

# HIERARCHY OF E- LEARNING DELIVERY MECHANISM: A PARADIGM SHIFT

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## ABSTRACT

*In the present paper an attempt has been made to develop an e- learning programme delivery mechanism model for distance mode of learning so that effective student support services could be ensured by making online learning possible in the diversified socio-economic and geo-physical settings of a country like India. The paper also seeks to analyze the growth of the distance and open learning in India with special reference to Indira Gandhi National Open University. Attempt has also been made to analyze the delivery mechanism of IGNOU for providing better students support services. The paper finally concludes that networking of the system through information and communication technology will not only reduce the operational cost to a great extent, particularly in the long ran, but also bring revolution in the field of higher education in a developing country like India by ensuring effective and efficient online learning to those having poor access to electronic mode of learning.*

*Keywords: e-learning, India, online learning*

Open and Distance Learning System (ODLS) has witnessed phenomenal growth in a developing country like India since the last two decades. First state level Open University was established in India in early eighties and the success of this university has encouraged educational planners and policy makers to promote ODLS at the national level, resulting in the establishment of Indira Gandhi National Open University (IGNOU) in the year 1985, by an Act of Parliament. At present, 11 Open Universities and 102 Correspondence Course Institutions are in operation throughout the country and a few more are already in pipe line and likely to be established shortly (Gupta, Kaushik, & Garg, 2004). IGNOU with its national jurisdiction and flexible rules and regulations in terms of place, pace and duration of the study captured the attention of a large number of learners who discontinued their pursuit to higher education primarily due to inaccessibility and poor socio-economic conditions.

Though the present paper primarily emphasize on developing an e- learning model which suits to the socio-economic and geo-physical conditions of developing countries like India, however attempts have also been made to assess the growth of ODLS in India with special reference to student support services (sss) network of IGNOU. Therefore in the initial part of the paper significant achievements of IGNOU since its inception has been critically analysed. The paper later focuses on developing hierarchy of e- learning study centers, which would facilitate better SSS to the distance learners in general, and online learners in particular. The paper also

investigates how networking and convergence of different institutions/organisations can reduce the administrative and academic costs to a great extent which would result in making online learning model highly viable and cost effective.

To accomplish the objectives of the study, the basic data were collected from secondary sources of information. However, series of interaction with the learners, academic counselors, coordinators and distance-learning administrators were also held from time to time. Two sets of questionnaires were also developed for this purpose which was administered with the learners and academic counselors. Two thousand questionnaires were sent to the learners of Uttar Pradesh and 500 questionnaires were administered among the academic counselors, of which 1132 filled in questionnaires were received back from learners and 114 from academic counselors. Besides, visits to the various study centres in connection with the activities of the university also allow the authors interacted with 30 coordinators/assistant coordinators across the region. The results of the discussion were integrated in the coherent framework of the study at appropriate places.

### **IGNOU: SIGNIFICANT ACHIEVEMENTS**

The university has made incredible progress since its inception, as the total enrolment has increased from about 4200 students in 1987 to 3.35 lakhs students in 2004 in more than 100 programmes; and about 11.87 lakhs students are on the roll of the university. It is coordinating its activities with its well-designed Student Support Services (SSS) network, through its 48 Regional Centres and more than 1133 study centres, spread all over the country. IGNOU works in close coordination with a number of national and state level institutions/organizations including state open universities. It utilizes the services of academics and other staff of host institutions for management of study centres and more than 30,745 counselors, for providing academic inputs to its learners in face to face (f2f) counseling. The other infrastructure of host institutions such as laborites for specialized programmes is also used. IGNOU also shares its resources, such as print materials and audio-video cassettes/CDs with them, which ultimately promotes its resource sharing policies. It has also spread its network to the Middle East Asia, Indian Ocean Island Countries, South East Asia and Africa and has been acknowledged as a mega Open University of the world. Consequently, it has been conferred with Centre of Excellence in ODLS by Common Wealth of Learning (COL) in 1993 and subsequently with award of excellence for developing distance education materials in 1999 (IGNOU, 2004).

The programmes of the university are designed and structured in such a way that these not only cater to the needs of professionals of computer and information sciences, management studies, engineering and technology and medical sciences, but also designed for those living in the remote and rural areas. In addition, besides some of the programmes are specially designed for house wives and unemployed educated youths. Now, university is all set to deliver its programmes through EDUSAT, satellite dedicated exclusively for telecast of educational programmes in collaboration with Ministry of Human Resource Development, Government of India and Indian Space Research Organization (ISRO) making two way audio-video conferencing possible at its 30 Regional Centres, 6 sub Regional Centres and 51 Study Centes in the first phase. The programmes of the university are well received and very popular to attract a large populace of learners.

In India, about 70 percent of population predominantly resides in rural areas. The prevalence of geo-political and socio-economic conditions denies their accessibility to a large number of amenities and facilities including the opportunities of higher education. Though, IGNOU has made sincere attempt to disseminate its policy of reaching the un-reach by establishing Special Study Centres (SSCs) in remote and rural areas, hilly terrains, for minorities and women, however, the desired result could not be attained, primarily due to non-availability of quality academic counselors and relatively poor SSS. Another attempt to make higher education accessible to this clientele in remote and rural areas through Distance Learning Facilitator (DLF) - one man study centre also met the similar fate. Therefore, SSCs as well as DLF schemes turned into a futile exercise. Nevertheless, delivery of programmes through Study Centres (SCs), Programme Study Centres (PSCs) and Recognised Study Centres (RSCs) have contributed significantly to the growth of ODLS in India in general and IGNOU in particular. However, these centres could not captured attention of rural masses primarily due to poor accessibility and non-availability of effective SSS such as f2f counselling, teleconferencing facilities, evaluation and feedback on assignments, conduct of term end examination and other infrastructure required for smooth functioning.

IGNOU has recently launched one month Computer Literacy Programme (CLP) in North East India in collaboration with Ministry of Information Technology, Government of India and State Governments of North East India through a tripartite Memorandum of Standing (MOU). The Community Information Centres (CICs) established by ministry of IT at the block headquarters are equipped with 10 computers with Internet facilities and manned by two counsellors with computer background. As per agreement in MOU, IGNOU was entrusted with a responsibility of producing study materials and making the same available in bulk at these centres. It also contributes towards the counselling charges and for use of infrastructure from the fee collected. Though, the programme accentuate on awareness about the use of computer, however it has gained impetus and become popular in the region in general other parts of the country in particular. Nevertheless, it is felt that these centres should be augmented with more effective support system with timely maintenance and repair of equipments, besides, ensuring uninterrupted power supply to accomplish better results.

### **HIERARCHY OF E-LEARNING STUDY CENTRES (HeLSCs): A PARADIGM SHIFT**

The ever-increasing population of college entrants has put tremendous pressure on the institutes of higher learning. As per estimate 8.8 million students in India are at tertiary level (Choudhary, 2002). The conventional system of higher education has its limitations due to limited space and infrastructures, as a result these institutes are not in a position to shoulder additional burden, resulting in refutation of opportunities to a large segment of populace. On the other hand, diffusion of innovation has brought awareness and demand for quality and equity higher education. Though concentrated efforts were made to privatize higher education, specially by setting up private Universities, particularly at the state level, high fee structures and business motives of these institutions largely denies the opportunities of quality higher education to underprivileged groups. Moreover, delivery of quality higher education is also questionable. On the other hand, worldwide use of online learning has posed serious challenges, and it is predicted that education paradigm in 21<sup>st</sup> century will be a combination of

interactive learning and online instruction (Khan, 1997). Therefore, institutions like IGNOU have no option but to make necessary adjustments in its programme delivery mechanism to accommodate this phenomenon in order to sustain itself. In the present paper an attempt is being made to develop e-learning delivery mechanism/system for distance mode of learning so that opportunities and accessibility to modern means of technology be ensured to the distance learners irrespective of socio-economic and geo-physical conditions.

In order to cope up with the population pressure in higher institutes of learning and to make online quality higher education available at the door steps with accessibility to all the modern means of technology, it is imperative to develop a hierarchy of e-Learning Study Centres (HeLSCs). These HeLSCs will be established at cluster, block and district level, in the specialized institutions and at the Regional Centres with well equipped facilities to cater the online higher educational needs of different interest groups. To meet the day to day requirements, the learner can visit the eLSCs more frequently to have access to these facilities. In case they are not satisfied at the cluster level they can move to higher level for additional facilities. These centres will function as focal points and likely to play major role for imparting online higher education. Though the delivery of programmes will be mainly through electronic mode, however f2f counselling will also be made available, where necessary.

Table Hierarchy of E-Learning Study Centres (HeLSCs)

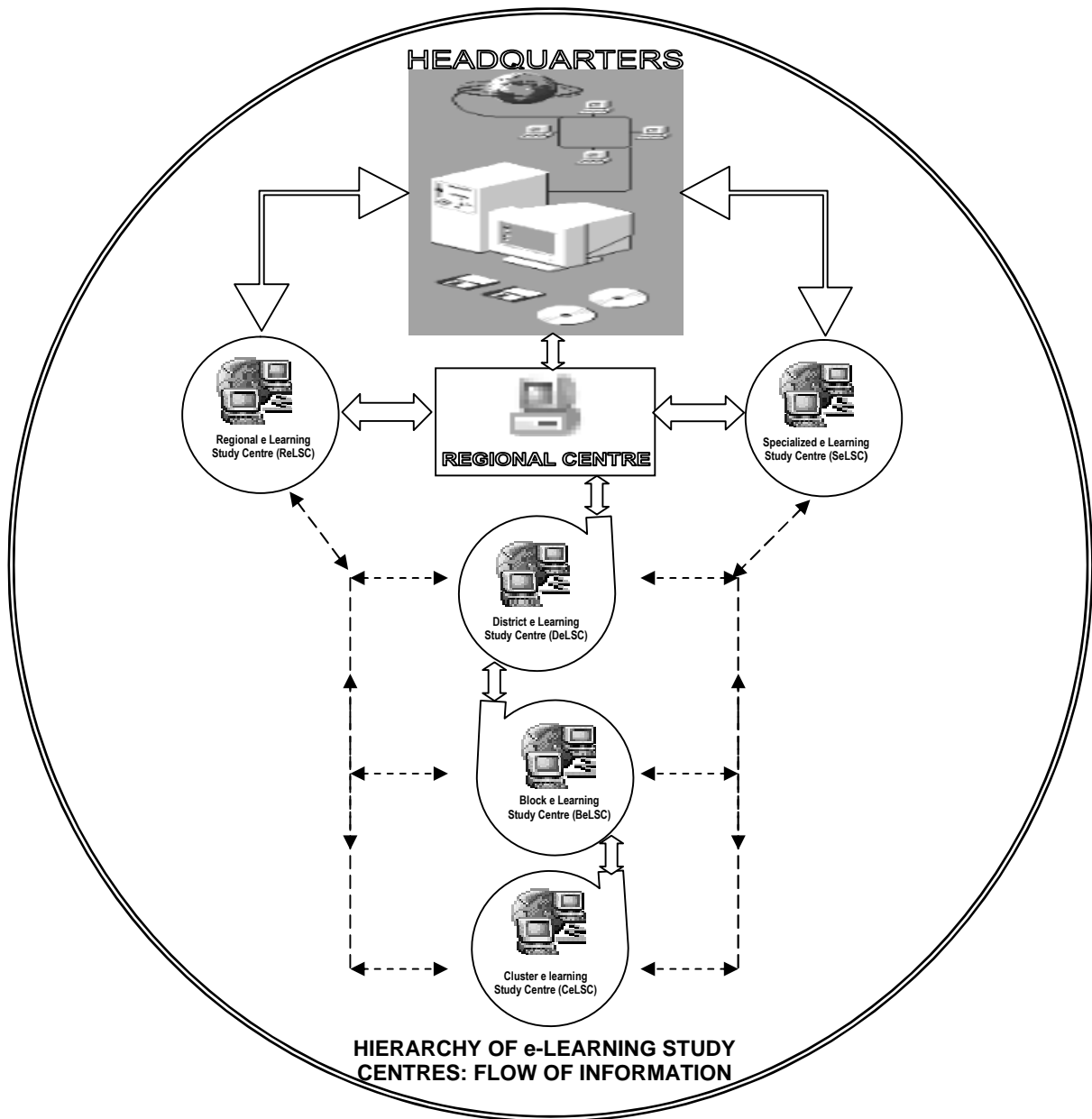
Type	Location	Institution
Cluster e- Learning Study Centres (CeLSCs)	Central Village	Intermediate College/High School
Block e- Learning Study Centre (BeLSCs)	Block Headquarters	Post Graduate College
District e- Learning Study Centre (DeLSCs)	District Headquarters	Post Graduate College
Specialised e- Learning Study Centre (SeLSCs)	Location of the Institute	Specialized Institutes
Regional e- Learning Study Centre (ReLSCs)	State Headquarters	IGNOU Regional Centres

#### **CLUSTER E- LEARNING STUDY CENTRES (CELSCS):**

Cluster e-Learning Study Centre (CeLSCs) will be established in a central village, primarily in an Intermediate College (10+2 level). The Centre will have part time multi-purpose Coordinator and skilled worker with computer background and skill in handling electronic gadgets and their repair and maintenance. They should also encourage learners to make full use of online modes of learning, primarily by interacting and chatting with the academic counselors and fellow learners through e-board, specially designed for this purpose, on the website. The formation of online learning group should also be encouraged. The Centre will provide services to 15 to 20 villages within its vicinity with a population of 15,000 to 20,000 people. However, while forming cluster the area and population of these villages will be taken into consideration. Therefore, the number of villages may vary depending on the prevailing geo- physical conditions.

A fully equipped computer lab with 10 PCs, printer, internet facilities, teleconferencing facilities, audio-video equipments and reference library will be made available at this centre. The programmes, where f2f interaction is not required can be activated at this centre. The e-

learning facilities available at this centre can be used for browsing websites for latest information, downloading various forms including student handbook and prospectus, submitting assignments, submitting re-registration forms and term end examination forms, attending counseling held through teleconferencing and interacting with the academic counsellors through electronic modes. Although the study materials, will be provided initially in print form, the students can also get material through IGNOU website. The students attached with these centres can be provided with online examination facilities.



### **BLOCK E- LEARNING STUDY CENTRE (BeLSCs):**

BeLSCs will be established at the block level in a degree/pos graduate college, mainly at block headquarters serving population of fifty thousand to 1.5 lakhs. The centre will provide SSS to entire block population and CeLSCs operating under its jurisdiction. In addition to the infrastructure available and services provided at CeLSCs, the centre should also have upgraded computer lab with at least 20 PCs, two printers and more Internet access nodes. The centre should also have panel of approved academic counsellors whose services can be utilised for online interaction as well as f2f counselling, where necessary and evaluation of assignments. The part time staffing pattern will also vary depending on the number of students. The students of CeLSC can approach to this centre for additional services, and therefore more programmes should be activated at this centre.

### **DISTRICT E-LEARNING STUDY CENTRE (DeLSCs):**

DeLSCs should be established in a postgraduate college, primarily at the district headquarters and major towns of the district. The centre will serve the population of 1.5 lakhs to 5 lakhs people and will be primarily an urbanized centre with upgraded facilities. IGNOU study centres are already in existence in most of the districts, however, these centres need to be augmented with e learning facilities. There may be one or more such centres at a particular town/district headquarters depending on the size of the district and number of students enrolled from that district/ town. Since the centre will have more academic programmes, the learners from lower level centre can also approach this centre for additional facilities, besides having online interaction with the academic counsellors. These centres should be assigned the task of monitoring the activities of block and cluster level centres.

### **SPECIALISED E-LEARNING STUDY CENTRE (SeLSC):**

SeLSC should be established in the specialized institutions/organization of higher learning including Engineering Colleges, Medical Colleges, Regional Nursing Colleges and universities to provide higher education in specialized disciplines. Although, the programme study centres of the university, for specialized programmes are also in operation in number of specialized institutions, these centres should be strengthened with e- learning facilities including computer lab with 20 PCs, two printers, internet access nodes and two way audio-video facilities. Effective use of audio-video facilities through recently launched EDUSAT will be highly beneficial for this specialized group of learners. Nonetheless, efforts should be made to encourage online teaching more effectively and frequently. Similarly, f2f counselling should also be organised at these centres for the learners, if required.

### **REGIONAL E-LEARNING STUDY CENTRE (ReLSC)**

IGNOU has initiated its virtual campus initiative by launching Advance Diploma in Information Technology (ADIT) and Bachelor of Technology in Information Technology (BIT) in collaboration with Edexcel foundation UK. Tele-Learning Centres (TLCs) were established at its selected RCs to ensure effective online learning. Though, the structure, content and methodology of the programme was highly specialized for advocating online learning, however, the programme could not get expected result mainly due to lack of orientation for online learning both at the teacher and taught level. Therefore it is suggested that existing TLCs should be upgraded and replaced with ReLSCs with effective and efficient e-learning facilities

and these centres should be equipped with latest e learning tools to cater the need of entire region. Besides providing SSS to learners the centres should also be entrusted with the responsibility of assessing local higher educational needs by conducting research studies as well as providing feedback to the top level management so that the information gap is bridged effectively. The centre will function under the direct control of already existing RC. The ReLSCs will work under the direct control and supervision of Regional Centres already in existence. These centres will monitor all the on lining learning activities of the region and will provide regular feedback to RCs.

### **FLOW OF INFORMATION AND SERVICES**

In the present scenario, education has become an industry producing human resource for the development of the nation; therefore any drift in its objective becomes impediment in the diffusion of resources, thereby influencing the growth to a great extent. It is, in this context imperative to development the hierarchy of e learning study centre in such way that the smooth flow of required information and services percolates smoothly to the bottom level of the hierarchy and vice versa. For effective and efficient delivery of programmes, through HeLSCs, the role and responsibility at each level should be categorically defined. It is therefore suggested that authentic feedback and monitoring system should be devised with a more transparent approach. A decentralized monitoring mechanism with more flexible rules and regulations will ensure continual flow of information and services. The learners as well as centres should be given appropriate access confidential control (ACC) number to have access to their accounts. However, till the system is fully developed the existing services should be continued. As soon as learners as well as teachers become comfortable with online system, greater emphasis on its use should be given for submitting application form, term end examination form, assignments, re-registration form and accessing grades cards, feedback on assignments, project synopsis and students grievances. Similarly, existing practice of transmitting student's records, grade of assignments, proposals for establishments of centres, and scrutiny bio-data of academic counselors and appointment of coordinators as well as other staff should also be carried out through electronic mode. In online teaching- learning, the role of teachers or academic counselors is multifarious as they have to respond to all the mails received on the e- board immediately, failing which will end up in reminder from the learners (Benneett and Marsh 2002). If the queries put on the e- board are pertinent, the online learners may start discussion and provide valid input to fellow learners. Therefore, committed efforts from teachers are inevitable to guide the learners in right direction, otherwise the online efforts of teaching will turn into a futile exercise.

### **TENTATIVE COST ESTIMATES**

In order to develop cost-effective network of e -learning centers, convergence of various institutions/organisations is inevitable to economize the programme delivery cost with effective SSS. An attempt has been made to look into cost dimensions for the state of Uttar Pradesh. The government has taken initiatives to provide computer labs in 10+2 level colleges, besides computers have also been provided at each panchayat in some states. Therefore the existing facilities can be exploited for cluster level e learning centres, which will not only reduce the cost of establishment to a great extent but also ensure optimum utilisation of existing resources. However, honorarium to part time multi purpose coordinator and skilled worker

can be borne by the university at Rs 800 and Rs 500 per month, besides recurring cost on postage etcetra can be met out form the usages charges. The total honorarium to be paid annually at the cluster e learning study centre would be Rs 46.25 million. The usage charges at Rs 30 per hours for use of Internet facilities will be charged from the learners. Therefore, at the cluster level a tripartite MOU will be enforced between the IGNOU, State Government and the Host Institution. However, capital investment on Teleconferencing system and provision of audio-video CD will be borne by the University. The approximate capital expenditure for installation of downlink facilities would be Rs 20,000/ (cost of disc antenna, LNBC, Receiver and Television). It is also evident to note that as per census 2001, the total number of inhabited villages in the state of Uttar Pradesh was reported 97134. Considering the population and area of these villages, the state qualifies for 3212 cluster resource centres (Jagran, 2002). Therefore, for installation of downlink facilities capital expenditure of Rs. 64.25 million would be required. It is also suggested that establishment of cluster e- level study centers can be carried out in three phases so that the instant burden of the capital expenditure can be shared.

Similarly, the number of development blocks were reported 809 in the state of Uttar Pradesh, and therefore makes the state qualifies for 809 blocks level e learning study centers. As these centers are to be established at the Institute of higher learning, the existing computer labs will therefore be utilized for the use of online distance learning. IGNOU will provide downlink facilities at these centers. The approximate expenditure for this purpose would be Rs 1.61 million. The part time Multi purpose Coordinator and skilled workers will be from among the regular staff of the host institution that will be paid honorarium of Rs 1500/ and Rs 800 per month respectively. The total annual recurring expenditure on the payment of honorarium to the part time staff at the block level would be Rs 19.57 million. The operational cost on postage etcetra will be borne by IGNOU as per actual. On the other hand, the expenditure on academic activities will depend on number of student attached to a particular centre. Since online counseling as well as f2f counseling is to be organized at this centre, therefore payment to the counselors will be made as per existing norms. The usages charges Rs 30 per hours will be charged form the students for having access to Internet facilities.

On the other hand the higher level centres are already in existence in most of the district and institute of specialized learning and these centres will function as per existing norms. Most of these centers are already equipped with downlink facilities and already having computer labs and some of them are presently used for computer programmes of the university. However, these centers will be encouraged to provide online learning facilities to IGNOU learners for which they can charge Rs 30 per hours usages charges from the learners. Though the online learning facilities are already available at the regional level, this lab can be made more effective by having more access nodes. The computer lab manned with consultant should be replaced with software engineer who should be made responsible for providing specialized services to all level of centres in order to make them operational round the clock, besides monitoring the progress of online support facilities of all level of centres. Since ReLSC will replace the Regional Computer Lab, therefore additional financial burden is not involved; nevertheless the augmentation of computer lab is essential in order to make it more viable and effective node so that online learners are benefited with proper facilities.



Table: Basic indicators and cost estimates on various items

Variables	Unit
Population of Uttar Pradesh	166052850
Area (Sq Km)	240928
No. Of Villages	97134
No of Clusters (Based on area and population)	3212
No. of Blocks	809
No. of Districts	70
Honorarium to part time staff at Block level (recurring)	19.57 Million (Rs. 2300x709x12)
Expenditure on Downlink facilities at cluster level (Rs)	64.25 million
Honorarium to part time staff at Cluster level (recurring)	46.25 Million (Rs. 1200x3212x12)
Expenditure on Downlink facilities at cluster level (Rs)	1.61 million

### DELIVERY OF PROGRAMME THROUGH E- LEARNING CENTRES: TASK AHEAD

Online learning will provide more access to learners. However, lack of orientation to online learning will make it more challenging and difficult. Some of the disadvantages of online learning include inexperience, limitations of the medium, unfamiliar with technology, slow internet connection, isolation from other students, and limited interaction. (Perris, Zhang, & Poon, 2004). The urban learners, on the other hand are familiar with the online information system to some extent, nevertheless, the use is very limited and both teacher and taught are still not comfortable with this system. Therefore the role of these e- learning centres is very important and crucial for delivery of programmes. In order to make there centres viable and effective unit of programme delivery, the following points required to be addressed more carefully.

- Orientation/training of teaching faculty, administrators, part time coordinator and support staff and academic counselors to make them acquainted with online teaching learning procedures.
- Technical manpower for repair and maintenance of equipments/ electronic gadgets such as computer, disc antenna, invertors/UPS etc. should be made available at these centres.
- In order to generate interest among learners immediate response to their queries/questions raised online should be ensured by academic counsellors/administrators.
- The detailed time schedule with regards to functioning of these centres as well as students related information should be reflected at the website. Time to time updating of website is also essential.
- To ensure smooth power supply at these centres, alternative provision should be made available. Power back up system through UPS/Invertors/ generator should be made available so that learners visiting to these centres are not denied access to internet and other facilities
- Drop boxes should also be placed at all the level of centres which can be used by learners for submitting assignments and once the assignments are evaluated the same can be dropped in the boxes placed for this purpose so that students can collected them in time. Therefore, drop boxes should be checked and cleared on regular basis

- Submission of online assignments should be encouraged and feedback on the assignments should be ensured through online.
- All the level of e-learning centres should provide regular feedback to the regional centres on all aspects of programme delivery and RCs should also respond immediately.
- Time to time monitoring and review of the system should also be ensured.

### CONCLUDING REMARKS

The access to information through the World Wide Web (WWW) has increased enormously over the years and higher education is no longer beyond its preview. Networking and convergence of institutions and organisations imparting higher education can provide viable alternative to this phenomenon by sharing resources. The concepts of access, equity, relevance and quality through online learning can be operationalised only if the system is both effective and efficient. Hence, total networking of the system for effective management, has become imperative. The shift can occur only through a systemic approach to change as also the development of existing human resources through proper orientation to adapt to the new approach. Therefore, networking the system through information and communication technology will not only reduce the operational cost to a great extent, particularly in long run, but also bring revolution in the field of higher education in a developing country like India. The suggested model of e-learning will provide viable alternative and can also be replicated in the countries having similar socio-economic and geo-political characteristics. Nonetheless, the success of the model depends on the concentrated efforts and commitment at all level.

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