can be attained not only by delivery of good quality learning material (print material) but also by strengthening the support to learners to make the distance education highly learner-centred and relevant. The continuous student support alone would facilitate the process of two-way communication for the effective self study of distance learners. IGNOU being an apex body for maintaining and coordinating standards in distance education has taken an earnest lead in this direction. This should also act as an eye opener to other correspondence/ DLIs in our country for initiating policy decisions on similar lines so that the allocation of sufficient resources can make the state-of-the art studenst support a reality.

Reference

1. Sewart D (1993), *'Student Support Systems in Distance Education', Open Learning* 8(3), 3-12.

INTERACTIVE DISTANCE EDUCATION: A SUMMATIVE VIEW OF INDIAN TELECONFERENCES

D.R.Goel
D.Sarangi

Abstract

The paper deals with the need for incorporation of a teacher- taught interaction into the TV mediated instruction, a major component of the network of learning resources in Distance Education. It exposes to a number of plausible modes and modalities of teacher-taught Interaction, the Indian attempts to provide an Interactive Distance Education through satellite based tele-conferencing and concludes with some implications and imperatives for further probing and planning.

Television has no more remained a mere item of luxury just for information and entertainment. For its educational potential it has been used more and more for instructional and training purposes. It has now become a major component of the network of learning resources in Distance Education and has a greater role in extending educational opportunities to the geographically scattered population of India. For qualitative improvement in formal education TV has been assigned a major role in expanding students' intellectual horizon through enrichment programmes - CWCR, SIET, CIET, ETV programmes. It is used to tackle the problem of limited resources and the challenges of providing professional training to huge mass of teachers. For general education, health, environment, civics and non-formal education to provide professional knowledge and competency.

The Need For An Interactive ETV

Inspite of its well-established instructional strength, the one- way flow of information which impedes the instructional efficiency & effectiveness has been a big concern for padagogists, technologists, and communication scientists. Particularly in case of distance education, the distinctive features of widely scattered learners: diverse cultural plurality, heterogeneous background, learning isolation urged for a teacher-taught interaction in the tele-teach system. To make television a fully effective and efficient instructional medium teacher-taught interaction is felt indispensable on the following grounds:

1. Perceptual variance occurs between the message intended to be communicated and that received due to differential background, knowledge, and experience of learners (Flemming, 1970).

2. There is every possibility that learning may not take place to expected depth and dimension. A fuller learning is desirable.
3. Learning distortion/deviation caused through the said points needs to be corrected by some mechanism.
4. The need for satisfying learners' querries/doubts cannot be denied.
5. Making learning meaningful through creating clear cognitive maps in the content area of learning.
6. Increasing the relevance of learning through providing the learner some interest value.
7. Removing the feeling of 'learning isolation' from among the distant learners.

Tele Interaction Through Tele Conference

As such the modern communication and information technology was called for to fetch a good interactive network between the tele-teacher and the tele-learner ends in ETV. The idea of tele- conference was adopted for the purpose. Tele-conference provides a two-way interaction between proximate terminals and is available in different forms on the basis of the type of communication technology involved. These are:

(1) Basic Telephone Conference

People from different locations can have interaction through the basic telephone services. This has been extensively used in the business world. For education purposes, not much in India. Teleconference of this type is used in U.K. open university and on U.S.A.

(2) Audio-Graphic Tele-Conference

Such tele-conference may involve some pre-distributed visuals (slides etc.) and radio broadcast followed by telephonic interaction between the radio teacher and the learner units.

(3) Still Video Through Audio-Link-up only

This type of conferencing involves transmission of visuals through the telephone transmission channel. Special inter facing equipment is required to link a standard video camera at one end and to a standard TV receiver at the other. Given cameras and receivers at several stations fully interactive tele-conferencing is possible with two-way transmission of still-shots.

(4) Full-motion Video Teleconference

This type of tele-conference provides wide range interaction facilities through satellite communication.

(a) **One-way Video : Two-way Audio Interaction** : Through this system the participants from different parts can interact with the sender TV station. The communication from the TV presenter to the learners is facilitated via geo-

stationary satellite. The two-way audio linkage either through telephone channels or through satellite satisfies the tele- querries of the learners.

(b) **Two way Audio: Two-way Video Interaction.** Such type of conferencing is possible through two way TV network. The presenter from different TV stations can interact with each other with audio-video system. Satellite communication enables distant learners viewing the E.T.V. programmes to interact with tele-instructor and both audio-video interaction from both terminals gives the feeling of a real classroom.

(c) **Computer Conferencing** : A central computer with large database can be internetted to distant computer units as communication terminals. Distant learners may call the central computer to have answers to their queries.

Interaction in E.T.V : Different Modalities

The interaction between the tele-teachers and the distant learners in E.T.V. telecasts can take place in a number of ways.

(A) Live teaching + follow-up interaction
(B) Played back teaching + follow-up interaction
(C) Live teaching + Interim interaction (Here teaching and responding to the tele-querries go contiguously)
(D) Played Back Teaching + Interim Interaction

The main two points in determining a modality are (1) if the tele-instruction is conducted in live or a pre-recorded E.T.V. programme is played back; (2) the time of interaction that is, if tele-teacher and learners are allowed to interact during the instruction or after instruction. Factors deciding the mode and modalities of tele-interaction between the teacher-taught terminals (Sarangi, 1992, Laurillard, 1991) are-

i) desirability of learner intervention and control on the teaching flow;
ii) structure of knowledge in the content area of an E.T.V. programme;
iii) and the strategies of E.T.V. communication adopted in the E.T.V. programme are more important among others.

Interactive Distance Education through Tele-Conferencing:

The Indian Experiments

A series of tele-conferencing experiments have been conducted to assess the feasibility - technological economic, pedagogic utility and acceptability in terms of learners attitude, reactions etc. of an interactive E.T.V. in the realm of distance education.

1. ISRO-UGC NATIONAL TALK-BACK EXPT. Nov. 25-30, 1991.

To study the feasibility of two way communication in CWCR programme, the ISRO (Indian Space Research Organisation) UGC (University Grants Commission), talk-back experiment in India was conducted from 25th Nov. to 30th Nov. 1991.

Later on such a system can become an operational system. Twelve CWCR programmes were selected for telecast. For conducting this experiment, different agencies, namely, UGC, SAC (Space Application Centre) DECU (Developmental Educational Communication Unit), ISRO (Indian Space Research Organisation, AVRCs (Audio Visual Research Centres), EMRCs (Educational Media Research Centres) and Doordarshan collaborated. In this system a pre-recorded programme was beamed from the ISRO Delhi, earth station to the INSAT-ID Satellite and then received back by a normal TVRO and easily transmitted by a TV transmitter on VHF or UHF. This ETV programme was received by students sitting in the classrooms. Ahmedabad, Calcutta, Hyderabad, Madurai, Roorkee and Patiala were the centres selected for talk-back. Two of these centres, namely, Jodhpur and Imphal were linked with the studios at Delhi through Satellite INSAT-ID, whereas, the remaining six centres were linked through the public switching telephone network (PSTN). The students of Jodhpur and Imphal asked questions back through the talk-back terminal. These signals were received and relayed by INSAT-ID Satellite and then received by ISRO, Delhi, earth station. The talk-back from the remaining six centres was facilitated through straight trunk dial (STD) of public switching telephone network. The responses by the TV teacher to the questions raised by the viewers, were communicated through the Satellite and then received through receive-cum-relay transmitters and VHF sets.

To facilitate the talk-back experiment one bilingual moderator was available at each media centre for the experiment. His main role was to establish the link between the resource person and the student. He moderated the student question, and translated it into English, if required. At the Delhi studios the questions were responded to by the resource person. There was an anchor person to help the resource person in receiving questions from various media centres. The resource person was accompanied by a Delhi-based expert.

2. INDO-US SUBCOMMISSION PROJECT CLASSROOM 2000 + : 1993, May 3-7.

Under the auspices of the Indo-US sub commission the Central Institute of Educational Technology (CIET) has been appointed as a nodal agency to execute the project - classroom 2000+. The project aims to demonstrate interactive distance learning techniques for improving student learning in Physics and Mathematics.

The demonstration in interactive teaching was confined to six schools - one Kendriya Vidyalaya Sangthan School each in Bombay, Calcutta, Hyderabad, Madras, Ghaziabad, and Senior Navyug School.

The technology comprised TV, Computer, Telephone, and Keypad. The lessons were telecast for class XII from 3 to 7 May 1993, in Physics and Mathematics from 09.45 to 10.30 hrs. and 11.15 to 12.00 hrs. respectively. Participating schools were equipped with a TV receiver, Telephone, Computer and interactive Keypads.

The teachers' lessons were live from CIET TV studio to Doordarshan via Microwave link and uplinked to satellite for transmission. The communication between the students and teachers in the studio was established by telephone and keypad based computerised response system. The keypad response system consists of a keypad for each student, a classroom computer, two telephone lines and master computer at the CIET. Throughout each lesson the tele teacher asked questions and students entered their responses into their keypads. Within seconds the answers from all the students were tabulated into a bar graph which was visible to the students as well as the tele teacher. The CIET, CMS Doordarshan, Kendriya Vidyalaya Sangathan, and Kentucky Educational Television Collaborated in the experiment. From each school there was a Coordinator to facilitate the experiment.

3. CEC-ISRO-UGC-IGNOU Teleconference Dec. 15-24, 1994.

Under the collaboration of CEC, ISRO, UGC and IGNOU a course of "New Communication/Information Technologies" was taught during Dec. 15 to 24, 1994 with the following objectives:

1. To create awareness and impart knowledge about the new communication/information technologies and their applications, especially amongst CWCR viewers.
2. To de-mistify the new communication technologies and their applications for CWCR viewers.
3. To assess the benefits and potentiality of the interactive mode for the passive audience: those CWCR audience who are likely to be the main audience but are probably unable to use the talk- back facilities keeping in mind the socio-geographical context of the country.
4. To assess the benefits and potentiality of the interactive mode for active viewers, that is, those who view & participate in the interaction.
5. To estimate all the costs, operational possibilities and likely benefits of operationalising such an interactive mode in the CWCR's regular transmission.

The 'teaching end' located at ISRO Ahmedabad telecast the played back ETV programmes on the specified content area. It had the facility for video-play back transmission through an up-link earth station to the usual transponder INSAT-ID which was re- transmitting to the 'receive only units' and the interacting 'Talk-Back' units. The teaching unit was provided with a mini- studio for on-camera answering of the tele-queries from 'talk back' units. The UGC media centers (AURCs & EMRCs) organised the experiments in different talk back locations spread over the country.

4. NOS-DECU-ISRO TALK-BACK EXPERIMENT, Dec. 17-19, 1996.

The National Open School, an autonomous organisation of the Department of Education, Government of India conducted a tele- conference experiment to orient the teachers of Gujarat (who are associated with the activities of open schooling)

in open schooling system. The Satellite based teleconference was a one way video and two way audio system. In the present experiment the teaching end was the ISRO/DECU studio at Ahmedabad while the classrooms were at the various district headquarters. In this system the teaching end comprised of a studio where the experts presented an area or topic live. These presentations in TV form video and audio were transmitted to the satellite through the ISRO studio. The satellite relayed back the TV signals for reception directly by small dish antenna terminals and TV sets at classrooms of the eleven District Rural Development Agency for about 300 target viewers.

The Programme Schedule

The programme was of 3 days duration from December 17-19, 1996. Following were the training areas:

1. Concept and Philosophy of Open Schooling.
2. Role of teacher in the study centre.
3. Interactive Instruction.
4. Counselling: Its need and relevance in open learning.
5. Tutor Marked Assessment (TMA): Its need.
6. Examination and Certification.

Daily 10:30 to 11.30 was morning presentation session, followed by half an hour break for activity and sending in questions and then one a half hour for talkback. 13.00 to 14.00 was lunch break. 14.00 - 15.00 afternoon presentation session, followed by half an hour break for activity and sending in questions and then one and a half hours for talkback.

The Over-All Experience

The formative and the summative evaluations of the said experiments yielded an overall experience summed up as :

* The technical, instructional, economic feasibility, legal viability and social acceptability was established and it proved the operational possibilities of an interactive distance education system.
* Potency of tele-conferencing as an instructional tool in direct classroom, enrichment education and professional training was realized through the experiments.
* In most cases technical co-ordination among the technologists and pedagogist was very successful.
* Except in a few cases of improper use of media-materials due to technology unfamiliarity on part of the academicians and learners, occasional technological short comings and personnel management, the experiments were a success.

FROM LAB TO OPERATIONAL LEVEL: IGNOU TELECONFERENCING

In an attempt to implement an interactive ETV for distance learning, the IGNOU has been conducting tele-conferences regularly for

i) Distant students of various courses of IGNOU;
ii) Counsellors handling counselling sessions for various programmes at study centres;
iii) Regional Directors, Asstt. Regional Directors and Staff members of IGNOU.

The Interactive Network System has three basic components viz:

1. The Teaching End;
2. The Receiving End;
3. The Space Craft.

The teaching end transmits the instructional signals (Live Instructions, Play Back Instructions, Panel Discussions etc.) to a geostationary communication satellite through an "up-link-earth station" located in IGNOU's campus. The satellite communication is possible through an extended 'C' band transponder on INSAT-2B. The satellite receives, amplifies, and transmits these signals which are received at the receiving ends (Classrooms/Conference Halls) by means of a Direct Reception System (DRS) - a perforated dish antena of 8-12 diameter, front-end electronics and an ordinary television receiver. The receiving ends have been provided with STD facilities to have audio-interaction with the teaching end. Currently there are two types of receiving ends viz: (i) 'Talk-Back' locations, those having STD facilities and are able to interact with the teaching end (ii) 'Receive only unit' those without STD facilities receive only and cannot have interaction with the teaching ends.

Future Directions

Much has been achieved about an interactive Distance Education System through tele-conferencing, but much remains to be done. In order to make the system pedagogically more effective and efficient more insight is required into the following aspects:

* What should be the structure of interacting expert team (anchor, moderator, content experts)?
* When to go for live/play back instruction, what should be the deciding factors?
* How to determine the appropriateness of a specific tele- conference Mode and the interaction modality?
* Is there any necessity of orientation for tele-querying and Tele-presentation?
* Do we require to impart an elementary knowledge of technology to academicians and learners for efficient handling of the equipments?
* How to select and adapt instructional communication strategies in relation to tele-conferencing?

* What about future extension of talk back units? How to manage more number of tele-querries within the available limited time slot?
* How to overcome the long standing inertia of the traditional teaching learning system and set it into the new system?

Need for Basic Research?

The series of experiments concluded in an air of satisfaction through seeing the system activates. Yet can we remain smug about some sincere doubts?

How is the depth/level of interactivity; in tele-querying?

How does it add to the 'meaningfulness' of learning in terms of underlying cognitive maps in the content area of learning ?

Is the outcoming satisfaction not a reflection of emotive enthusiasm of being involved in the process?

Only a more rigorous inquiry can supply the answers.

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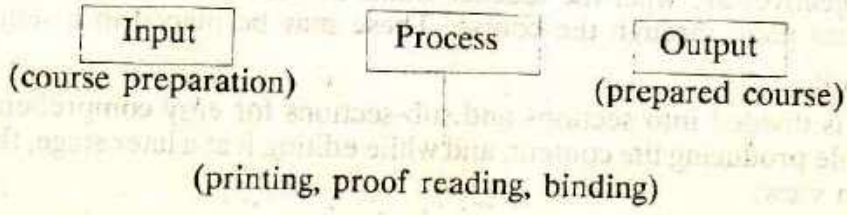
THE NEW EDUCATIONAL PARADIGM : SOME PEDAGOGICAL ISSUES

Surinder K. Shukla

From oral to written to print to photography to audio-visual aids to the new elective communication skills, pedagogy, the art of teaching, has been changing continually. But the revolution brought by the electronic eighties remains unparalleled in the history of mankind. Information technology has indeed revolutionized the work culture throughout the world and thrown up several pedagogic issues. Capabilities of sharing information, knowledge and experience, without physical proximity and through information devices have enhanced the perceptual, conceptual and physical understanding of the world as a whole.

The pedagogic issues pertaining to the art of teaching include: a) to communicate with the learner; b) to explain the course to learner; c) to maintain interest of the learner; d) to evaluate his work, and e) to get a feedback.

The method of imparting education from a distance is a relatively new method. In India it has even more recent origins. The electronic eighties and nineties have offered sophisticated technological methodology and made the system of distance education a bigger success. However, despite advancement in technological methods, the printed course material still remains the backbone of instruction to the learner. Course development in distance education is a distinctly different exercise than the one in the conventional system. Three approaches used for course development are : a) Course-team approach; b) Single-member approach; c) Hierarchical approach. Course-team approach is considered to be superior to other approaches because of its advantage for the development of inter-disciplinary courses and for employing the multi-dimensional approach of instruction to the learner. The instructional system requires a number of inputs in terms of the teacher's competency, learner's background, infrastructural facility, curriculum etc. In order to operate these inputs, the instructional system uses varied processes which require teaching and communication skill and students' active involvement. The output (namely the lecture script/course) is to be evaluated in order to understand the effectiveness of the system. This process, based on Systems Approach, may be graphically expressed as follows:



The special feature of distance education is that the pedagogic merges with the technical (printing etc.) and administrative (mailing). For the best of teaching skills can be reduced to a nought if the technical and administrative aspects are either poor or badly coordinated. On the other hand, efficient technical and administrative aspects, can be rendered useless if the pedagogue has prepared a sketchy course material.

The instructional system lays focus on the following points regarding the course preparation, It should be:

1. Self-explanatory: The content should be related to the learners' previous knowledge, and be logically and conceptually clear.
2. Self-contained: Text of the course material should be self- sufficient so that the learner does not have to hunt for extra reference material. This is done keeping in view two factors - a) the learner is not a whole-time student and may not have access to the library; b) He may be too tired after day's work to bother about libraries at all.
3. Self-directed: The course material should provide the necessary guidance, hints and suggestions to the learner (through easy explanation, illustrations including learner activities in the text).
4. Self-motivating: Like a good class-room teacher the course material should be very encouraging i.e. proceeding from simple to more complex.
5. Self-evaluating: The learner can be encouraged to get a feedback about his progress by providing self-check questions and in-text exercises. Style and tone of the course material should be moderated to become simple, clear, focused and friendly rather than a stiff and scholarly monologue. The course material would have the skeleton as follows:

i) Structure of the unit:

Structure of the unit is detailed itemisation of the content divided into sections and sub-sections. It displays structural relation within the content. It helps the learner to overview the text and locate relevant parts efficiently.

ii) Introduction:

For preparation of the introduction the instructor makes use of access devices such as - a) Introduction to Course; b) Introduction to Block.

iii) Objectives:

Objectives are what the teacher wants to convey to the learner by the time the latter has gone through the course. These may be placed in a sequence.

iv) Content:

It is divided into sections and sub-sections for easy comprehension by the learner while producing the content, and while editing it at a later stage, the following are kept in view:

* Adequacy
* Relevance
* Logical arrangement
* Illustrations
* Learner's level
* Appropriateness of example including data, experiences, facts, figures
* Copyright rules.

v) Let us sum up:

This is a short summary to help the learner to recapitulate the main points by a method of repetition.

vi) Unit-end activities:

Unit activities are given for self-assessment by the learner. These are important for the instructor also as they are useful for improvement of the quality of the content, it is important to 'listen to the learner'.

vii) Points for discussion:

These can be raised by the learner and discussed with the instructor during the counselling sessions.

viii) Suggested readings:

A list of suggested readings is given for further references by the learner.

An endeavour is on, by the instructor for the improvement of qualitative and quantitative nature of the content of the course. For this the instructor must keep the Levels of Learning of the learner in constant focus. The following table reflects the levels of learning and their corresponding requirement -

1.	Knowledge	Most elementary level
2.	Comprehension	|
3.	Application	to
4.	Analysis	|
5.	Synthesis	
6.	Evaluation	Complex level

The 'literacy explosion' in the modern and post-modern world has forced the universities to move increasingly from the conventional campus-based mode of education to a dual-mode i.e. campus-based as well as distance education.

Learner from Article of Consumption to Article of Production:

Consequent to the emergence of new educational paradigm is confronted with new issues of pedagogy. The new educational paradigm aims at the turnout of students, who are socially and economically productive citizens of society. The students, then, if treated as articles of consumption have to be equipped fully in order to become articles of production. Otto Peters (1973) originally put forth the 'industrialised model', in which he describes distance education as an industrialised form of education. It differs markedly from the traditional education which he described as 'craft' (1983, 1993). In the case of craft, production lies in the hands of the workers to a large extent. On the other hand, industrialisation focuses on the organisation of work and production. In the 'industrialised model', Peters is concerned with (i) the level of output of the system and (ii) the internal processes which help increasing the output. Therefore, the focus must lie on the concepts of rationalisation (Peters equates rationalisation with efficacy i.e. pressure to achieve a given level of output with comparatively lower input of power, time and money); division of labour (including emphasis on preparation, planning, organisation and scientific control); mechanisation; the formalisation of processes; objectification of work; mass production and standarisation; and the concentration and centralisation of capital. Each aspect needs careful handling by the distance education teacher.

Structural changes in the nineties, resulting from technological innovation, have further, rendered the conversion process more complex than ever before.

Structural Changes and Pedagogy:

Teachers must cope with two most significant changes: new reforms in teaching as a result of technological innovation; and change in the structure of their population i.e. the students. Educators are strongly influenced by 'new pressures from without' (Benswick, 1977) such as prevailing mores and their own social and cultural standpoints; swayed by pressures felt but not articulated, by assumptions never challenged and biases not recognised (Naik, 1974) for educational research and experimentation, development of teacher-learning techniques and programmes of in-service training. The teacher also has to keep abreast with the changes in the student population (Young, 1995).

In certain important respects, children have grown up more quickly than they did earlier, e.g. ;the age of puberty for girls and boys has gone down in the past century. The children behave like little adults much earlier than they did - with their own music and clothes and paraphernalia - and authority of parents has weakened which means that there is less authority for teachers to borrow from parents, and it is more difficult for them to keep order in classroom. On one hand, as a result of becoming adults quickly, childhood has been shortening, on the other hand education has been lengthening - both legally as well as conventionally. The result is that teachers have to struggle with ever less biddable students (Young, 1995).

Student Identity and Pedagogy:

Sense of belonging to an institution is missing in case of distance education student. Shah (1994) refers to the feeling in distance education student that he is not a 'real student but an imitation'. On the other hand, the changed student identity places a greater responsibility of learning on the student himself. For some (Brown, 1995 quoted in Open Learning February 1996, p.8) the student identity can be reconstituted around the activities of the students which include:

* acquiring skills of study
* adopting academic/learning seriousness
* challenging motivation
* gaining self-confidence
* making visible the student's role at home and at work

Modern and Post-modern Identities:

Distance education offers a traditionally non-educational setting. Therefore, the old boundaries of 'bounded identity' of student is ruptured giving way to new boundaries between e.g. education, training, business, entertainment, and leisure. New forms of teaching and learning displace the old 'serious repetitions of the enlightened pedagogue' (Edwards, 1996). Even new boundaries of student identity are difficult to sustain in the late modern and the post-modern condition of globalisation and spacetime compression.

The post-modernism lays particular emphasis on consumption, life style and status, related with the electronic media leading to a constant juxtapositioning of images. This provides for the possibility of 'open-ended rather than bounded identities' (Edwards, 1996).

The pedagogue must take into consideration the new signs of structural changes and student identity in modern and post-modern times even while building the industrial form structure of distance education.

Commensurate with the various levels of education (Koul, 1988) as indicated below-

* Layman's level
* Technician's level
* Diploma level (Lower and Higher)
* Degree level (Graduate)
* Post-graduate level
* Research level - Research level should be a sustained contribution to knowledge.

In the new paradigm carried out by the structural changes within the Distance Education, certain questions that have arisen earlier but require new approach. These are - what are the duties of the distance education teacher? How does he perform them? The techniques of distance teaching may be summed up as -

* Academic communication
* Personal communication
* Supplemented communication

The third i.e. supplemental communication has undergone major changes which require due consideration. This is so especially in the Third World, which is fast developing but since resources remain scarce, priorities have to be fixed. The student in these institutions, as elsewhere perhaps, needs to be warmly enveloped within the fold of distance education rather than being 'alienated' or scared away by the application of new technological methods which form a part of the supplemental communication with the student. There is need for what is called 'glocalisation'. Mike Featherstone (1995) has introduced a new term 'glocalization' which he considers is more comprehensive than the commonly used term globalization. Glocalization highlights the 'local aspect' which is largely neglected by the term globalization which also promotes locality, but does not either from above or outside and is therefore more 'distant'.

This is likely to be the pressing demand of the 21st century in which the requirements of the student-consumer have to be fulfilled in order to convert him into a producing citizen of society.

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"PERSONAL TUTORIALS : THE ROLE OF AUDIO-CASSETTES IN DISTANCE EDUCATION

Meera Malik

> "There is a need for use of mass media especailly radio and television as support systems to complement the existing print and micro-media to strengthen the goals of distance education."[1]

The above is one of the recommendations of the "National Pilot Training Workshop on Distance Education". This high powered committee (in collaboration with UNESCO and the Ministry of Education) deliberated for a fortnight on the future planning of distance education and carefully worked out some recommendations, as early as 1985. This recommendation is of special significance because it brings into focus the fact that if distance education is to be just a photoprint of the formal system of education, the basic objectives of the system are defeated.

Democratisation of education without adequate facilities implies a fall in standards.So in our enthusiasm to provide education to all the second chance education should not become second rate education. Audio-video programmes are a part of the self-instructional material. The whole material has to be integrated and sent out as a package. Motivated learners and professionally honest educators can get a lot from these. But all said and done the distance learner lacks the security of regular face to face contact with the teacher and the warmth of a peer group. The basic premise of this paper is that audio- cassettes, can play a very important role in filling this vacuum. They are easily available. They are cost effective. It is much easier to write 'the teacher in the script' of a talk rather than a lesson. The personal contact programmes are few and far between. Not all the students can attend them. In such a situation the audio cassettes can establish, the necessary personal contact, which is essential to give comfort and confidence so that the learning process is not impeded because the distance learner feels alone and isolated. He is highly motivated so even after a hard day's work he sits with lessons and books. He reads a little. But after this if it is possible for him to hear the warm, friendly, guiding voice of the teacher, the process of learning will necessarily be facilitated and accelerated. One needs no statistics to prove this.

It would be pertinent to point out here that when I talk of audio-cassettes I include the broad-cast for the universities on the AIR, as also the other cassettes which can be prepared by the department and made available to the students through the audio library. At the moment in our Education Media Centre (EMC), at the Department of Correspodence Studies, Panjab University there are ap-

proximately 325 audio cassettes. The students of the department can bring a blank cassette and get it recorded free of cost. The popularity of this is rising steadily. The records show the following :

Academic Session	Total No. Programmes duplicated
1. 1993-94	320
2. 1994-95	500
3. 1995-96	680
4. 1996-97	792

This collection needs to be further enriched and made more user-friendly. Tony Bates reasons out the rising demand for such cassettes.

> There are several reasons why audio-cassettes are more popular now.....The academics like them, because they feel they have more control over their use and can integrate cassettes more tightly into course design. Cassettes can be used in a variety of ways for mastery learning,for commenting on diagrams, charts, tables, or texts..... as resource material or for specialist lectures that explore the wider significance of the course subject..... Students like audio cassettes. In a majority of courses, they are ranked as the most useful component of the course. The features, that appeal to the students are their convinience (they can use cassettes where they wish to study), the control students have over them (they can play parts of the cassette as many or as few times as they need), and their uniformity. Students frequently comment that cassettes are like having a personal tutorial with the course author in the student's own room, a quality that appears to be lacking in radio programmes, however, skillfully they are made.[2]

Needless to say that the most important person in the scheme of things is the obscure learner, class room pupil,the distant alumnus, with his/her problems, special talents and hopes, and with his/her place, schedule, and environ of learning. Any programme that loses sight of the learner becomes arid and meaningless. Since audio-cassettes meet the multifarious needs and aspirations of the distant learner in a way that nothing else can, there use must be further encouraged.

Broadcasts and audio-cassettes must be designed and tailored to complement other materials and programmes of the course. In the distance education mode these are : course materials (lessons), students' response sheets, and the personal contact programmes. It is very essential to keep the idea of complementarity in mind. On the other hand each part of the package should be an independent unit. The course material (lessons) may be complete in the totality of their approach without reference to any audio-matreial which may be tailored to supplement the printed material. At the same time the audio- cassette is not a corollary of the

lesson. It makes the student grasp the subject more fully but it is complete in itself and self-sufficient in the totality of its approach. There is bound to be some repetition in this approach but it is certainly not useless repetition for it reinforces and underlines the important points. In a class-room situation too there is quite a lot of repetition, which is to the advantage of an average student.

The radio-talk or the cassette prepared for a target student audience differs from an ordinary talk. An ordinary talk is unrelated to anything that the listener already possesses, including his basic knowledge of the subject. An educational broadcast or cassette is related to something the students already have -- the printed material and it superimposes itself on the foundation of the basic knowledge of the subject which they already possess. Its degree of distinctive difference from the ordinary talk must, therefore, give it a different colour, a different personality. Such a talk must retain the seriousness, dignity, and grace of the subject. Without sacrificing the quality and strength of communication, it must retain its academic worth and curricular significance.

The writer must give an adequate treatment to the subject and must not leave anything to be discussed 'after the tutorial'. At the same time superfluity and redundance must be cut to the minimum. Beating about the bush and trips of verbal felicity (two great temptations to teachers !) must be avoided. The teacher must use a language that his target audience can follow, without the help of a dictionary. There should be nothing ambiguous and confusing because in this 'tutorial' the teacher is not physically present to clear these doubts.

In preparing an audio-cassette say everything to yourself before you write it. Don't just think a sentence : vocalize it in a whisper. The style is conversational but the purpose is to communicate ideas swiftly, economically and persuasively. For this it is essential to use the right word. The right word is one which has a certain inevitability about it and gives you a feeling that no other word would do in that particular context. In this the *Thesarus* can help you more than the dictionary.

The teachers preparing the audio-cassettes need certain Skills and Tools.[3] The Skills refer to the aptness and sufficiency of the material used by the author, as also its form and structure. The writer will also arrange the material : introduction, development of thought, arguments, illustrations, and the conclusion. By Tools is meant the laws that govern the manipulation of language to oral delivery. Proper tools help a talker to shape his presentation, projection, dramatisation, pauses, speech evolution -- in short the art of impressive, vigorous, and graceful fluency.

It is my experience that most of the talkers are skilful but somewhat deficient in tools. As subject experts they are proficient in the matter but the manner can do with some improvement. To put it yet another way they know what to say but can do with some help in how to say it. So at this point I would like to dwell, at some length, on this aspect.[4]

A teacher who prepares audio-cassettes must learn voice control. Namely to have control over your breathing, and pitch, and volume. There are only three ways to achieve it

1) Practice
2) Practice
3) And more Practice

Rehearsing helps. Rehearsing in front of the mirror helps even more. Practice with gestures and movements. Change the tone to suit the temper, list listless moments and convert them into lively ones, practice stress and intonation, and take care of the pauses. Know your lines well -- there is no need to learn them by heart. If your head is lifted, the voice is freer.

In the vocal interpretation of a script Rate and Volume of voice are important. Rate is relative. Rate is less descriptive of mood and emotion than phrasing and voice quality. An even rate becomes monotonous. In a long speech, especially, the rate should be varied. It is of paramount importance that rate is such that it is easily intelligible to the listener : remember he/she is not as familiar with the script as you are. It is an art to maintain a casual, conversational tone while increasing your rate, or to give a passionate cry of anger when you are being signaled to decrease your volume. Sentences are abandoned in the middle because a new thought has struck.

If you have a line which is to be read with excitment, you don't need speed as much as you need fast, irregular breathing, higher pitch, an uneven spacing of groups of words, with a sharp fast attack on each group. A badly written script which does not take into consideration the special requirements of the medium may put it thus :

(Fast and excited) : "I can't belive it that India actually won the match from the Sri Lankans, who are the world champions, I just went out to witness the match and saw the historic victory".

No matter how fast you read that line, you can't get much feeling of excitement into it, because its just not there in the script. You may lose the listener because you have become unintelligible. In a good script, the pattern is set in the lines themselves. An excited person does not use long sentences with sub-cluases and logical word order. A truly excited interpretation would be : " We won.....We won the match.....So unexpected.....beat the world champs.....Sri Lankans.....and imagine I was there.....actually there.....when this happend.".

The same applies to volume. Volume is relative and adaptable. Changes in volume give variety : nothing is whispered so softly that it cannot be heard and nothing is said so loudly as to blast the mike. In fact, changes in volume must often be accomplished by changes in mike position. A sudden change in volume

is jarring. Do not decrease the rate when you decrease the volume. Similarly an increase in volume should not be accompanied by an increase in rate.

An audio-cassette or a broadcast is a vocal interpretation of the written script so the pauses are of great importance and must be marked clearly in the script (mostly as punctuation marks). Pauses are the heard punctuation. They make the script alive and meaningful for the listener. It helps him to visualize what he hears : For example : "Let me straingthen your saree, Ma. There !" The pause before 'There' should not be long enough to perform the action, but it should be long enough to let the listener imagine it.

The above voice control is essential for all. In emphasizing about the tone, pauses etc. perhaps the author is speaking more about languages dealing with poetry, fiction and drama. One would hardly expect to use an excited tone in talking about the statistics of national income, the conquests of Mughals or the mineral wealth of India ! I have, however compiled a list of some general do's and dont's from two very different but equally authoritative and useful sources.[5] I present the list :

1. In a broadcast the two important components are : What is said and how it is said or the matter and manner.... clarity,vividness, and variety should be the key-words in tackling both.
2. A good talk is not straight forward reporting. The speaker should be natural and the individuality of the speaker must come through.
3. The language should be simple and intelligible. It should mainly have short sentences and use familiar words. The length of the sentences may vary to provide variety. Sometimes difficult or technical words are necessary for an understanding of the subject. As a general rule never use a difficult or archaic word when a simpler one will serve the purpose.
4. The talk has to be direct and brief but to the point. Resist the temptation to pack the talk with too much information or facts. Remember they have the lessons and the text books. There should be a straight forward organization of ideas. It is a good idea to repeat the important facts or ideas.
5. A very important exercise is to screen the scripts. It must supplement the information already available with the student. It can have a fresh approach to the subject. Give a graphic description using concrete, "picture" words. Add examples, illustrations, anecdotes.
6. A good script can be destroyed by a bad voice or indifferent presentation. Try to introduce some change of pace and mood. Use humour whenever appropriate. Use the dramatic devices which suit your script : sound and music, pause, question, exclamation. The manner must match the matter.

What should be the focus of the audio-cassette library in the department? Obviously each department or to be more specific each course leader can decide this after viewing the material available to the student through the lessons, text books, the AIR broadcasts, and the personal contact programmes. For English (this may also be true of other languages) we have prepared some general talks; How to consult a dictionary, How to increase your vocabulary and such topics as may be of interest and use to our students.[6] In the formal system the teacher mentions and discusses these in the class. The talks on poetry are very useful. There is no such thing as an unvoiced poem. The explanation, summary and the theme of the poem may be available to the student. A poem is basically a lyric meant to be sung. Reading it with the right pauses and a suitable tone will bring it alive to the distant learner,as he visualizes the figure from which the voice issues. The cassettes prepared by the BBC have shown how the pupil can drill himself in liguistic capabilities by operating the cassettes repeatedly.

The audio-cassette is particularly useful for discussing the text of a novel.[7] My experiment in this has yielded very positive feed-back,so I would like to dwell on it at some length. In my over twenty years of post-graduate teaching, I have found that the distance students get sufficient material on the novels prescribed for them through the lessons. In fact the lesson format for our students is fairly comprehensive. A historical survey places the novelist in the proper perspective. There is a resume of his life and works. After this, there is a summary of the novel; followed by a discussion of the various aspects of the novel; plot, themes, characterization, vision of life and so on. If there is an AIR broadcast only one aspect of the novel is discussed because the time limit for the talk is fifteen minutes. There is a further reinforcement at the personal contact programmes, where the brief sessions have to be totally examination orientated. There is no reference to the context question from the novels. So the four or five topics are repeatedly put across to the students. There is no guided reading of the text, which happens in the formal class- room situation. Our students are not exposed to the classic itself. This can be done through an audio-cassette, which can be a kind of guidance on how to read the novel. This will enhance the student's understanding and enjoyment of the novel and he would be encouraged to read the classic itself. After all,the best thing that you can read on **David Copperfield is David Copperfield!**

I have reviewed some of the lessons in my course in American Literature (M.A.II) . I felt that additional material to distant learner would facilitate his understanding and enjoyment of the authors. In case of Eugene O'Neill the material needed to be supplemented.[8] For Mark Twain the audio-cassette provided a fresh approach to the masterpiece[9]. Taking up Hawthorne, the model talk provided a more comprehensive thematic analysis of the novel[10]. My efforts have been amply rewarded by the students making use of these and getting them duplicated session after session.

The facilities available at the EMC should be publicised more widely. Apart from the mention in the prospectus, a detailed subject-wise list should be made available to the students along with the first lesson in the subject. The various teachers should announce about it at the PCP's. In fact it would be a very good idea to provide a separate notice board to the EMC, where the lists can be put up for the various classes when their PCPs are being held. The lists should include copies of broadcasts at the AIR (which must be recorded first at the EMC), and the specially prepared talks for the EMC.

The possibilities of this medium are endless and exciting. At some later stage perhaps the DCS can help in formulating listerners clubs in various towns, and encourage group listening. The like-minded group can discuss the talk and form a peer-group which the distant learner misses sorely. The one way process of learning can be made two-way in case the programme is "ON AIR" live. The listener can phone the radio station to interact. If the question is considered relevant and useful for other listeners the telephonic conversation itself is broadcast for the benefit of others. The "Radio-phone-in" service as it is termed, is already being used in case of certain other programmes.

It is imperative to have regular and effective feed back from the students. This is very essential. At times it may require re-writing or re-organizing parts of the script. This may also encourage some of us to rehearse with a tape-recorder before the final recording.

Too many hassels ?

Too much trouble ?

Not really. When you think of hundred of homes where your voice will echo and inspire scores of students "To Strive, to seek, to find, and not to yield."

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DISTANCE EDUCATION FOR WOMEN

Veena Singh

Education has been highly valued in today's world. It is considered a priority across the range of social classes and incomes. However, there are still a large number of people, particularly women in the third world countries like India who are illiterate. Even those with some school education are functionally illiterate. The educated ones also have sometimes difficulty in disciplining themselves. Education for women is considered less important than for men, also superfluous or even damaging to their proper female role, and so time and money are not available for their study. But to meet the challenges of the changing society, a great emphasis needs to be placed on the education of women. Pt. Nehru once said that the great revolution in a country is the one that affects the status and living conditions of women. Distance Education or second chance education, as it is called, can play a very important role in providing opportunities to girls and women to acquire higher education.

As a result of development in our society new patterns of education are emerging. Distance education is one such unconventional pattern which adapts to the changing situation. Vernon. J. White writes :

> Those educators who have not been blinded by the chalk in their eyes now accept that the most significant step forward in education in this half century has been the burgeoning of the distance education mode of teaching, and let it be noted that just as significant in this decade will be the mixing of the distance teaching mode with the face to face mode.

Though Distance education started about 100 years ago, it has taken a century for the educational and political establishment to realise the importance of role that Distance Education can play in a modern society. It has developed as a part of the educational fabric today.

The educational scene in India has been evolving under the stress of changing circumstances. In today's world with rapid developments in every field of life, no one, particularly women should be deprived of the chances to get education. Distance education breaks down barriers - barriers between full-time and part-time provision, initial and continuing education, and between the vocational and the academic. The centres of distance education set out a vision of future which will result in dismantling the barrier. Distance education acquires greater significance for women because it makes learning accessible to them whenever they may be living in the country. In India many rural and remote areas are devoid of any facilities of higher education. Many of the parents of the girls do not like to send

their daughters away from homes to study. The centres or universities offering education through correspondence courses provide opportunities to the aspiring girls to pursue higher studies. Distance Education can serve these women everywhere and move the educational opportunity to where the potential students live. In this context B.Devi Prasad argues, "It is high time that social work education should move from the narrow confines. P.G.Studies to the broader frontiers for the preparation of frontline, grass root level functionaries to work with the large masses of people who live in rural India."[2]

Many women leave the education system before completing their studies, either due to the circumstances or because they are not sufficiently motivated to continue their studies. After some years they start thinking of upgrading their education. However, they have by then established themselves with family, house and so on. In this life situation, distance education in much more flexible and convenient alternative than going to regular college again. The distance education institutions provide second chance education which is less expensive also. We find that now-a-days more and more housewives enrol themselves as students of correspondence courses. They realise that an educated homemaker is definitely better than an illiterate one who can not read instructions on a packet or the report card of her child. The improvement of family health and quality of living depends on women. Education imparts training to the mind to think clearly, and it unlocks the shackles of convention. Learning is not necessarily a matter of formal organization or knowledge of books. It is a personal experience of awakening to the real meaning of life.

It was Lenin who regarded women as intelligent human beings rather than as mindless objects of sex. No authentic feminism is possible without education. A woman has to prove herself in a man's world. Women have often been reduced to images of good mothers, good wives or good sisters. This has denied their human possibilities. The real emanicipation requires a women's ability to come out from these images. Education makes her aware of her infinite possibilities, and distance education makes it easier and more convenient. Mahatama Gandhi rightly says that women is the companion of man, she is gifted with equal mental capacities, therefore she has the right to participate in the minutest details of the activities of man. Today's society is marked by two fundamental characteristics, complexity and change. In the complex world a woman is required to play a multi-dimensional role. She, in addition to being a mother and a wife, is required to add to the family income. With the increase in cost and standard of living, she is required to work and earn. Therefore education becomes very necessary, and so distance learning all the more important. It helps the woman to improve her qualifications, which consequently prepares her for the job. In this age of advanced technology, increasing globalization, industrialization and urbanisation, education training, and skill are very essential for any kind of work. The centres of distance learning in the different parts cater to this requirement. In India, IGNOU (Indira

Gandhi National Open University) is one such centre which offers various kinds of courses and diplomas. There are many universities offering different courses. The Panjab University Department of Correspondence studies has contributed greatly towards this goal.

The centres of distance education are started with a mission to enable more of those who can benefit from higher education. But for any significant long term growth there must be fundamental changes in teaching and learning. Different and new methods must be adopted rather than squeezing ever smaller efficiency gains from the existing system.. A. Rocha Trindade has rightly said "Democratization of the access to higher education which has been achieved in various degrees in a number of countries and which is still a significant priority for many regions of the world, has led to the considerable expansion of existing conventional higher education institutions together with the creation of many new ones of the same nature". In this regard the guidelines set by the Open Learning Foundation, U.K., can help greatly. The institutions can break courses into more flexible modules. These institutions and universities in India must keep in mind the needs and requirements of women and offer courses to suit them, and also to make them finacially self- sufficient. There should be orientation programmes, and career planning programmes. Polytechnic, secretarial and teaching training courses can also be beneficial to women students. Distance Education must be in response to the clearly stated needs. The vocational qualification programmes for women should be incorporated. Distance Learning methods should refresh the practices and enhance the effectiveness of women trainees. The various means can be effectively used for teaching, like audio- video, work-book, a practical exercises book and a tutor guide. For this the faculty members must be motivated, and they should experiment with new ideas, of course with assistance from the universities and the centres. The quality distance education does not always need expensive course development and delivery mechanism. Given the right set of conditions, quality distance education can be developed and delivered cheaply.

In many countries like Greece, Y.W.C.A. (The Young Women's Christian Association) has launched the distance education programme.The organization with its aim of enabling the development of women and girls, has education as its main trust. Since its birth in 1855 Y.W.C.A. today has expanded to eighty countries. Following its example, we should undertake exploratory work in order to improve existing techniques to update methods adapting them to local resources. Distance education cannot afford poor courses going out late to the students. Staff training, competent work completed on time can also increase staff confidence, recognition, and institutional commitment. Quality can be achieved if universities cooperate in distance education field within a national frame work. The second chance education is the original mission of open universities. Apart from the general educational requirements of higher education, specifically, for women, the specific mission of distance education can be reached by making this kind of learning flexible.

Distance education should develop the potential to reach many more women than could be reached by traditional form of education and training. Some women students use distance education or the open university study as a vehicle for changing many aspects of their lives beyond the mere educational and academic levels. Today's women, particularly Indian women, exposed to the image of western independent women, is groping for her true identity. On the one hand she has to fit in the image of traditional Indian women, home-loving, coy, timid and dependent; on the other hand she wants to be confident, assertive, outgoing and independent. Education helps her to synthesise the two aspects successfully and effectively. It empowers women with necessary knowledge, skills, and attitudes. It implants convictions that changes in life style are possible. The problem and the challenge of the twenty first century is to abolish the inferior status of woman and to end her exploitation in society. Education, especially, distance education can go a long way to invest women with power, means, and rights.

Literacy among women in India is one of the lowest in the world. Many of the social ills of our country can be traced back to ignorance and illiteracy among women. Education liberates women by bringing social, political and economic awareness, and at the same time, awareness of her own lot. An educated woman experiences greater freedom, she is exposed to new situations and opportunities. Many of the problems like dowry-deaths, wife beating, over-population, diseases, child marriage and infantile mortality can be removed if women are educated. In India, women constitute nearly half of the population, therefore, women participation in the nation-building actitivities is necessary. Women form a link between society and culture. Yet, sadly woman have been denied their due. India's feudal soceity has opposed every move made by women for education. Women's education has beneficial multiplier effect on social and economic development. Looking at the importance of education for women, distance education can play a very significant role.

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A TRYST WITH DISTANCE EDUCATION

Ravi K. Mahajan

Notwithstanding high sounding claims on achievements that India 'has more than 588,000,000 people who have no difficulty in reading or writing, and as such India has more educated persons than the United States of America, Russia and the West put together'[1], the fact remains that in India educationists and planners, even after fifty years of independence, are faced with the challenge of providing educational avenues for its increasingly awakened population while staggering figures giving estimates of resources baffle their efforts. Notably, the task that challenges our educationists and planners, in general seems two fold, *viz.*, 'widespread illiteracy', and 'growing demand for higher education'.

Not long back the government took two epoch making decisions on the education front, one towards making 'elementary education a fundamental right' and the other in favour of 'reducing subsidy from 90 to 50 per cent on higher education'. As it is, both these decisions will have severe implications on the masses. By making parents more partners with the State in ensuring that all children are educated, the government, in the wake of lack of provision of educational facilities, is setting a stage where more parents may find themselves locked up in jail than children landing up in schools. On the other hand, the proposed reduction in subsidy to higher education, being a 'non merit field'[2], will make higher education costlier and almost beyond the reach of a significant section of our society.

Nonetheless, the situation clamours for a thorough revamping of our educational system. And it is not hard to do so, provided the stream of distance education (DE) is duly strengthened. Though DE is of a recent origin in India, yet it has gained experience enough to steer India out of the crisis. In India, formally starting in 1962 in Delhi University as correspondence education, it has come a long 'distance' with the establishment of Indira Gandhi National Open University in 1985, followed by ancillary Open universities. The revised National Policy on Education and Programme of Action (1992) does recognise DE as supplementary stream of education[3], but leaves much to be done and undone. As the situation exists, there is a U.G.C. grooming itself to cater to the needs of formal system and an upcoming Distance Education Council for furthering the cause of DE in India, but this is not what our country merely needs at this moment.

The strength of DE lies in capacity to negotiate with the problems that are present in our conventional system.

There is indeed an unending list of the problems that our contemporary education system is facing. These problems, in general, can be viewed in the light of 'changing complexion of 'students body', and 'constraints of the teaching community'.

As regards 'changing complexion of students body', it has been observed that over the years a new segment of students' body is emerging which is not very keen to join a regular school or college solely for sermons. Changes in priorities is quite visible with thrust ordinarily on a job, thence on improvement and enhancement of qualifications. Secondly, there has been a phenomenal increase in discontent among students towards their teachers and class- rooms. Students are looking for educational avenues where they can study as per their own pace and convenience.

Besides pressures from the changing complexion of students' body, there are certain constraints with the teaching community as well. With deteriorating teacher-taught ratio, these are surfacing more predominantly with every passing year. Ironically, there are some 'teachers' who despite their excellent academic background and conscientious hard-work fail to enact their 'teacher-like' role due to factors like uncongenial personality- traits. These limitations, necessitates incorporation of more and more teaching aids for effective communication.

Implications of these limitations are writ large in the casual way in which some classes are conducted at college or university levels. Of course no statistical index on degree of seriousness in formal system is available, educationists' repeated expressions on missing element of seriousness speaks volumes about the sad state of affair.

Nonetheless, a stage has reached where teachers feel that students are self-sufficient and intelligent enough to study on their own and students feel they can study in a better way on their own and at ease. Intrinsically this stage is akin to rostrum on which the philosophy of DE thrives though unsung by the exponents. Notably with thrust on multimedia component in education, though the concept and components of DE have become an integral part of our educational lexicon, yet it has not been harnessed to its fullest potential. The situation demands a revolutionary change in existing education system in which both the streams of education are competing with one another for better status and recognition. The need of the hour is harmonious confluence of the two streams for the cause of providing basic education to all and higher education to all the aspirants.

Studies on 'duration of stay in the instructional process' and 'achievements of students in the examinations' suggest that the desired level of interaction with teachers is not directly related with the level of education[4]. As students at the earlier stages of education need more care and attention of teachers than those at the higher level, then will it not be better if students in higher education be attuned to study through DE? This arrangement will not only make provision for the utilisation of existing infrastructure for students at earlier stages of education, but also give equality

of opportunity to aspirants of higher education besides making higher education less expensive.

Precisely, in the present scenario (as per the data of 1994- 95), India has an infrastructure of over 5,81,000 Primary schools, 1,53,000 Middle schools, 92,000 High/Higher Secondary schools and over 6,000 colleges for general education, besides over 1,200 professional colleges [5]. And to match the existing facilities for a population which is growing with an average annual rate of over 2 per cent with two commitments, viz., 'education for all' and 'self-financing higher education', is otherwise a yeoman's job. However, by providing instruction for M.A.'s and B.A.'s exclusively through DE, the High school classes may be shifted to the colleges and universities, and Primary school classes in turn be moved to the infrastructure being provided for High schools. This arrangement shall pave the way for accommodating high influx of pupils of basic education, whose population is highly skewed at the lower age level.

This scheme, of course pre-requisites proper planning and harnessing of tools of DE, as also taking into confidence teachers and students. As the situation exists, the DE stream lacks social acceptability, primarily because some of those who are involved in the stream often show little respect for its tools and secondly, the institutes of DE are deemed as profit- making institutes.

Before a course is formally announced under the new scheme, the self-instructional material, viz., printed lesson, response sheet assignments, audio-visual modules, TV programmes; the schedule for organising Orientations and Personal Contact programmes at various centres, etc., should be worked out for the course by a centralised body. The aspirants to the courses should get enrolled with the central body through their regional/district/city study centre, where each of the study centres should be equipped with audio-visual gadgets, library, etc. While orientation and contact programmes shall give an opportunity of face to face interaction with the teachers, the dedicated TV channels and AIR frequencies working under the central body should transmit and re-transmit educational programmes in a scheduled way for various courses.

To begin with this scheme could be launched for the courses in such faculties as Arts, Social Sciences which do not require scientific experimentations. Nonetheless, with the onset of 'Satellite' or 'Cable' culture and more recent Video- conferencing which promises two salient features viz., live transmission of events and repetition and retrieval of recorded events, for learners in particular learning in DE mode can become a glamourous and satisfying experience. This will expedite the process of 'universalisation of education' while opening up vistas for higher education economically to all those who are otherwise aspiring for improving and enhancing their academic qualifications.

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CONTINUUM OF EDUCATIONAL TECHNOLOGY : DISTANCE LEARNING AND ENGINEERING

Jiwan Tewari

Educational Technology with all its three domains of software, hardware, and systems analysis has its roots in the educational thought and process of past centuries. The over-riding aim has been to solve problems of learning and instruction for achievement of educational goals set forth under the prevailing social political and economic influences in a particular age and region with the region's distinctive characteristics featuring in it.

Contemporary India is faced with a great challenge of global competitiveness. Industrial sector requires hi-tech manpower in quality and quantity for increasing efficiency and productivity. This needs the adoption of alternative modes based on the recent developments in communication and computer technology. The continuing of the evolution of educational technology makes distance learning system in engineering education imperative for enhancing access to technical education to meet the growing needs under economic influences.

Before I take up the specific theme, a word about Educational Technology and Distance Learning.

EDUCATION TECHNOLOGY

According to Takshi Sakamoto (Bulletin of the UNESCO Regional Office for Education in Asia Vol. VI, No. 1, Sept. 1971) Educational Technology is an applied or practical study which aims at maximising educational effect by "controlling" such relevant facts as educational purpose, educational content, teaching material, educational method, educational environment, conduct of students, behaviour or instructors, inter-relationship between students and instructors."

In ancient times, we had only oral channel of communication. Then came literacy based on the concept of writing- a technology pure and simple. Writing reduces dynamic sound into quiencent space, separating it form the living present, where spoken word alone can exist. Writing (especially alphabetical writing) has brought a fundamental and drastic change in our educational technology. It has given rise to over 3000 written languages all over the world as vehicles of communication and learning.

For Plato, "writing would weaken the mind and destroy memory. Writing is a dangerous technology which would wreck havoc on culture". This is how he felt

in the context of perceived notions prevailing then. But during the long years that have elasped we have so deeply interiorised writing and made it so much a part of ourselves that we find it difficult to consider writing to be a technology as we commonly accept printing or electronic computer to be.

Our present day schooling is essentially about learning to read and write and then using these skills to obtain and transform knowledge stored by writing.

Writing technology brought phenominal change in the then prevailing educational scenario, giving rise to the origin of present day school and schooling. It did not just happen.

With the passage of time came the print, the post, the photography, the sound recording, silent motion picturing, synchronisation of picture and sound, and then the electronic transmission, giving a fillip to the multi-media approach of distance education as a part of the continuum of educational technology with all its innovations. Distance learning technology is facing the same indifference, rather a resistence, in our time as the literacy or writing had in Plato's time. There is nothing peculiar in it. We have often wondered over the possibility of any remarkable discovery and its use, before it has been made but after its achievement, we are equally surprised why it was not discovered before. The innovative development of educational technology as a product of the historical stream of human creativity will continue. To-day's abstractions will become the realities of tomorrow.

DISTANCE LEARNING IN the 21st CENTURY

Education in the post modern era ushering in 21st century with the electronic media playing pioneering role in development of relevant didactic conversation will be massively accessible, extensively flexible, and broadly diversified.

DISTANCE LEARNING

Distance learning is conceptually a blend of the new pedagogy and the modern technological innovations. Affirming the perennial belief in self-learning potential of the learner on the one hand and the utilization of the hi-tech communication on the other: the distance learning has explored new vistas of didactics in the transmission of information for the induction of knowledge, on to the learner through its own developed and developing choreography- the art of non-face-to-face transmission of instruction. Distance learning is neither better nor worse but it is distinctly different from face-to-face learning. According to Greville Rumble, a great exponent of the Distance System of Education, "Distance learning is an attempt in disciplining persons in a particular form of socialihood based on the reconceptualisation of 'information', 'knowledge', and 'choreography'.

The fundamental difference between information and knowledge belongs to the process of communication. Information can be transmitted but knowledge must be induced. Choreography tends to eliminate the problem of time and space between the teacher and the learner as to arouse a rhythemic chorus of learning among the

'distant' learners like that of group singing/dancing of the participants sporadically placed and responding to the tune of their performing master-director operating from the 'distant' citadel.

Accdrdingly the following-three stage of teaching process are envisaged in the distance learning system:

1. The teacher transforms his personal knowledge into public information.
2. Transmission and distribution of public information through one or more communication media.
3. The learner transforms the obtained public information into personal knowledge.

The second stage is central to the development of educational technology of distance learning. It aims to create teacher- learner contact in the absence of face-to-face class room situation.

The following progressional stages of educational technology of distance learning are in evidence:

1. Initial-correspondence teaching.
2. Existing-Multi-media distance-teaching such as radio, T.V., audio cassettes., telephones in addition to correspondence.
3. New (Just setting in)- Telefax, video cassettes, optical storing media, electronic mail, computer conferencing, video teleconferencing, use of satellite for telecast.

The most significant aspect of this is that subsequent stage is supplementing the former and not replacing it.

The underlying aim all through is greater accessibility, extensibility, diversity, flexibility, and equity through various channels of education. At the moment, the artificial barriers such as the separation of the teacher from the pupil are no longer any hurdle to learning in the face of hi-tech innovations in communication.

Distance learning, as a new concept has developed the much needed conversational didactics beyond the ones operating in face-to- face class room situations which are limited to the display of behavioural pedagogy and programmed instruction through lecturing and gesticulating.

INEVITABILITY OF DISTANCE LEARNING

The inevitability of distance learning system may be attributed to the four fold trends in the contemporary world, namely (i) the ever growing explosion of knowledge, expectation and aspiration with its technological manifestations (ii) alarming explosion of population especially in the Third World countries (iii) rapid technological advancements and (iv) the swing towards globalisation by the closed societies with increasing complexities of free market forces calling for new competencies through

education and training with greater accessibility, wider flexibility, and larger diversity. The distance learning channel thus opens new vistas for the protagonists of all disciplines especially in science, technology, engineering, nursing and medicine etc., to avail the instructional technology of distance learning to keep their clientele abreast of the needs and opportunities of their professions.

INDIAN SCENARIO

With the advent of New Industrial Policy and Liberalisation, the Indian industry is exposed to global competition. To meet this challenge it requires modernisation, upgradation of the competence of the personnel, utilization of modern management techniques, and improved efficiency and productivity while maintaining quality. But the existing facilities for continuing education and re-training are inadequate.

Distance learning methodologies for creating learning packages have to be employed to enable self-development and training of all technical personnel. This would form a part of the strategy to achieve the objectives relating to engineering and technical education in the country.

DISTANCE EDUCATION PROGRAMMES

Distance education programmes offered in India are mostly in non- engineering, non-technical and non-vocational area. Attempts to provide distance education programmes in Engineering, Technology and Vocational courses are rare.

The Jawahar Lal Nehru Technological University Hyderabad, BITS PILLANI, TTTI KHARAPUR & TITI Chandigarh are the pioneering institutions to start Distance Education in Engineering and Technology. Indira Gandhi Open University, New Delhi has also initiated Engineering Courses such as Water Resource Management, Pollution and Computer Courses, and also Science Courses like the B.Sc. More Courses suitably designed and developed by other Engineering Institutions could be offered through distance education mode in Engineering and Technology with success and acceptability.

NEED FOR SPECIAL CARE FOR ENGINEERING COURSES

For the meaningful implementation of Distance Learning Programmes in Engineering and Technology, special care has to be taken with regard to (i) designing of courses (ii) mode of entry (iii) lesson material preparation (iv) conduct on contact programmes in theory and laboratory courses (v) monitoring & evaluation and (vi) feed back and corrective measures. Practical work will have the key place in the learning material of these programmes.

ENGINEERING AND PRACTICAL WORK

Engineering is a 'hands on' subject. Its learning lies in 'doing'. Practical work has therefore to be built into the 'delivery of engineering at a distance'.

Alternatives to weave the practical work in distance learning in engineering are (i) Home kit (2) Provision of laboratories in study centres and (3) use of

laboratories in Engineering Institutions, Polytechnics, Research organisation, Industries etc. You may use one, two or all the three alternatives subject to the facilitates and resources available.

Measures to improve the quality of laboratory training are :

I) NON-CONVENTIONAL LABORATORY ACTIVITIES :

Such as print media; electronic media; pre-training and post training discussion.

Print Media includes compulsory exercises covering sequential steps in the experiments key aspects of the procedures, theories, principles, and their practical application.

Electronics media includes demonstration of experiment with discussion on video, step wise as in a class room.

II) CONVENTIONAL LABORATORY TRAINING :

Demonstration by counsellor /Tutor supporting systematic presentation of the sequence of events occuring in the conduct of the experiment with still photographs, visual aids, printed charts and hand drawn sketches.

III) OTHER GENERAL ACTIVITIES :

i) Prior understanding of theory for the conduct of the concerned practical to be skill-inculcating and objective- achieving.
ii) No disjointing of theory and practice.
iii) Practical manual to be highly illustrative, giving sequential diagramatic presentation.
iv) Essential key note points to be under every specimen for the distance learning students' ready reference.

The above measures are a must for quality assurance in laboratory training in engineering through distance learning.

Followed by good quality print materials, the strategies for organising contact programmes in distance learning should include laboratory and workshop practice tasks,project work, problem solving, case studies, seminars, lecture-cum-discussion, and computer simultated exercises.

For successful and relevant programmes, networking of institutions with industry and other organisations is a must. Collaboration even with foreign institutions for the quality of education and training is a pre-requisite to enable our students to compete in the open international market.

To sum-up, the distance learning in engineering education should aim at economic empowerment of learners through learner- oriented, modular, and flexible modes with multi-point entry and exit, conducted through mixed media. It should

be self- sustaining, cost-effective, and quality-intensive. It all depends on the faculty in engineering and distance learning as to how the new mode of learning for the training and re-training of its clientale is to be shaped using appropriate information and communication technology.

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ROLE OF TECHNOLOGY IN DISTANCE EDUCATION

Neelam Satsangi
Saran Kumari Sharma

There have been some major developments in distance education, paralleled by important technological changes, in the last decade. Referring to the media and educational technology, the policy document of NPE-86 observes : "Modern Communication technologies have the potential to bypass several stages and sequences in the process of development encountered in earlier decades. Both the constraints of time and distance at once become manageable. In order to avoid structural dualism, modern educational technology must reach out to the most distant areas and the most deprived sections of beneficiaries simultaneously with the areas of comparative affluence and ready availability" (1986-15-16).

Developments in Technology :

Developments in technology have led to four major trends :

1. A wider range of media is now becoming available for use in the home. To broadcast television, radio and home experiments kits already in use the new media that can be added are audio and video cassettes, video disc, cable and satellite T.V., telephone, microcomputers, viewdata and telecast systems, etc.

2. Three original media-broadcast television,radio and printed text-were not chosen by accident for the open university. A large chunk of students in the land could be accessed through these media. There is a greater diversity of access to new media.

3. Costs are coming down for new media. A c 60 audio cassette, containing one hour of material, can be delivered to an open university student for less than Rs. 30/-. Though video cassettes are a little costlier but the same could be housed in the library of study centres to be made available to the students as and when they feel any need to refer to the same.

4. New media are giving students greater control over their learning and greater opportunities of interaction. This is a most significant pedagogic development. While broadcasting is uninterrutible by the students, new media provide greater opportunities for revision,in depth thinking, and integration. New media increases the amount and level of interaction between a student and learning materials, and in some cases give more opportunities for human interaction.

Given the speed of technological development, and the pressure to use technology for its own sake, caution is essential. Nevertheless, audio-visual media are not sufficiently used in distance teaching, primarily because academics and administrators are generally unaware of their potential,inexperienced in their use, or frightened

off by their imagined costs. Let us now consider the media which are in use or could be used in future, and their limitations.

1. Print Material :

All the open universities in the world and other distance education institutions use the print material for instructional purposes. It is easy to carry, can be used according to the convenience of the student, and is comparatively cheaper. Not surprisingly, the advent of other technologies has not relegated the printed material into the background.

2. Broadcasting: Radio and Television :

There are three objectives in the use of broadcasting in education. Firstly the use of television and radio can improve the quality of existing educational production.

The second perspective justifies the use of television and radio by arguing that it can equalize, or spread more widely, educational opportunities.

Thirdly, use of television and radio is justified because they can be used as revolutionary forces to bring about radical changes in the social concerns and in the mobilization of the poor and the oppressed.

3. Video Cassettes :

In a recent article, two Indian writers, Sashi K.Gulati and Manoj Dutta of IIT, Delhi, made a forceful plea for video teaching for students of Engineering. They argue that the video instruction is useful,

a) as a method of self-study especially for weaker students.

b) as a means for teacher training.

c) as a means for bringing industrial processes to the class room particularly.

d) for continuing education in the off campus environment. In view of its effectiveness for teaching-learning process the video cassette is likely to be used extensively in open universities in this country.

4. Video Disc :

Another recent addition to educational technology is the video disc. This medium is helping to increase the capacity of the T.V.Set. The laser optical video disc represents the most recent advance in video technology. It could be used 24 hours per day.

5. Satellite:

Cable TV, Satellite is regarded as a glamorous medium and there are high expectations from it. In fact, it is known as education's rising star. There are at least three distinct forms of the use of satellite for tele-education.

a) telecasts of general educational programmes.

b) telecasts of pre-recorded television component of a learning system.

c) The live telecast of educational learning systems with two way interaction by regular telephone.

6. Telephones:

It may appear incredible in this country, but it is true that in some countries telephones are being used as a medium for education. A number of factors have contributed to the extensive use of telephones. They are: long distances in travel, high cost of travel and new technological developments. The advantage of the telephone in teaching is that it provides interactive communication across distances where it is being used, the telephone is less complex and less costly. The telephone is mainly used for tutoring and feedback.

7. Computer:

Computer as a tool is available to improve the process of teaching and learning. There are several qualities of the computer which are of tremendous use in teaching and learning in diverse situations. It is being used for teaching as well as administrative purposes. Well designed computer based courseware has the capacity to generate continuous, adaptive, individualized interactive experiences for students, providing them with immediate performance sensitive feedback. It has the power to stimulate complex operational systems, complex intellectual problems and so on. It has the power to free academic staff from tedious record keeping and the writing of possibly repetitive comments on student assignments. The major problem in the use of computers is not so much of possessing the hardware or its costs, but the costs of preparing and writing computer programmes and the problems of compatibility between different domestic computer systems. Further, because of the special skills and the time required to develop effective computer aided instruction the target number of students must be large.

8. Audio Cassettes:

A large percent of the students prefer to listen to radio progrmmes or recordings. In Britain and other developed countries this preference is understandable because almost every student can afford to use the audio cassettes to record the program for his individual use. This is not so in developing countries, like India, where fairly large number of students do not own cassette recorders. Therefore, they have to integrate the cassettes into the printed courses design and the academics feel that they have better control over their use. Students like them because of the convenience, control and informality.

9. Video tex :

Videotex is one of the latest technologies which seem to offer tremendous potential for education. It makes the home television set to function like a computer terminal and retrieve information and graphics from a remote data base. The greatest social significance of the videotex is the possibility it offers of much wider access to information and conversely the much greater ease with which new concepts and

ideas can be transmitted. The videotex at the moment is expensive. In India as also in other developing countries, it will take a pretty long time before it could be used in open universities. But when it is available for use, it will be a great asset in a vast country like india to disseminate general information about courses and programmes available in the open university system.

The Advantages of New Technology:

Recent developments in technology are bringing advantages to distance teaching and removing some of the disadvantages previously associated with the use of audio-visual material. New technology promises:

a) a wider range of teaching functions and a higher quality of learning.

b) lower costs

c) greater student control

d) more interaction and feedback for students.

One of the major benefits of computers and cassettes is that they enable students to develop skills, through structured activities, practice, and feedback. Media such as television and computers provide source material which students can work on, to expand their understanding and to which they can apply their knowledge. For some media, costs are dropping to a level where their use makes economic sense even in institutions with very limited budgets. A well designed audio cassette, integrated with the text, is low cost, highly effective teaching medium for individualized study, with much greater flexibility than many other media. In an increasing number of circumstances, video cassettes have considerable educational cost and distributional advantages over broadcast television.

Video cassettes parallel many of the control features of books, while at the same time expanding the range of skills that can be taught at a distance. Indeed, computer controlled video discs will provide students with far grater control than can be achieved even through books. With computer assisted learning or cassettes students can try out answers and get feedback on their performance. Similarly, telephone tutoring permits feedback at a distance from tutors able to deal with a range of students- learning problems or personal difficulties.

Far from eliminating human contact, technologies such as the telephone make possible personal contact for remote or isolated distant students.

Limitations of New Technology :

There are still major obstacles and limitations to the introduction of new technology for distance education. Distance teaching requires technology which is cheap, reliable, easy to use, multi functional and to be found in nearly every home. Distance teaching is an area of education where educational thinking and requirements are still well in advance of the technology. In many cases, the technology has not been developed to a stage, where it is yet useful or viable for distance education. Apart

from books, broadcast television and radio, audio cassettes and the telephone, technology at the moment cannot actually meet homebased needs. Video cassettes, cable T.V. and micro-computers are beginning to become widely available, but they are not likely to be found in most homes in near future.

The variability of access poses problems of social equity for distance teaching institutions, many of which have been established to cater for those who in the past have been educationally and economically disadvantaged. Another major limitation is the need to produce high quality teaching material for use of new technology. Some technologies are extremely demanding in terms of the skill and time required to design effective teaching material. Broadcast television and computer assisted learning in particular are at the extremes of cost and difficulty.

The greatest problem though is deciding which media to use and the different ways in which each medium should be used, so that they complement one another. Lastly the introduction of new technology in distance education requires major changes in professional roles. While it is not necessary for subject experts to become professional producers, they should be aware of the potential and limitations of various media and how they might be used in their teaching, Thus there are complex issues, affecting people's careers and work life, which need handling with extreme sensitivity.

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21st CENTURY : CHANGING PERSPECTIVES OF EDUCATIOAL PROCESS IN INDIA

Romesh Verma

In looking forward to the year 2000 A.D. we are bound to study the educational development against a world background. The problems of education (as of very other human activity) cannot be studied within the parochial confines of our present place and time. Yet in education, more than in most things, we tend to be prisoners of present circumstances and recent history. We have learned the language of our home and environment; we have cherished its priorities and taboos; we have exercised ourselves continuously in its ways of perceiving and administering human affairs; and (in order to be where we are not) we have stamped ourselves with other's approval by passing examinations and being admitted to the prospect of responsible employment.

The changing perspectives in the educational process in the 21st century has been put forward by our eminent furturologists, who says that the future of Indian education can be studied. As Srinivas (1986) says :

> A depressing scenario for the future concerns the conflict between dominant, land owning castes and scheduled castes. This is likely to become increasingly violent and bitter, and will be a primary arena for the struggle for equality in India.[1]

India has a long way to go before its myriad castes, communities and ethnic groups are transformed into an integrated nation. But an integrated India will not result in cultural homogenization for it must be repeated that India is and remains a multilingual, multireligious, multiethnic and multicultural society, for more like western Europe than any of its constituent states.

Commenting on the political scenario Ashish Nandi is of the view that,

> No, India will not be developed in 2001, not even by 3001. The world just does not have that kind of resources. To keep one billion Indians at the American standard of living -- which is no longer the highest in the world - we shall have to kill off every other person in the world. Even then it is doubtful if we can live the way the advanced societies do.[2]

Similarly, Prof. Rahman describes the future scenario of Indian development as :

> India would be both a developed country as well as underdeveloped. It would be scientifically and technologically advanced, and a small affluent

section of the society would be also culturally advanced. It would be underdeveloped as the vast majority of population would be without education and below poverty line and culturally backward. The efficiency of functioning of systems would be seriously effected because of the latter situation.[3]

Futurological views of Prof. Bhambhri highlights the future scenario of Indian democracy as :

A very significant threat to Indian democracy is posed by the various religious groups who don't accept secular democracy and its framework. India is involved in a basic struggle to strengthen and safeguard secularism because a section of Indians can be manipulated on the basis of their religious beliefs.[4]

Futurological notes by Dr. Melcolm Adiseshish describe that :

- Population: the mortality rate is likely to fall from 15 to 9.6 per thousand of population in India.The population in 2001 will be around 945 millions.
- Production Structure : India will be still an agricultural society.
- Poverty structure/Profile : By 2001 our poverty group will just be reaching the minimum consumption of Rs. 500/- per person per annum.
- Education : India will be in the need of 5 lakh hectares of land for additional schools and universities, and it will not be available. There will be 200 million children in the age group 6 to 16 years and 370 million adults needing education in 2001. There will be need of 45 lakhs teachers, and the cost of schooling shall be Rs. 3500 crores (at 1971 prices and salaries) which in fact means much more.
- The Education System : will be a reformed formal education sub-system and a non-formal education sub-system.
- The methodology of Education : The methodology of teaching will shift from talk and chalk to multimedia approach rather, the changing world would require a new kind of teacher and a new kind of education, moving away from the current art of imparting and acquiring bits and pieces of information and knowledge.....The professional will, no longer be, or imagine himself to be, the sole purveyor of education.[5]
- Open Learning : schools without walls, polyvalent classes, integrated schools, universities of the air, will be juxtaposed with firms, farms, factories and business houses as education extension agents with their survey, documentation and research facilities. There will be a reform of teaching technologies and learning methods. There will also be more individualization of learning and teaching.

Commenting on the future of education in India in 21st century Dr. S.C.Seth (1985) describes :

i) Tomorrow's education will be a large human system intending to find out the technique how do we should communicate and mix knowledge for the development of our country.

ii) Educational costs vis-a-vis increasing poverty conditions : (Some can pay for education, but there are also millions who have no consumer personality)

iii) Educational package for unhomogeneous development : Agrarian, industrial and post-industrial.

iv) What will be the educational response to a synthesis of value plurality and social fragmentation and emerging individualism, visible in the Indian society?

v) What and how can educational overhaul for providing a meangingful response to technological plurality be achieved (yesterday's technology vis-a-vis tomorrow's technology).[6]

Highlighting the challenges of future Soedjatmoko (1987) points out:

> that the capacity to learn will be the principal determinant of the viability, autonomy and integrity of the developing countries like India, as they approach the twenty first century, for the future holds for them new and unfamiliar challenges in total discontinuity with their past experiences, as a result of a confluence of major changes --demographic, economic, technological, educational and cultural. The educational systems that these societies build will have to prepare for an entirely different world of industrial and social development in which new lessons apply. The task is not only to catch up with the new technologies, but also to develop capabilities in the frontier areas of knowledge. The challenge is rather to develop both in individuals and in communities a capacity for continuous learning, for creating responses, and for critical assessments. The forward edge of educational innovation lies in collective social learning -- to assimilate new information as a collectivity; to develop ability to make collective moral and ethical judgements that ring true for the whole community and devise and build confidence in new ways to function as collectivities within the changing parameters of our times.[7]

The above futurological views of the thinkers make us say that today there is the ascendancy of machines and institutions; tomorrow we shall be called upon to build men and women capable of using machines and institutions as their servants and vehicles. Today, we are using man as a means to an end; tomorrow we shall be required to look upon man as an end in himself. It is in this context that a question has been raised as to what will be the basic skills with which the children

and youth of today should be equipped and what type of teaching technology be adopted in order to fulfill the tasks of tomorrow's world. Thus, the resulting discontinuity with the past experience leading to confluence of major changes. These changes reflect the combination of various factors; the impact of population increase, the impact of economic developments, the impact of technology, and the very profound impact of cultural and values changes that have already started are bound to exert an even greater influence in the future. The cultural changes are in someway responses to rapid development, though they also contain powerful elements of reassertion of basic indigenous values and world views. Such values have been considered irrelevant to the development process, which has itself led to major shifts in the configurations of value in the Indian society. The synergistic impact of these changes forces each discipline to review its current state and to determine the extent to which pursuing conventional lines of evolution is or is not still relevant in the light of the very rapidly changing societal context.

There is, of course, a common view, primarily outside the field of education that the major challenge to learning is mainly demographic in origin. For instance, the human race doubled in the first two thirds of this century. (In fact there will be as many Chinese in the year 2001 as there were human beings in the year 1900). Despite our best efforts some 258,000,000 children out of the world's 3,5000,000,000 people are not in school of any kind. Of the rest, the great majority are certainly under-educated. In the 1961 census India had 438,000,000 inhabitants, but by 1969 the number had already reached 520,000,000, that population will more than double by the year 2001. The matter of providing formal schooling to the huge numbers of children who will reach school age in the years ahead would be another serious challenge. For instance, India's elementary education system has expanded to be one of the largest in the country and the enrolment at the primary stage has increased about five fold from 19.2 million in 1950-51 to 101.6 million in 1991-92. The number of children are out of school i.e. 24 millions (in 1991-92) continue to be on the higher side despite the increase in educational facilities. The gender disparities are also conspicuous with regard to enrolment and retention and though the number of girls who enrolled at the primary level increased from 5.4 million in 1950-51 to 42.4 million in 1991-92, girls still account for only 45.7% of the total enrolment. The enrolment among the scheduled castes and scheduled tribes has also shown an increase but the total enrolment in 1991-92 was reported to be 9.4 million. The objective to attain 100% literacy could not be attained in India though the number of teachers have gone up five fold and the number of schools threefold and the outlay on education in the eight five year plan is 128 times that of the first five year plan. The increase in pressure of students on the educational institutions and the enhancement of the educational institutions in India is posing another challenge to our economy. As a result the country is facing financial crunch. For instance, with the increase in the number of colleges and students, the expenditure went up from Rs.88 crores in 1990 to Rs.109 crores in 1992-93. There was a corresponding

increase in the number of teachers from 7400 in 1989-90 to 7,900 crores in 1992-93. The cost of infrastructure also went up eighteen folds as compared to the 6th five year plan while entering 21st century. This ultimately will be putting additional pressure on the Government funds. Besides, it has been reported that Govt. has no funds to invest, while the various public sectors enterprises, because of low profitability, are unable to raise funds from the market. At the same time, it is admitted that if the situation continues, infrastructural constraints would be the gravest limiting factor for GDP growth, threatening the very process of reform. Similarly, it has been observed that despite heavy investment by the Government of India on formal education the outcome i.e. the rate of literacy is the lowest. It is strange that the Govt. schools having better infrastructure, trained staff, and other necessary facilities are lagging far behind the private educational institutions. This makes us think of an alternative of privatisation of elementary education for the middle and upper strata of our society. The drop out rate, wastage, and stagnation in education will increase further in the years ahead if the tendency of the deteriorating educational institutions is not checked.

The cost analysis of elementary, secondary, and tertiary education in India points out that the investment by the parents in educating their wards on one side and the Government's investment has increased grately. Since, the country is at the crossroads of population explosion, limited resources, and constrained economy with heavy overhead expanditures, it is imperative to make adequate preparation to enter into 21 century with a suitable cost effective system of education.

A policy decision at the national level to workout alternative modes of providing education to our increasing number through distance mode was taken up. As a result in 1962 the first correspondence school in Delhi was started. Later, the alternative mode, with the dual approach by taking the assistance of the conventional system of education to develop correspondence education, gained momentum. As a result 41 correspondence institutes/directorates of distance education came into being and in between six open universities came into existence. The shift from correspondence mode to a mode of distance learning came into being. There is further hope that by 2001 about 30 more open universities would be established. These open universities will have to develop co-ordination with each other, on the regional basis and the regional open universities would be having close co-ordination with National open universities. There is every possibility to develop open universities to render specialised type of educational courses. The professional scientific courses would come up and among those open universities some would render their services in the production of software for the regional open universities. The nature of the software most likely would pertain to the universalisation of elementary, secondary and tertiary education in the field of general education courses. Special software at advanced level would also be produced by these cnetralisisng open universities to cater tothe need of technologically based courses in the 21st century.

On the other hand, the conventional system of education during 21st century would also develop. The nature of development of the conventional universities would be confined as per the practical application of the knowledge, and the subjects in the society of the years. Besides, the existing pattern of conventional courses are more likely to change within a decade. For instance, in conventional university system, the conventional teaching departments would agressivly concentrate on the latest application of knowledge. Without the application of knowledge as per the need of the structure of our society, the conventional university teaching may not survive because of financial constraints. Besides, admission in the conventional teaching departments of the universities would become limited. The deprived communities would get additional benefits of seeking admission and financial assistance. Another development in the 21 century is the reduction of proportional amount of subsidy on higher education, especially in the conventional system, because conventional education would become more expensive. As a result the cost of education in the conventional system would increase 10 to 20 times whereas, the women and reserved communities may get subsidy. Most likely the educationist in India would start rethinking the alternative modes of education to save resources of the country. The visible answer would be the distance education or open learning because various studies of cost effectiveness of the system show that the cost of educating a student through distance education, is less than 1/3 to 1/6 of the cost of education in the conventional system. This difference in the years ahead would further increase. So, the only answer would be the growth and development of subsystem of education i.e. open learning which would be the only answer for mass education. The conventional sub -system of learning would be confined to conventional university for specialised limited learning.

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DISTANCE EDUCATION: SOME IMPROVEMENTS SUGGESTED

J.S.Bains

Some drawbacks and shortcomings from which the Distance Education System suffers have been discussed and highlighted, from time to time, at various levels. It is usually in the newspapers that the affected persons give vent to the problems and hardships experienced by them on the part of the organizers of this new technique of teaching. A recent news item "MBA aspirants feel let down by IGNOU Functioning" published in *The Tribune* dated October 6, 1997 must have attracted the attention of many people and provided an opportunity for introspection to those deeply involved in carrying out an ambitious project of educating a vast number of students and working people in the country. With the extensive network in the country for conducting various distance learning programmes, Indira Gandhi National Open University (IGNOU) does not have any problem in getting the desired numbers. Every year a large number of students enroll themselves for these programmes all over the country. According to the news story mentioned above, most of the MBA students feel that the programme designed for them has not been able to deliver the goods. This lead to a loss of interest amongst students, practicing managers, and other business executives. Even a casual look at their observations is enough to show that most of the problems narrated by these professionals are quite similar to those faced by the students pursuing other programmes conducted by IGNOU. However, that should not dishearten the organizers or make them pessimistic, particularly when quite a lot has already been done to overcome the problems. When a new organization is started or a new system is introduced, one cannot expect smooth sailing and one must be prepared to bear the teething troubles and resolve the problems in order to come up to the expectations of the majority of the students. One cannot lose sight of the fact that Distance Education in India is still a new system and it was taken up seriously only during the last two decades or so. It is heartening to note that this system is growing well in India and it has been welcomed by a large number of students, particularly the working people.

The idea "learn while your earn" which IGNOU has been promoting over the years has been appreciated by the business executives and other professionals. The idea is apparently very good and attracts a fairly good number of people interested in improving their qualifications, while in service. But in order to establish the credibility of the system and to maintain in it the interest of the students, it is imperative that the organizers should strive hard to remove most of the shortcomings in its functioning. In order to achieve better results, one must continue to make improvements and in that direction here are a few suggestions.

Timely Return of Assignments :

Students often complain that they get delayed response from their respective study centres so far as evaluation of their assignments is concerned. The response time, of course, varies from centre to centre, with some centres responding very fast, whereas some others handle the assignments carelessly and convey their evaluation to the students rather late. It is no use knowing, near the exam or after the exams, how much one secured in the assignments. It must be recognized by the institutions concerned that on account of the delay on their part in returning the evaluated assignments, the students are likely to lose interest in them. The assignments must be checked carefully and returned to the students well in time. It will provide an important link and a continuing relationship between the learner and the teacher. The evaluation of assignments should not be limited to assigning marks only but also involve some useful suggestions, wherever necessary. In order to motivate the students to prepare their assignments in the best possible manner, some weightage should be given to them. Therefore, a certain ratio can be decided between the weightage of assignments and that of the end-of-term examination. It should be compulsory for the students to submit assignments and it should be equally obligatory for the teachers to evaluate and return them in the shortest possible time.

Effectiveness of Personal Contact Programme (PCP):

Face-to-face sessions have a special significance in the Distance Education. They are meant to remove the difficulties of the students and to provide personal consultation/counselling to them. Another purpose of the PCP is to remove the feeling of learners' isolation. But it is noticed that personal contact programmes fail to deliver the desired results. There is nothing wrong in these programmes but the students take them quite casually for the simple reason that these are not mandatory. In order to make the PCPs more useful to the learners, more time should be alloted for face-to-face interaction. During these programmes, the tutors should not be content with delivering formal lectures only but should encourage the students for personal discussion of all matters pertaining to their studies. Serious and committed students expect a sympathetic consideration of their difficulties and the tutors should strive to live up to their expectations. In order to achieve better results from these programmes, it is desirable that the students should list out their doubts in advance and come prepared to put them to the teachers during the face-to-face sessions. In the matter of professional courses like journalism and MBA, there should be discussion on case analysis which is absolutely necessary if students are to develop a correct approach to solving problems relating to their fields of activity.

Quality of Course Materials:

Contents of some courses do not correspond to the professional needs of the distant learners and consequently the acceptance level of the courses is limited in

their fields of work. In order to make them suitable to the specific needs of the working people, the academics should be open to change and ready for innovations in the curriculum. While deciding the course contents, one cannot remain indifferent to the needs of society and to the new developments taking place in the learners' fields of specializations. In order to develop right type of courses, the following points are useful:

* Selection of experienced and competent teachers for the preparation of course materials.
* Checking and revision of course materials from time to time to ensure that they are responsive to the needs of the learners.
* Content of course material must be written in a simple language, that is, it has to be within the comprehension level of the learners.
* There should be no printing errors or factual mistakes in the content of these courses.

Use of Audio-visual Aids:

In order to supplement the instruction imparted through the printed course material, distance education institutions will have to make use of the radio, television, audio and video cassettes etc. It needs to be pointed out that DE study centres should be well-equipped with audio and video cassettes which the students may be able to get from them as per their requirements. It goes without saying that this new communication technology will have to be adopted even by the conventional universities in order to reinforce their class-room teaching methodology. The availability of new communication technology is certainly a major break through in the spread of distance education, but developing countries like India have their limitations in the matter of funds. However, a beginning in the use of this communication technology has been made in our country and its advantages have been felt and recognized both by the teachers and the learners.

These are some of the suggestions for effecting improvements in the distance education which call for an urgent attention of the organizers of this new system. Distance Education System is the need of the hour and in order to establish its reputation all concerned will have to work hard and cooperate with one another. In order to achieve excellent results; we shall have to remove the existing shortcomings and also take care of those that might creep into the system in the years to come.

HUMAN RESOURCE DEVELOPMENT AND DISTANCE EDUCATION

Shamshad Hussain

Human resource development is the key to the development of a highly functional and developing society. Human being is endowed with such potentials which can make this world worth living if they are unfolded and given a proper shape. In the past the thrust has been on the development of material resource and material gains. Now with the development of behavioural sciences the social scientists, educationists, administrators and the policy makers realized and acknowledged the necessity for the development and unfoldment of human potentials. As a result all efforts were made to enhance the cognitive ability of the individual, so that he can develop his personality and contribute to the society, with this realization the HRD department was established which aims at promoting all round development of the Individual by way of a healthy education system. If a healthy Educational system is in operation it not only helps in intellectual development but also aims at providing an all round adjustment relating to individual's social, emotional, physical and over all adjustment. The author studied the effect of Higher Education on the over all adjustment of the individual.

Effective education thus lies at the root of human resource development, with this aim a number of colleges and schools were opened, though the quality of education could not be properly maintained because of multiple constraints. With the fast increasing rate of population and advancement in technologies,the conventional system could not meet the challenges of the fast developing society. The University 'within the wall' failed to cater to the needs of thousands of people who could not take benefit of higher education. Specially disadvantaged groups in service men, women and persons living in a remote area could not continue their study through conventional educational system because of various reasons. Inspite of their high level of motivation and commitment they found it difficult to get education at higher stage. These circumstances led to the development of distance mode of learning or open learning system which brings education at the door-step and provides opportunities for growth and development of cognitive ability and obtaining degrees after passing the examinations. This system of learning is now recognized world wide. The system which started imparting education to those sitting at distance only through correspondence courses by sending printed materials especially tailored for distant learners, continued to achieve high scientific methodology by utilizing advanced educational technologies like audio-visual cassettes, radio, T.V. programmes, teleconferencing, E.mailing etc. At present the satellite system and digital

computers have made this system quite near to a class room situation created at the centre where distant learners are sitting.

In short, that percentage of the population which cannot be benefitted by the conventional educational system can be benefitted by the open learning system. The open learning system of education is comparativetly new and helps people in achieving higher education without any formality of attending regular classes like that of conventional education institution. The formal conventional type of education has created a number of barriers which debar those people from taking education who can not afford to come to the colleges and the Universities for higher education because of various reasons and constraints. In such circumstances the open learning system by imparting distance learning came to their rescue. Distance Education system has the potential of making education relevant to the needs of the people because of wider reach, openness, flexibility and social impact and is capable of coping with future demands and takes education to the door-step. The increasing popularity of open universities functioning abroad and in India is supportive of the fact to what extent this system has helped people in acquiring knowledge and skills towards achieving purposeful goals of life. The distance education is a now concept, specially in developing country like India and the general mass is not fully acquainted with the concept of distance education and therefore they cannot take full advantage of this system. In simple language the distance learning system can be defined in terms of an educational system which provides education to the people even when they are sitting at home. This system imparts education through various modes and technologies such as self instructional printed materials (dispatched to the students sitting at distance), obtaining response -- sheets from the students and getting it evaluated by the teachers, and again sending it back to the students after assigning grades or remarks; arranging contact classes from time to time at different study centres, establishing in the near by localities. The study centre is equipped with audio-visual aids which are used for delivery of materials which have been prepared and designed in a highly professional way. The students sitting at a study centre may attend to the lectures of experts in specified areas. The students are also assisted and counselled by the counsellors at the study centre. The distance learning system also includes holding of seminars, symposia, workshops, contact classes and extended-contact classes at different intervals to enhance interaction with the students.

A good study centre has a well-equipped library which can be used by the learners. The latest mode of communication used for distant learners are tele-conferencing and E-mailing. In the area of open-learning, Indira Gandhi National Open University has established its credibility. It was established in 1985 and at present it is catering to the needs of about 3 lakhs and 10 thousand distant learners. It also functions as an apex body for promotion, co-ordination, and determination of the standard of distance education. It has promoted education at a faster rate in India and abroad. Indira Gandhi National Open University has introduced about 63 courses. It has national and international networking which aims at globalization

of Learning. The promotion of Open Networking in imparting distance learning has strengthened the concept of 'global village' at the international level where different countries are working together and are utilizing the technologies by mutual understanding. The state open universities are also functioning in different states to meet the regional requirements in a better way, keeping in view the socio-cultural background and the needs of the learners. At present there are about six state open universities providing distance learning: B.R.Ambedkar Open University, Hyderabad, Kota Open University, Kota, Yashwant Rao Chauhan Open University Nashik, Dr. Ambedkar Open University, Ahmedabad, Nalanda Open University, Patna (Bihar) and M.P.Bhoj University, Bhopal.

At this point of discussion some constructive suggestions can be given to the authorities of IGNOU and particularly the Distance Education Council which is a funding agency : IGNOU is an apex body which should be concerned with the growth of distance education in Bihar also. During the course of various discussions with these two bodies it is gathered that Open University can receive financial assistance from DEC only when it fulfills certain conditions and for which the state government has to come forward. I also agree with the proposals but my humble submission is that while fixing the criteria these bodies should consider that some universities are in a take-off stage and may not fulfill all the conditions in the beginning and hence a soft stand is to be taken by them if they are really interested in the promotion of newly developed open universities. I also feel that IGNOU should also spare a few vocational course to be launched by some Open Universities exclusively and for which there should be sharing of materials. Further, the state government is supposed to finance Open university at least at par with conventional universities as it needs a strong infrastructure.

The collaboration between Regional Centres of IGNOU and State Open Universities in various matters will prove to be highly effective and fruitful. Today the networking and mutual co- operations are needed for the advancement of knowledge, especially in the field of distance education.

However, while talking about distance learning and conventional learning system, it is to be kept in mind that these two systems are not rivals to each other. The two systems can move together in serving the noble cause of providing education to all. However, distance education can achieve much more so far as widening access to education is concerned. This system has the advantage of flexibility in designing and developing course materials relevant to the aspirations of learners. It makes different media available to carry the torch of education to even remote rural and tribal areas which have all along remained neglected. Thus, this innovative system of education will fulfill the aim towards achieving social justice. However, this system needs integrated efforts, good team work, dedication, open and broad thinking. Much more is to be done for achieving the goal of distance education which is not merely correspondence education but also utilises higher technologies.

The transformation of the non-formal education can be broadly categorized into three phases depending upon the use of communication technologies.

The facilities in postal communication gave rise to the establishment of correspondence courses institutions which is the first major addition to non-formal education in the University education. This system relied exclusively on print medium and used mainly postal communication and occasional personal face to face contact programmes.

The large scale use of radio and television brought in the second phase in non-formal education system leading to distance education. The audio-visual and print media made instructional materials more effective in the process of self learning which is to be mastered by the learners in open and distance education. In its third phase of development we are facing a new change brought about by the communication technologies through the use of communication satellites and versatile new generation computers. The modern computers and technologies are making it possible to develop digital multimedia in which text, voice, picture, stimulations etc. can be integrated and learning materials can be offered through computers as an interactive learning package. The new communication technologies and networking are gradually moving towards the development of virtual class rooms, virtual conferencing, virtual laboratories and virtual field works etc. However, such innovative ideas for being fully implemented will take some time. Education system in the form of open learning has moved at a faster rate with the development of sophisticated technologies. it is further stressed that the importance of distance learning system is rapidly increasing in the face of growing population, in which more and more individuals are to be educated through distance learning either imparted by Open Universities or upgraded correspondence course institutions under conventional universities.

Such views are supportive of the fact that distance learning is the need of the hour and open universities need support from the Government and non-Government organisations for providing its worth and achieving the goals of higher education. However, it needs quality assurance and effective use of multimedia resources for quality education. All such steps will help in breaking away from the age old beaten track of the conventional system and follow new horizons in distance education. It is to be stressed that the future demands for distance education are going to be colossal and we shall have to gear up our system to cope with the demands that will require careful planning, revamping of the various operational processes involved in teaching students at a distance.

Distance education system demands our dedication and commitment to the system which aims at democratization of educational opportunities for all sections of society without any discrimination. What I personally feel is that we have to educate our people regarding the concept and utilization of distance learning system which is the latest attraction and innovation in the field of education, especially in developing countries like India. Let us take full advantage of this mode of learning

and teaching and fulfill our expectations. Let us plan our career sitting at home and make our future bright. Let us have full faith in distance mode of learning as it has its own significance and attraction at global, national, and state levels. The system has to develop which can cater to the needs of the people of Bihar, who have not been much benefitted by Distance mode of education as yet. The media persons and the educational technologists have to come forward in this direction, beside other educational organisations. The IGNOU, DEC, and UGC have also to come forward whole heartedly for the development of distance education being imparted by State Open Universities which are catering to the needs of people, considering their specific needs and language and the socio-economic back ground. Thus, no doubt, the distance learning which is the latest attraction in the field of human resource development has revolutionized the idea of acquiring knowledge, skill, and education. However, one thing is to be pointed out that human resource development not only aims at imparting knowledge but also at the development of all-round personality for which there is little provision in distance mode of learning. In the conventional system either in a school, College or University, there is exposure to various co-curricular and extra curricular activities which are lacking in an open learning system. Hence special care is to be taken for various developments within the individuals which make them highly functional and valuable members of the society.

TEACHING OF MACRO ECONOMICS TO DISTANT LEARNERS

Poonam Gupta

Distance learning, as we all know, is learning supported by those teaching methods in which because of physical separateness of learners and teachers, the eductional approach is more a programme of self-study or independent learning. Here we make use of a range of strategies and communication technologies like print, audio, video and face-to-face study which adds significantly to the learning effectiveness. Much of the learning which takes place is the student's responsibility and depends on the degree of his commitment to learn.

In India, distance education is largely confined to traditional courses like B.A., B.Com., and M.A. Most of the correspondence institutes cater to the syllabi and courses offered by the affiliating universities. A general impression which is carried by most people is that distant learners are not at par with those who study in the formal manner. The monetoring of distant learning programmes is also not always very successful which creates a gap between what is taught and what the student actually comprehends. In order to provide distant learner with maximum information and enable him to grasp it to the best of his ability, this paper is a preliminary attempt to consider the teaching of macro-economic theory and more specifically the theory of investment through distance education.

In a conventional class, the teacher is confronted with students according to whose response the lecture can be modified, regulated, and extended. But in a distance education set-up the student is a faceless entity : a hetrogenous group of those who want an easy pass, those who want to cover as much eductionally relevant material as possible, those who want to think and apply this knowledge, and those who want to explore and research.[1] So the aim is not only to arouse the interest of students and sustain it or to cater to the average student in general but enough for the bright one to be satisfied. So we must ensure that all our students, whatever their motivation or ability, will get something from the course.

The subject matter of macro-economics is vast. The time allotted for an under-graduate or even a post-graduage course in economics is limited. So there is need to be selective with respect to time allotted and significance of each topic. Macro-economics or theory of income, output, and employment which is offered in the undergraduate course normally deals with Keynesian Economics. It has been observed that most students do not identify one with the other even after passing out. Teaching even in formal classes, is mainly confined to the main postulates, model building, and major policy implications. The need to study its relevance and application to

day-to-day economic activity and policy changes is not dealt with. The students, with their chief motive being getting through the examinations and obtaining a degree, normally have little interest to learn more.

To make economic theory courses meaningful, they must

(a) attempt to explain, not just theories, but provide the students with an organised method of thinking out particular problems.

(b) Identify and bear indirectly with problems of life as the confrontation with economic reality of any given theory, enables us to determine its relevance.

For achieving this objective, we approach the teaching of economic theory and in particular the Investment theory through, various media, the chief among them being print.

Print Materials

In a country of limited resourses like ours, one has to rely mainly on the print media. Since printed material is the main-stay of our distance education system, the syllabus is divided into lesson units and topics to be covered. In economics, each lesson unit is a link in a chain and self- sufficient with adequate reading material with scope for the student to supplement his knowledge with a text-book and other recommended books. The lesson unit on theory of investment deals with meaning of investment in economics, types of investment, classical and Keynesian theories of investment, role of investment in economics and its importance. Each of these should be dealt with in great detail with examples, tables, and diagrams. At the undergraduate level, the emphasis is mainly on explanation. Each unit should be followed by a short commentary to establish the link with the preceeding units and by asking provoking questions, arouse the students curiosity leading on to the next unit. The aim is to develop the critical faculty amongst the students. The units must be made interactive by placing thought provoking in text questions. For example, after defining various types of investment one can ask the student to stop reading, think about what he or she has read, and then write an answer to a self assessment question like, 'What is the difference between financial investment, net investment and replacement investment.

Another form of interaction is by asking multiple-choice questions. For example: Tick the right answer.

Net investment is represented by the

(a) replacement of a machine or

(b) addition of a new machine or

(c) purchase of bonds or

(d) purchase of a new car.

Solved problems illustrate and amplify the material and aid in refining the theory. Graphical and numerical examples help in students' understanding the concepts as well as their functions. Use of flow charts simplifies the information contained in the lesson.

For example: Calculate MEC if a machine costs Rs.10,000 and during life time of 2 years gives prospective yield of Rs.14,000.

Solution : Apply the formula:

Supply Price = Discounted Prospectrive Yield

$$10{,}000 = \frac{Q}{(1+r)^2} = \frac{14{,}400}{(1+r)^2}$$

$$\therefore (1+r)^2 = \frac{14{,}400}{10{,}000}$$

$$i + r = \left(\frac{14{,}400}{10{,}000}\right)^{1/2} = \left(\frac{144}{100}\right)^{1/2} = \frac{12}{10} = 20\%$$

In order to verify whether MEC is correct.

Put the value of r in the equation

$$10{,}000 = \frac{14{,}400}{(1+20\%)^2} = \frac{14{,}400}{(1+1/5)^2} = 10{,}000$$

Hence mec = 20%

I suggest that we provide an extensive battery of assignments from among which students are encouraged to select those that they find particularly interesting or that coincide with their specific study objective. For this at the end of the lesson exercises with answers, self-check exercises to gauge one's own progress, and understanding may be asked. These encourage and motivate the learner with an attempt to lead to independent learning.

For example, at the end of the lesson on Investment, it may be asked:

If you read this unit carefully you will be able to :

(a) Define investment in economics.
(b) Different theories of investment
(c) Factors affecting investment.
(d) Calculation of marginal efficiency of capital.

Further, keeping the examinations in view, model questions similar to the ones asked in examinations may be asked.

For example we can ask the students questions like:

(i) What is the difference between MEC and MEI schedules?
(ii) Examine the role of business expectations in determining investment.
(iii) Explain the relationship between the rate of interest and the marginal efficiency of capital.
(iv) Give five reasons why a firm might increase its investment.

There can be many more questions of this kind. In addition, for the bright students some questions may be framed requiring thinking and extra references. For this an exhaustive list of reference books and articles must be provided.

Audio Talks

Audio aids are fairly popular and commonly available to both the formal and non-formal education streams. As all our students may not have access to this facility, the audio talk must be complete in itself and not a complement to the print material. In economics, a student-teacher format or a question-answer format is an excellent aid. The interaction helps to clear many doubts and answers a number of questions which a student may be wanting to ask. Let us consider the possibility of an audio programme for the theory of investment.

An explanation of the various theories - classical, neo- classical and Keynesian theories can be followed by a student asking various questions and the teacher giving answers. For example,

Student : What is the difference between MEC and MEI schedules?

Teacher : MEC is constructed holding constant the supply cost of new capital and the expected rate of return on future cash flows. On the other hand, MEI holds expected rate of return constant but assumes the supply cost of new capital as positively related to the production of new capital. Since the expected rate of return from investment proposal shifts as the supply cost of new capital assets

rises, MEI has a steeper slope and is to the left of the MEC schedule.

Student: Does the rate of interest determine the volume of investment?

Teacher: Rate of interest determines the volume of investment provided that businessmen desire to maximise profit while there are no changes in factors affecting the MEC for investment proposal and funds are available in unlimited supply at the given rate of interest for the desired volume of investment.

The audio talk would become more meaningful by talking about facts and figures; current trends in investment in India vis-a- vis other countries; effects of current economic policies on investment in the economy and possible implications in the future. Injecting a few policy changes which affect every one helps in understanding the importance of the topic a great deal. The annual budget (which we all await and discuss) can be a good example.

Student: How does a change in the corporate income-tax affect the rate of return from investment proposals?

Teacher: MEC is inversely related to income tax given other canditions. Therefore government can increase the rate of return by lowering the corporate income-tax.

Student: What happens to the MEC when the government allows firms to depreciate machinery at a faster rate?

Teacher: MEC increases because faster depreciation allows firms to recover funds sooner.

Student: How is the aggregate MEC schedule affected if the population increases?

Teacher Increase in population leads to increase in overall demand for goods which requires a higher capital stock. This shifts the MEC schedule to the right.

Such questions enable the student to understand the impact of policy changes on investment. This kind of exposure contributes to the students' appreciation of economics.

In order to further encourage the student to develop the taste for the subject new theories can also be mentioned.

Personal Contact Programmes

The role of the PCPs is to establish a direct link and build rapport with fellow students and teachers. The objective of these face-to-face sessions is to reinforce the learning material, provide counselling, sort out the individual difficulties, and to offrer remedial help. The tendency of the personal contact programme sessions turning into formal lectures should not be encouraged. But it has been observed that most students do not read the study material prior to the personal contact sessions and expect a chalk-and-talk expository lesson. Although it is difficult to

break away from this tendency, the face-to-face sessions must synthesize the thrust of the multi-media mix so that the aims of distance education are realised. A practical way of going about these sessions is to start from the topic based lecture in brief with stress on tables, a step-wise drawing of diagrams, illustrations, graphs and mathematical derivations and controversies. Conflicting opinions and new theories also need to be discussed. Any new relevant articles, data, areas of research must also be mentioned for the inquistive few.

Personal contact programmes help a great deal because certain individual problems can only be attended to by a teacher who is physically present. Home assignments enable the teachers to make note of the areas of common misunderstanding and identify areas where tutorial support is essential. In this manner, guidance and help provided is more likely to be as appropriate as possible.

The use of audio media can form an important part of these PCPs with fixed time period for using them. Discussions, interspersed with listening, would lead to greater interaction instead of passive listening.

The PCPs must discuss in a general way the general approach to answering examination type question.

This approach to the various media and teaching of investment function can be a broad guideline to teaching of economics in general. Such an approach is aimed at motivating the student, facilitating learning, greater assimilation as well as an insight into the study of economics.

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DISTANCE EDUCATION IN PANJAB -- AN OVERVIEW

Hardeep Singh & Ravinder Kaur

Distance education is characterized by a non-conformist and non-traditional approach of teaching which seeks to impart knowledge through an informal atmosphere to a relatively large number of people spread over a large area.

The principal objective of distance teaching institutions is to widen accessibility to higher education. It aims at bringing education within the reach of those who have no access to it, thereby enabling them to improve their educational qualifications.

The most important features of distance education are :

i) It is an off-campus programme.

ii) It is mainly intended for adult and mature students.

iii) The students are dispersed and not required to assemble at one place for instructions.

iv) The students are of varying background and age groups.

Distance education is a wider system in terms of both its connotation and denotation. Its connotation is wide because it works within a much large learning situation, a situation in which many factors remain indeterminate and inchoate. It has a wider denotation also in the sense that it covers considerable distances in order to communicate.

Distance education operates mainly on the following concepts :

i) learner-centrednes/learner-face

ii) Indirect education

iii) Education in real life setting.

i) Learning - centredness/Learner - face

Distance education concentrates on learner's needs and convenience. It does not advocate a strictly definite limit of time, for any course of study the learners can allocate the time to the studies according to their own convenience. They can adjust this system according to their circumstances. It does not distinguish between the young and the old learner but provides both with a possibility that permits each kind of learner to programme his specific study or learning.

ii) Indirect Education :

Distance education is indirect in the sense that it provides for as many inputs to learning as can be maintained and preserved. These inputs to learning are placed at the disposal of the learner, and therefore ample store is set by the learner within whom the crucial ability to learn and to make use of these inputs lies.

iii) Education in Real- life setting :

Distance education provides the opportunities to the learner to adjust the learning with his own life setting., whereas formal education necessitates full time devotion to education.

Some have suggested that since there is little teaching in distance education, it should not be described as an educational activity. To many it appears to be a kind of industrial, organizational selling of learning goods for financial profit.

Distance education is not a conventional kind of education. It is based on rationalized and technologically produced teaching programmes. This learning is different from on the campus learning which is primarily limited to teacher-oriented communication. But the concept of inter-personal communication is central to distance education. This inter-personal communication has following functions :

i) Information function - to provide information
ii) Expression function - to express feelings
iii) Control function - to get someone to behave
iv) Social contact function-to achieve interaction.
v) Stimulation function - to stimulate

These functions, in distance education, are carried out through the printed, or electronic, or computer-based interaction.

The main objective of the open university is to provide wider access to education to a large number of people, while maintaining high quality in instruction. To do this, choice of media becomes important to distance education.

Types of media used are :

i) **Print material :** Infact, this is the mainstay of the instructional system. The lessons, are specially prepared keeping in mind the students whom the teachers do not see. The material is carefully prepared to suit them and to help them learn on their own without much assistance from others. The printed material has several advantages. It is easy to carry, can be used according to the convenience of the student, and is comparatively cheaper.

ii) **Broadcasting** - Radio & T.V. : It is another important medium used in education. Its use can improve the quality of existing educational production. It can equalize, or spread more widely, educational opportunities. It can also be used as a revolutionary force to bring about radical changes in the social concern.

In addition to this, video cassettes, video discs, satellites, telephones, computers, audio cassettes, and video tax can also be used according to need and availability.

Criteria for Selection of Media :

i) Availability ; The technology selected should be well established in local environment so that sufficient trained manpower is available to facilitate the use of the medium.

ii) Accessibility: Technology must be universally available to all the students.

iii) Acceptability : The attitude of both staff and students must be favourable towards the use of that technology.

iv) Economics: It must be cost effective.

v) Validity : The technology must be appropriate for the instructional objectives and subject matter content.

For better results we have to overcome the following weaknesses :

i) No hard language

ii) An absence of immediate feed-back directly from student to teacher.

iii) Delayed reinforcement

iv) No physical contiguity (of teachers & learners)

So we need a more rationally determined means - ends process.

Distance Education in Punjab :

Education in Punjab is provided by four universities viz. Guru Nanak Dev University, Amritsar; Panjab University, Chandigarh Punjabi University, Patiala and Punjab Agricultural University, Ludhiana. However, Guru Nanak Dev University, Amritsar does not provide distance education opportunities. Panjab University, Chandigarh and Punjabi University, Patiala, impart higher education by giving degrees and diplomas in various fields through distance education viz., B.A. / B.Com., M.A. (by both the universities), Diploma in health, family welfare and population education, diploma in statistics (Panjab University); Punjabi Praveshika, Diploma in Divinity, Gyani, M.Com., B.Ed., M.Ed., Diploma in Library Science, Post-graduation diploma in Management of Public enterprises, Post-graduate diploma in Public relations and advertisement (all from Punjabi University). Punjab Agricultural University offers courses to farmers, farm women, and rural youth.

The courses of study, the syllabi and duration of the courses and mode of examination are the same as prescribed for regular students of colleges affiliated of these universities and their teaching departments. The medium of instruction is English and /or Hindi and /or Punjabi.

These three Universities impart instruction mainly through the medium of printed lecture-scripts, which are supplemented by radio talks, audio lessons, personal contact programmes and response-sheets.

The syllabus for each paner is divided generally into large lesson units, each one of which is further sub-divided into a number of lessons. These units are dispatched at regular intervals. Suggested readings and important questions are given at the end of each lesson to motivate students to read independently and supplement their knowledge. In addition to this radio talks are arranged in collaborations with All India Radio, Jalandhar.

To give an opportunity for personal interaction, the study the universities conduct personal contact programmes and provide intensive classroom instructions, discussions, and personal quidance to the students.

Lesson units containing response sheets which the students are required to attempt and send back to the universities. The response sheets are required to be submitted before the date fixed for doing so.

Library facility to the students is also provided by the universities. The students joining the correspondence courses are eligible for the university merit scholarship as well as the National Merit Scholarship.

ROLE OF DISTANCE EDUCATION INSTITUTES IN INDIA

J.Ramu Naidu

India is the second most populous country of the world. According to the 1991 Census the total population is 846.3 million. Between 1981 and 1991 there has been a growth of 23.56 per cent in the population. The sex ratio is 929 females per 1000 males. India has more than 15 per cent of the world's population. India is predominantly a rural country with 74.3 per cent of the population living in rural areas. The literacy percentage is 52.11 percent. The percentage of male literates is 63.86 and that of women is 39.42 per cent. India is a predominantly agricultural country. 75 per cent of its population lives in more than 5,57,137 villages. Indian economy is a mixed economy.

The history of Indian education is a picture of some outstanding achievements along with many outstanding failures. The importance of education as the most effective instrument for national development has been well recognised by the country from the very beginning of its independence in 1947. During the last fifty years of independence, considerable development has taken place in the educational field. But the formal education institutions are not sufficient in number to meet the growing population in India. Due to the inadequacies, rigidities and the limitations of the formal system of education in India, the distance education role has enormously increased.

Education is not only a social and moral imperative, it is also an economic necessity. Development holistically conceived in terms of cultural, social, political, and economic domains calls for massive need-oriented education. But the conventional face-to-face system of education proved inadequate to accommodate the growing needs of the society. Thus emerged the system of distance education to provide an effective alternative to the traditional system. It indicated a healthy evolution in the field of education, though in certain ways it may be considered a revolutionary development because it marked a significant break from the centuries old formal teaching system and led to the development of an innovative multi-media, teaching-for-learning system. The concept of distance education has emerged as a result of man's search for an education which could be provided to a person at home.

Distance education is a system of education in which there is little face-to-face relationship between the teachers and the learners, but they are linked through different media as print, radio, T.V., multi - media, internet, etc. Distance education is democratic as well as socialistic in nature. It helps in diffusion of education and equalization of educational opportunities. In the entire world, the population is

increasing so fast that formal means of education cannot keep pace with it. Besides, even the existing educational resources are not being fully utilised by those for whom they are intended. It is more so in developing countries because of poverty. A number of persons are deprived of education due to the above problems. But providing proper educational opportunities to such vast numbers can be taken care of by means of distance education only. It has a message both for life-long education as well as for universalisation of education. It is acting as a useful medium for promoting diversified as well as vocational education. It is the source of inspiration, for those who had 'dropped-out' of it at some stage. In other words, distance education is an organised provision for learning opportunity on part time basis, outside the time table of formal system of education covering a person's life time in his own environment, more or less according to his own perception and at his own time.

Distance education institutes or schools of correspondence courses are mostly useful for the following persons.

1. In-service persons,
2. Drop-outs,
3. Persons in the geographically remote rural areas where there are no institution of higher learning and also socially and economically backward sections of the society.
4. Persons who are unable to join formal education due to overflow in many educational institutes where admissions are made on merit and for a fixed number of seats.
5. Persons who need some additional training in their vocation for updating their knowledge and career advancement etc. The growth of distance education can be traced back to the middle of 19th century and the lead in this field was taken by many European countries such as Germany, England and Sweden, etc.

The gradual development and growth of distance education all over the world had its echo and impact in India also. In July, 1962, the University of Delhi made an important landmark decision in the history of education in India by starting correspondence courses. These courses were started in pursuance of the recommendations of an expert committee under the Chairmanship of Prof. D.S.Kothari, Chairman, University Grants Commission. These courses were assigned to a body called the Directorate of Correspondence Education and Continuing Education. The syllabus was also the same as that of the regular colleges of Delhi University. The successful experience of Delhi University in conducting this pilot project bearing excellent results set in motion the other universities thinking in the direction of introducing correspondence courses in their respective institutes at different levels. During the sixties, only four institutes of correspondence education were established, viz., Delhi University (1962), Punjabi University, Patiala (1968), Meerut University

(1969), and Mysore university (1969). The sixties was therefore, a period when the idea of distance education took shape and began to strike roots in the Indian environment. During the seventies 19 universities started institutes or directorates of correspondence education and thus a major thrust was provided to distance education in India.

During the seventies, the following universities started the distance education institutes: Himachal Pradesh (1971), Andhra and S.V.Universities (1972), CIEFL, Hyderabad (1973), Patna (1974), Bhopal, Utkal, Bombay (1975), Madurai Kamaraj, Jammu & Kashmir, Rajasthan (1976), Osmania and Kerala (1977), Allahabad and SNDT (Women's) Bombay (1978), Annamalai and Udaipur (1979). Thus distance education got a big push during the seventies. More and more universities took to distance education as an alternative technique of education.

During the eighties, for the first time in the history of distance education in India, the Government of Andhra Pradesh took the momentous decision to establish A.P. Open University in 1982 with an autonomous status. It was also felt that an open institution of this kind fully devoted to the development of distance education would be very useful. As a result, in September 1985 the Government of India decided to set up the Indira Gandhi National Open University (IGNOU). Today about fifty universities and educational boards besides the Indira Gandhi National Open University, New Delhi, A.P. Open University, Hyderabad, Rajasthan Open University, Kota, and Nalanda Open University are engaged in imparting instruction through the medium of distance education.

The nature of distance education system is also, reflected by its structure. The key elements of this structure may be listed as follows :

1. Printed Material : This consists of correspondence notes, pamphlets, books and teach-yourself manuals. This printed material forms, perhaps, the most important part of the learning process of distance education.
2. Audio-visual Aids : This includes slides, films, and audio visual video tapes.
3. Radio and Television : Mass media can be used to broadcast and telecast the learning programmes. This helps in creating a sort of class-room away from the campus in the home. This also, permits a kind of structured reading-cum-assignment programme.
4. Computer-aided learning : This is also an indirect learning method and is used extensively in the developed countries.
5. Study groups : This provides informal face to face encounters among learners who can mutually come to understand their difficulties and help to solve these.
6. Personal contact programmes and week-end programmes : These programmes help in establishing a face to face contact among the tutor and learners.

Through these limited and restricted contacts, an attempt is made to assimilate the major benefits of direct teaching in the system of distance system of education.

Despite the above described features of distance education, the system still bears some inherent limitations. In fact, the system of distance education demands the presence of high motivation on the part of learners and the establishment of strong feedback system as well as the student support services. The absence of any of the above requirements may prove a serious limitation to the distance education system.

In any developing country like India, the traditional system of education is found inadequate to meet the needs arising out of the changing social, political, and economic order. The nation is committed to provide education, right at the doorstep of all those who need it. Correspondence education is an outcome of the social urge for education consistent with the aspirations of democratic policy. It is based on the philosophy that any thing which can be learnt in a regular class room can be equally well learnt from correspondence education. it is now a vital instrument of instruction both in the developing and developed nations. The correspondence education enables the nation to achieve the principle of equality of educational opportunities for higher education for a large segment of the population. : in-service personnel, housewives, disabled persons, underprivileged people residing in remote areas, school drop-outs, etc. all may avail of the courses offered by the correspondence education.

The school of correspondence courses of Andhra University started functioning from 1st July 1972 by introducing B.A.,and B.Com. degree courses with some select specialisations under new scheme with the approval of the University Grants Commission (UGC). It is now considered as a leading institution in the field of distance education in Andhra Pradesh. This school has a narrow jurisdiction; it operates mostly within Andhra Pradesh. Hence it is important to have a brief description of the scoio economic structure prevailing in Andhra Pradesh, Andhra Pradesh is one of the 25 states of India formed in 1956. It has an area of 275,045 sq.kms. and is the fifth largest state in the country. The state has 23 districts which are divided into three regions -- Telengana, the Coastal areas and Rayalaseema. There are two kinds of climatic conditions. The whole of Telegana and the coastal area receive heavy rainfall whereas in other areas of the state hot condition prevail.

According to the 1991 census, the population of the state is 6.65 crores representing 7.86 per cent of the country's population. In terms of density there are 241 persons per square kms. The birth rate is 26.0 per cent, death rate is 9.7 per cent and the annual growth rate of population is 23,91 per cent in this state. The working population numbers 42 per cent of the total population, unemployment stands at 24.79 lakhs. Telugu is the dominant language. Apart from this other Indian languages like Marathi, Kannada, Tamil, Malayalam, Oriya and Hindi are

also spoken in this state. According to the 1991 census, 45.11 per cent of the state population is literate. There are 56.24 per cent literate men and 33.71 per cent literate women in the state. There are 13 conventional universities in the state of Andhra Pradesh. Although there has been a substantial increase in quantitative terms as far as the expenditure on education is concerned. But if it is calculated in real terms by taking into consideration the growing size of population and prices, it is very inadequate. The growing resource crunch further emphasised the need for finding an alternative system of education. Thus, the distance education mode is extremly important for the growing needs of the society.

In view of the inadequacy of the traditional system of edcuation, the correspondence education is most useful to meet the present requirement of the population. The School of Correspondence of Andhra University is the oldest and the most important distance education institution in Andhra Pradesh. By way of implementation and adoption of several procedures and the introduction of modern equipment to strengthen the student support services, the school of correspondence courses of Andhra University has achieved a remarkable progress during the last few years and crossed the 46,000 mark in enrollment of students. Surpervised instructions through correspondence is a well tried modern method of education. The correspondence method cuts down most of the expenditure and also permits greater flexibility than class room teaching. The school of Correspondence courses of Andhra University started functioning from 1st July, 1972. The School introduced liberalised admissioninto B.A. and B.Com. degree courses in 1976. Under this system, entrance examination is conducted for admission into B.A./B.Com. degree courses. No formal academic qualification is required to take the entrance examination. But the candidate should have completed 18 years of age by 1st July/1st January of the year of appearance for the entrance examination.

M.A. (Economics) and M.Com. courses were started in the year 1978-79 with the assistance of the University Grants Commission (UGC). Later B.Ed. and M.Ed. courses were added during the years 1980-81 and 1982-83 respectively, M.A. (English) and M.A. (Public Administration), P.G.Diploma in Cooperative and Rural Studies and B.Sc. courses were introduced from the academic year 1983-84. From the academic 1989, the School has started non- conventional one year P.G.Diploma Courses in Translation, Environmental Studies and Functional English. Besides these courses, the School introduced the following M.A. Courses from the academic years 1989-90. 1. M.A. (Hindi), 2. M.A. (Telugu), 3. M.A. (History), 4. M.A. (Politics), 5. M.A. (Sociology), From the academic year 1997-98, the School has started the following one- year non-conventional courses :

1. P.G. Diploma in Tourism and Travel Management.
2. P.G.Diploma in Management of Voluntary Welfare Organisations.
3. P.G. Diploma in Personal Management, Industrial Relations and Labour Welfare.

The school has used the following tools for better achievement/improvement. They are :

1. Lesson Materials : Most of the printed lessons are being sent to the students in time. These lessons are mostly written by well-experinced teachers.
2. Study Centres and Week end Classes : In order to supplement the personal contact programme classes, the school started week- end classes for B.A., B.Com and B.Sc. courses on second Saturdays and Sundays at its study centres for ten sessions in each subjects. The School has 32 study centres located in different colleges in A.P. In addition to that, one study centre is located in Delhi. The Principals of the respective colleges are the Coordinators of the study centres. A senior teacher of the concerned college is appointed as the Assistant Coordinator of the centre.
3. Work Centres : In order to further strengthen the student support services the School has started work-centres where the infrastructure is not readily available for starting study centres.
4. Personal Contact Programme : It is common knowledge that P.C.P. has been the only forum through which a distant leraner meets his teacher in person. The UGC guidelines are also very clear about the programmes and its utility.
5. Personal Contact Programme (PCP) - cum-Practical Classes for B.Sc. ; The week end classes and the practical cum personal contact programme classes for the students of B.Sc. (3 years) are arranged in 5 study centres where there are well-equipped laboratory.
6. Personal Contact Programme (PCP)-cum-Practical Training Programme for PGDCRS course are also arranged in different centres.
7. Week-end and Personal Contact classes for post graduate courses are also arranged in the university campus.
8. Conduct of Examinations by the School : Until 1989, examinations for various courses were being conducted by the office of the Dean of Examinations of the University. Due to delay in hall-tickets, results, mark sheets, etc. the University authorities have realised the need for the conduct of examination by the School for the students of this institution and thereby delinked the examiantions for various courses offered by the School from 1990.
9. Conversion into Distance Education Mode : According to the UGC guidelines, this institution has changed its nomenclature from School of Correspodence Courses to School of Distance Education from the academic year 1996-97. Due to this, the reading material has been changed into self-instructional materials (SIMS) mode and also multi-media approach has been adopted.

10. Research in Distance Education: According to the UGC guidelines the teachers of the School are pursuing research work in the area of Distance Education both at the theoretical level as a discipline and at the practical level to evaluate organisational aspects of the system, without prejudice to the research work in their respective subjects of specialistion and in undertaking guidance to students for M.Phil, and Ph.D. degree in various aspects of distance education.

The following suggestions may be useful for the effective functioning of the Distance Education System.

1. The lessons should be written in simple and easy language by well-experienced teachers.
2. The printed material or reading material should be supplemented with more examples, diagrams and illustrations and also it should be systematic and logical having short sentences, paragraphas and headings.
3. Sufficient self-check exercises and summary must be given at the end of each unit and also it should be self-explanatory or self-instructional material.
4. The materials should be prepared from the examination point of view.
5. The printed or reading material should reach the students in good time.
6. Proper check up is needed for the student support services in any aspect.
7. Duration of week-end and P.C.P. classes should be increased in order to supplement the student support services as well as to maintain the student-teacher relationship for the solution of any specific problems in the study.
8. In order to improve the quality and standards of correspondence and distance education offered by the distance education institutions, it is strongly advised that they may be given autonomy within the University framework for diversifying the activities and upgrading the courses.
9. The existing correspondence courses be improved in their quality and delivery system by adopting multimedia approach to the instruction materials.
10. In order to raise the quality of the instructional material and counselling it is necessary to organise orientation/training programmes of the teachers involved in the distance education.
11. In order to ensure smooth functioning of the distance education institutions. There should be different coordination committees : like, student support services, examination committee, academic committee, library committee, printing committee, finance committees, dispatch committee.

12. Proper awareness should be created among distance education learners regarding the availability of different services rendered by the institutions.

The efficiency and effectiveness of distance education system may be further increased by applying an integrated multi- media approach, based on the rational allocation of available resources.

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CREDIBILITY OF DISTANCE EDUCATION : A CHALLENGE

Lalit K. Bansal

The world over distance education is being reared as a competible discipline of education for fulfilling the social and constitutional obligation of providing education at the door step of the needy section of society. Distance education is a combined stream of two programmes which are interrelated , 'instruction programme' and 'learning programme'. Most distance education institutions are concentrating on the former and giving least attention to the latter. To embody learning programme, shift of emphasis from the teacher teaching to learner learning needs to be made. It is a teacher who teaches in the traditional system of education but it is the institution which teaches in the distance mode. Thus efficiency and efficacy of the institution matter more in distance education. How efficient is the administration of an institution is reflected in more crystal clear manner in distance education system as compared to in the traditional system. In the last quarter century a reasonably sufficient infrastructural set up has been evolved for imparting education through this mode. But this process has been associated with many odds, emerging on account of negligence in planning and implementation. These odds have impaired this system of its productivity, thus signs of crises of credibility and confidence are creeping in. Credibility on academic, administrative as well as on operational fronts is under shadow which merits to be averted. Education has no meaning unless there is credibility - in quality and its acceptance.

These features are considered in this paper while commenting on how to enhance credibility of distance education system to assure quality education which is the right of every student, the client of the system.

Quality is totality of characteristics and features of a product, service, system or part that bears upon its ability to satisfy stated or implied needs of a customer. Higher credibility in distance education aspires for higher quality in context of expectations of students about the courses; their delivery and evaluation system. Besides their satisfaction credibility of education also relates to academic orientation of an institution as envisaged in the objective statement of that institution. It is unfortuante that these instiutions hardly spell out their specific mission statement. Introduction of quality consciousness, quality control and continuous quality improvement is concomitant of higher credibility. The fact that distance education has withstood the test of time and is becoming a most sought after mode of instructions, can hardly be denied. Nevertheless, the defects are no less important to look at and can hardly be ignored. All such defects lower credibility of the system.

Credibility of a distance education institution is not to be evaluated by distance education experts, but by its beneficiaries. Credibility is reflected in management culture and to improve it quality management exercise is the option. It is a process, designed to focus on customers' expectations, preventing problems and building commitment to quality in the work force. It targets gradual change of human behaviour towards the task they perform and the attitude towards other people. It is infact a culture to be evolved throughout the organisation.

(i) Beneficiary Orientation : Although everyone realises the necessity of focusing on beneficiary's needs, wants and expectations, however this facet is still lacking in many institutions, They fail to give due emphasis to different objectives of their clientele i.e. their upgrading, updating and social and cultural aspects. These institution come out more or less with traditional courses which are degree oriented only. In this direction these institutions have to evolve adequate measurement system instead of having simple "student satisfaction surveys". Enhancing credibility through "quality managerial exercise" desires focusing the energy of the organisation on the customers. Without gauging the needs and requirements, these institutions cannot meet the end of providing productive education. Offering them what you have instead of what they need tells upon the credibility of the system.

(ii) Service Orientation: The primary driving force behind beneficiary satisfaction is the quality of the service offered. Service offered by these institutions can be classified into two categories a) tangible and b) intangible. We refer to teaching material as tangible product whether printed, audio or video. The quality of teaching material has two dimensions one is quality of content and secondly the quality of presentation. Quality of content of teaching material warrants not to leave its design to one individual but make it a team activity. The team should include academicians, media persons, education technologists. Virtually all institutions talk of it but due to lack of resources as well as lack of enthusiasm hardly any one has tried to adopt it practically, except IGNOU. Credibility of study material requires that it should be well structured, self explanatory, arousing in the student a sense of excitement and purpose. The three media used for teaching material i.e. print, video and audio should have a common approach and compatability. To ensure quality of presentation, limitations of our clientele i.e. less time and lack of motivation, should be appreciated. A constant vigil is needed ensuring that no compromises are made over a period of time. Intangible products include all categories of support services for students. It is to ensure effective two way communication whether for academic or administrative purposes. Counselling, written assignment evaluation, telephonic consultation etc. are some of academic support services. A student of this system is effectively supported: when he receives explanations to help him if he just cannot understand on his own; when he fails to apply his learning and some one prompts him so that he can make a start. Further, when he gets a warm response and feed back to enable him to judge the strengths

and weakneses in his learnings, he gets encouraged. On administrative front a prompt reply to the clarifications sought certainly relieves the student of his unnecessary worries. This is probably another area where almost all Indian institutions are yet to mature.

(iii) Operational Efficiency : Operational efficiency basically refers to two aspects one is 'time' another is 'cost'. A disciplined process ensures timely delivery to beneficiaries. Promptness in registration, dispatch of teaching material, contact programme and Radio talk schedules, prompt replies to administrative querries etc. speak highly of the institution. Timely preparation of contents of teaching material, desirable updating, prompt evaluation, and quick and warm response to academic problems of students are to be ensured. Such promptness highlights quality of academic services by the management. Timely output from production process is subject to a very crucial factor i.e. availability of finance, but still disciplined production cell is a pre-requisite of quality conscious management. Unattractive format and unattractive presentation of teaching material will neither induce nor motivate our beneficiaries to use these products. Cost is a major elements on account of which compromises may be made in operational quality besides service quality. Setting standards in all the three processes is not a very difficult task but mere setting of standards without their follow up cannot give us the desired results. Beneficiaries hardly appreciate compromises on cost and time fronts.

(iv) Quality Leadership: Traditional executive (managers) honour stability, systems of control and procedures, conservative and dispassionate style and behaviour. Traditional executives are managers, but to establish credibility, the system needs leaders. Leaders have long term perspective and are visionaries. Managers get the things executed by giving orders where as leaders establish credibility with their passion and personal deeds. In distance education the person at the helm of affairs should be an executive leader who cares for recognition, participation, consistency, and personal demonstration of the quality process. In this mode of education teacher alone does not matter. Other features are equally if not more important. A true leader can build up credibility of system at micro level by a orientation targeting at quality planning, quality control, and quality improvement. Quality planning the activity for developing products and processes is required to meet the consumers' needs. Quality control evaluates actual quality goals and acts on the differences. To access quality we have to a) get feed back from the beneficiaries i.e. students and b) undertake self appraisal. Quality improvement is the means for raising quality performance thus, credibility.

Why Credibility of Distance Education is a Distant Dream?

Resource Crunch: Anyone working in distance education can visualise finance as a major obstacle in the way of attaining credibility for distance education. Since all institutions are dependent largely (90 to 95% of funds) on budgetary allocation, efforts by the head of the institution for quality can hardly bear results.

Basic printing standards may be unattainable, authors may not use drawings or photographs because these are too expensive, compromises have to be made in choice of authors to prepare study material or for counselling or evaluation, the production of audio visuals are adversely affected due to resource cruch.. Delays in dispatch may be to economise on postal charges. The number of counselling sessions may be curtailed again due to budgetary pressures. Further, government system of budgeting does not meet their requirements. These institutions to operate efficiently have to have flexible budgeting instead of rigid budgeting, since one can hardly anticipate volume of one's customers and moreover students cannot be denied admission to any course for want of budget.

Lack of Autonomy: Such institutions may feel handicapped to attain high credibility in absence of autonomy. Unless these institutions are made autonomous these will have to compromise with their mission, they will be tagged by the reputation of parent institution, and they can hardly think of introduction of innovations in teaching technology. They seldom can introduce market based product mix and are satisfied by the traditional degree courses. Frequency of changes in the contents of courses are difficult for heads of these institutions.

Assessment Procedures: Credibility of any education system depends to a large extent on the assessment procedure it evolves. In distance mode which follows open system, there is hardly any check on input thus the onus is on the system to provide for quality out put. The evaluation system of distance mode should be different from traditional mode since informal and continuous evaluation is missing in the latter mode. We can hardly maintain credibility and respect unless there is a demonstrably strong correlation between securing good marks and being a good student. Overall assessment procedure should inbuilt home work assignments, assessment at counselling sessions along with year/semester end examination. Distance education being a part of traditional system has to strive for more optimal system of assessment. Evaluation system should be properly validated and must be seen by everyone to be cogent and equitable. This point again emphasises greater autonomy for distance mode of education.

Absence of Research Facilities: To be more effective distance education institutions should have more research facilities to add to their credibility. These institutions hardly have effective research centres of their own and what ever research findings are available these are not shared by institutions in the country. To understand the problems of our customers (present and prospective) we should devote more time for disciplinary research in distance education field. To make higher credibility concept operation in distance education system, there should be planned and on going research efforts to evaluate and improve the system. The curious querries like what our students learn, what contribution has been made by teaching material, how and why these contributions are effective, what they do not learn of our declared outcomes, what difficulties and aspirations they have which

have gone unresolved remain unanswered in such a situation. Whatever research is undertaken that too targets summative evaluation (How good is it) instead of formative evaluation (How to improve it).

Non commitment to distance education by the education planners is a great barrier to its credibility. Non commitment in the sense that they fail to appreciate peculiarities of this system while planning and organising their affairs. UGC through DEC (IGNOU) or any other agency should give specific directions to make this potential system operate in a manner to earn credibility for the system. The above mentioned agency should workout norms and standards to gauge credibility of distance education institutions. A system of collaboration or even merger of credible institutions should be designed to make the system vibrant. Business like approach in distance education has to be cultivated, of course not from profiteering angle but from the angle of delivery of services. Distance education will be dominating in 21st century only if its credibility is built up and maintained both in concept and practice.

DISTANCE/HIGHER EDUCATION IN INDIA EXPORT PERSPECTIVES FOCUS

Perminder Khanna

What determines how a country grows and how fast it grows? There is probably no definite answer or model that can be replicated by India.

Even the growth experience of several developed economies makes it difficult to pinpoint a sure policy or ingredient that might lead a country to the fast track. Governments of these countries have followed very different policies - from relatively free markets like in the U.S.A. and some West European Economies, to closely regulated regimes like South Korea's and Japan's.

Yet, there are certain basic ingredients common to a majority of today's fast growers and the nations that are already developed. and these can be grouped together into what might be called social infrastructure education and health.

Changing Scenario

As we move towards the end of the 20th century, we realise that education which was essentially an ornament with no significant economic value in the age of agriculture and a tool for development, in the industrial economy, has come to be a resource by itself in the high technology era.

Human capital, education and liberalisation have complex relations to development. They enable economics to respond not only to price signals but also to new ideas. The link between knowledge and growth has been important in East Asia for the past forty years. Education helps knowledge to develop. Knowledge brings about an improvement in the existing techniques of production. It helps to develop new technology indigenously leading to "technological catching up", and "technological deepening" especially in the developing countries. Education encourages the adoption, adaptation, and diffusion of technology.

The Indian Scenario

Take 209 Universities. Add 7,513 Colleges, 2.5 lakh teachers and 46 lakh students. Take for granted that the student strength dwarfs all South American countries put together. Now splice these figures with a long history of pre-eminent position in higher education. What you have is an International Midget in education, INDIA. The situation is all the more ironical because India was once considered the land of knowledge and enlightenment.

In ancient times, scholars from all over Asia and Europe used to flock to Takshila, Nalanda and other Indian Centres of Learning. Apart from Arts, Culture and Religion, these scholars came to study medicine, law and martial sciences.

The low productivity of the existing system will make it economically difficult for the nation to handle the large numbers and the rigidity of the existing system will make it difficult for the new target group opportunities.

New Demands

Certain developments are inevitable in the future. The universities in the past had only scholarly responsibilities; now they have developmental responsibilities too. In addition to the traditional functions of preservation of knowledge, communication of knowledge and creation of new knowledge, the universities today have extension work also. This work, they cannot do, if they confine their activities to the classroom and the campus. In future, every conventional university will have a reasonable measure of distance education component. Even in classroom system, as long as self learning, such as assignments and advance preparation for discussion in the classroom is involved, it will constitute a distance education component. Similarly, when distance education institutions take up programmes involving laboratory classes, workshop and practical work, face to face instructions will become inevitable. Consequently, education and training will not be one of purely conventional classroom instruction or purely distance education : It will be a spectrum with pure classroom instruction at one end and complete distance educational mode the other.

Distance education helps the universities, not only to transcend the boundaries of the classroom and the campus but also the state and national boundaries. We shall soon witness the phenomenon of multinational universities just as we now have multinational corporations. The universities in each country may have to compete in future with some of the famous universities of other countries. Education that can meet the day-to-day manpower needs will become one of the marketable goods. The consumers' preference will dominate the choice of curriculum and syllabi and rigid programmes will yield to flexible ones.

The low productivity of the existing system will make it economically difficult for the nation to handle the large numbers and the rigidity of the existing system will make it difficult for the new target groups to avail themselves of the opportunities.

Economic Crisis In 1990

Prior to the introduction of the New Economic Policy in June 1991, the Indian economy was on the verge of collapse; there was no foreign exchange to meet the import needs of the country and repay our foreign debts. The import squeeze had put breaks on industrial production. Inflation was rising even while availability of new jobs was shrinking. Worse, foreign lenders and NRIs had lost confidence in our economy, capital was flying out of the country and we were about to default

on our foreign loans. Never before had the Indian economy been gripped by a crisis of this magnitude. But this was merely a symptom of a deeper malaise that had weakened our economy over the last so many years. There is no doubt that over the last forty years we have had significant accomplishments. We now have a highly diversified industrial structure that produces aircrafts, nuclear reactors, satellites, automobiles, turbines, machine tools, etc.

However, when we look around us, these achievements compare unfavourably with the progress recorded by others. In 1950, India's industrial sector was bigger than Taiwan's or South Korea's. The share of our exports in world markets was higher than that of China, South Korea, Singapore, Indonesia or Malaysia. The level of poverty in these countries was equal or more than what prevailed in our country. Over the years, all these countries have passed by us. They export much more than we do. Their industry is more competitive than ours. They have a higher level of foreign exchange reserves than us and barring China all these nations have succeeded in eradicating poverty and achieved the status of Middle Income Nations. Their per capita incomes are at least twice as high as ours. Their people are more educated and enjoy a quality of life superior to that available to an average Indian.

With accumulating foreign debt, a sustained rise in fiscal deficits over the years, rising interest costs, and the climate for cheaper concessional aid going adverse, the need for global links and marketing expertise in the context of Distance/Higher Education is imperative.

India, the ancient centre of learning, has to open up to students across the national boundaries. It can earn herself a name in education and about Rs. 2,000 crores in foreign exchange with a bit of planning and marketing. Despite having a vastly expanded university system, India has failed to provide international or even regional leadership, in higher education. From the surrounding countries of Asia and Africa, only students who cannot afford to go to the West or Australia come to India (Table - I).

The United States is, by far, the most successful country in attracting foreign students. In 1993-94, there were 4,38,000 foreign students in the U.S.A., Australia, Canada and the U.K. have also aggressively marketed their universities abroad. In India the number of foreign students is miniscule.

The major influx of students is from developing countries to English - speaking developed countries. Within this, the major movement of students is from the developing Commonwealth countries to the U.K., Australia, Canada and the U.S.A. Within the last two decades, scholarships for foreign students have dwindled. Foreign students are expected to pay full fees and in the U.K. and Australia, pay up to double the fees charged of local students.

As a result, the majority of foreign students studying at the Western and Australian Universities are from the newly flourishing economies of ASEAN and other South Asian countries.

Students from the poorer countries of Africa and Asia seek higher education in countries like India, where fees and living expenses are cheap and there is generally no fee differential for foreign students (Table - II).

Education-Export Perspectives

The economic implications of exporting education are substantial. In 1992, Australia earned $ 1.3 billion, the U.K. £ 1.5 billion and U.S.A. $ 6.1 billion, from foreign students. Tution fee accounts for 30-40 percent of these revenues.

Apart from international goodwill and increased regional and global influence, the most important benefit of attracting foreign students is economic. Foreign student revenues can ease the financial crunch faced by Indian universities, enable improvements in facilities and standards and subsidise the educational cost of Indian students. Studying in India offers several advantages for foreign students, particularly those from foreign countries.

* Fees and living costs are much less than in Australia and the U.K.
* The cultural environment in India is quite similar to that in most Third World Countries. India is considered a safe, conservative society.
* Training, especially technical education, received in India is relevant to developing countries.
* The medium of instruction is English, which many Asian and African students want to master.

India should capitalise on these advantages, market Indian universities abroad and facilitate the entry of foreign students and if about a lakh of foreign students are attracted to India, they can earn sizeable foreign exchange for INDIA on recurring basis (Table - III).

In the Eighth Plan, the outlay for higher education was Rs. 1,560 crore. This entire amount can be raised from foreign student revenues. As much as Rs. 1,500 - 2,000 crore annually in foreign exchange earnings is the equivalent of a major Export Industry. Inorder to exploit this potential, certain positive factors merit consideration and implementation.

Traditionally, the academic community, government and judiciary have raised shrill voices against the commercialisation of education. This blinkered attitude has ignored the pragmatic changes in approach to university funding that developed countries have adopted. In the last few years, however, the reality of the resource crunch facing Indian universities has resulted in the shedding of pious opinions.

Comprehensive National Policy Need of The Hour

At present, there is no comprehensive national policy in India for the potential role of Indian higher education in the international arena. Foreign students and colleges willing to enrol in Indian universities must be encouraged. At the same time, there must be appropriate monitoring so that these students are not exploited. The UGC has set up a committee to study this issue.

In order to help influx of foreign students, the following measures should be adopted:

* Special allocation of seats for foreign students should be permitted in the disciplines of engineering, management, and medicine.
* NRIs should be encouraged to send their children to Indian colleges. Cultural and family inducements exist but difficulties in obtaining admission and visa hurdles discourage many NRI's
* The effective marketing of Indian universities needs to be supported by a favourable government policy. Indian embassies abroad must serve as centres for the dissemination of information about education opportunities in India, in a manner similar to that of the United States educational foundation in India and the British Council.
* The saleability of Indian education should be enhanced by highlighting quality education, low tuition and living costs, and the cultural and historical milieu.
* Physical facilities such as hostels, classrooms, labs and other equipment need to be improved in universities. On each campus, an international students hostel, with appropriate conveniences and food fare should be provided.
* Obsolete curricula need to be redesigned to keep pace with international standards.
* Innovative academic programmes, such as twining and transfer arrangements with foreign universities should be facilitated. Development plans and programmes of our universities, therefore, have to be directed to the establishing of an educational network initially within a university, and later extending to all open and distance education institutions in the country.
* Applications of new technologies in distance and open education is a fascinating, attractive and a fertile field for R & D activities. Applications of modern technologies will certainly help open universities in developing path-ways and highways for educating every learner in the future learning society. This, therefore, offers a great challenge and an opportunity to every teacher.
* Developing application packages that help learners in achieving quality education through self - instructional process is the great task of the evolving

educational technology in open universities. The work will give great satisfaction to the teacher by seeing the use of his product by a large number of learners; and also credit and benefit, if marketed on a large scale. The research findings of IGNOU can be utilized as a feedback to further improve upon the system.

* Incorporating visual aids in printed material.
* Evaluation of course material and integration of feed-back devices in the course materials.
* Assessment of teacher needs and learner performance.
* Research methodology in distance education and how to implement the findings.
* Alternative models/techniques of procuring multi-media packages.
* Professional development through time allocated for individual reading/study and discussions.

Especially in a developing country like India, where material resources are meager, there is a need for the formation of an institutional network in distance education to make the optimum use of the available non-renewable resources.

Ultimately, a successful policy for the expanded enrolment of foreign students will provide the much needed resources for the universities and will improve the quality of higher education in India.

This would go a long way in contributing towards a self - reliant India; an India that provides dignity and skills to its young people; an India that emerges as a vigorous participant in the global economy and plays a role of leadership in the community of nations; an India that has an economy commensurate with its size, human resources and its potential.

Table - I University Enrolment in Selected Countries

(Figure for 1992)	No. of Universities	No. of Students Lakhs	No. of Foreign Students	No. of Foreign Students
* Australia	36	5.75	52,540	9.1
* Canada	64	5.69	37,478	6.6
* U.K.	97	8,23	85,000	10.3
* India (1993)	209	46.11	13,866	0.3

Table - II STUDENTS AT FOREIGN UNIVERSITIES

(Figures for 1992-93

	ASIAN DEVELOPED*	ASIAN DEVELOPING**	AFRICA***	EUROPE/USA
* USA	1,53,920	34,946	N.A.	N.A.
* CANADA	9,985	4,671	628	6,721
* U.K.	20,000	2,000	N.A.	34,000
* AUSTRALIA	19,249	4,541	N.A.	N.A.
* INDIA	1,507	4,426	6,552	125

* Malaysia, Singapore, Hong Kong, Japan, S Korea, Taiwan.
** India, China, B'desh, Iran, Indonesia, Nepal, Sri Lanka.
*** Kenya, Sudan, Ethiopia, South Africa.

Table - III PROJECTED NUMBER OF FOREIGN STUDENTS AND EARNINGS

	INDIAN STDENTS*	FOREIGN STUDENTS	ANNUAL SPENDING PER STUDENT (IN RS.)	TOTAL (RS. CRORE)
* ARTS, SCIENCE	27,69,381	40,000	1,00,000	400
*COMMERCE, MANAGEMENT	10,09,832	30,000	2,00,000	600
*LAW	2,44,388	10,000	2,00,000	200
*ENGINEERING	2,25,944	15,000	3,00,000	450
*MEDICINE	1,56,777	3,000	6,00,000	180
*AGRICULTURE	48,908	2,000	1,00,000	20
*TOTAL	44,55,230	1,00,000		1,850

* 1992 ENROLMENT

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