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**E-Learning Tools and Technologies for Rural Development
Community with special reference to training: Experiences of
National Institute of Rural Development**

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Abstract

The paper introduces various vital aspects of DLE, highlighting e-learning philosophy, tools and selection criteria for e-learning solutions. It presents a brief account of National Institute of Rural Development (NIRD) initiatives that have been taken using ICT tools by for the training of personnel involved in rural development programmes of central and state governments.

1. Introduction

E-learning is a combination of learning services and technology to provide high value integrated learning, anytime, anyplace. It is being presented in the market place as the next evolution of the training and education industry and the next phase in the digital revolution. It is about a new blend of resources, interactivity, performance support and structured learning activities.. This methodology makes use of various technologies to enhance or transform a learning process, achieving real business and educational value, and reaching a large, more diverse learner population with minimal expenditure. The new practice of education and training has developed into the concept of e-learning environment. Due to the introduction of advanced technology e-learning is now the top most requirements

CISCO defines e-learning as “the overarching umbrella that encompasses education, information, communication, training, knowledge management and performance management. It is the web-enabled system that makes information and knowledge accessible to those who need it, when they need-anytime, anywhere”.

The effectiveness of any training depends on the methods and techniques used for conveying the content. Besides, the traditional method, namely, lecture, there are a number of other methods like demonstrations, group discussions, panel discussions etc. which help to improve the quality of training. With the advent of computers and Internet with Information technology, the training programmes could reach the remotest corner of the country. Web based training can be explored for imparting training up to block level/panchayat levels in cost economic way.

2. E-Learning Philosophies

- It facilitates online delivery of information, communication, education and training
- Traditional learning modes-classroom experiences, textbook study, CD-ROM, and traditional computer based training can be used effectively with the available e-learning tools.

- E-learning will not replace the classroom setting, but enhances it, taking advantage of new content and delivery technologies to enable learning*
- Retention is depend upon the type of content and mode of delivery
- Better the match of content and delivery vehicle to a learner's style, the greater the retention, and therefore the greater the results.

3. Why E-learning?

There are many business pressures behind the shift from traditional methods of training to e-learning. One of the most notable is the growth of the knowledge economy, which is driving the need for skilled workers. The increasing mobility of workers and the move to home-based work are also driving the trend from classroom-based "just-in-case" learning to "just-enough, just-in-time" e-learning. This trend is accelerated by technological developments. More over the competitive pressure to use working capital more efficiently makes the cost saving that e-learning offers all the more attractive. These can be seen both in terms of "hard" savings, such as reduced travel expense, and in "soft" economies, such as the higher retention rates that come with more efficient, blended approaches in areas like professional development.

Cost savings and higher productivity are the reasons most frequently cited for selecting e-learning solutions. There are other very good reasons as well, notably manageability, flexibility, speed and learning effectiveness. E-learning can be delivered anywhere, any time, and can provide flexible models, such as just-in-time learning

4. Technologies and Tools for E-learning

E-learning set up in the context of training in the country must encompass the minimum requirements as given below:

4.1 Content Development

Courseware must be prepared using simple authoring tools such as HTML/XML. The course content may include text only materials such as theme papers, reports or conference/journal papers to PPT presentations or even live recordings of classroom teaching or lectures delivered in conferences by attending or through videoconferencing mode.

The training divisions have to seriously engage in concrete action plans to record and preserve the class lectures and other output generated by guest faculty. Rural development functionaries cannot be trained in a unitary mode because of differences in language and variations in local Panchayati Raj (PR) Acts and their level of course content will vary from state to state. The rural development experts should take care in designing developing and maintenance of various databases

4.2 Content serving

The content created as per the earlier step must be either offered in CDs, loaded in standalone PCs for serving through Intranet/Internet. Care should be taken to keep materials in such formats occupying less space. Collaborative sharing of information resources can be explored.

4.3 Content Access

Learners access the courseware through standard Web browsers and Multimedia Players. Many institutions and agencies are engaged in training in the form of short-term courses, workshops, tutorials, etc. Most of these courses produce a printed volume. The institutions organizing such courses and the funding agencies sponsoring the same should encourage preparing the course materials in electronic form to distribute it to participants and provide network access to these resources.

4.4 Databases

Database of different lectures and indexes may be prepared for faster search and access to select materials. The database must also hold the profiles of teachers/guest faculties and learners to evolve personalized learning. The

database should be developed in regional languages and more emphasis should be given on locally relevant information

The following variables have to be taken into consideration while selecting the technology for a given training application. It plays an important role in planning and formulating a courseware for a specific group:

1. Nature of the Learning
2. Nature of the course
3. Availability of existing technology
4. Availability of course content
5. Management/staff/trainee support for technology use
6. Nature of the learning environment
7. How will course be maintained and updated

5. Selection of Technology

There are many technologies that can be used to support distance training. Some are used as supplements to traditional classroom environments and others are used as complete replacements for traditional lecture-based courses. However we have to analyse the technologies that can be applied effectively in the field of training for achieving better and faster learning and providing need based short-term courses/seminars/workshops etc. Picking up the appropriate technology plays an important role while planning and formulating a courseware for a specific group.

The following are some of the technologies suits for the successful implementation of e-learning technologies in training.

1. Video:

Videotape has a significant impact in the context of training. It is the media using for storing and producing during the training programmes.. Videotape delivery is preferred when the viewing audience wants the convenience of watching programs at their convenience rather than a schedule time. The Centre on Rural Documentation of NIRD is having the Video collection. At present the CORD is having a total of 140 Video cassettes on women development, panchayati raj, local self government, employment, watershed management etc. and made

available to the course directors to use in the training programme as a medium of instruction. A brief annotation is provided for each video tape along with details of the tape like language, producer, duration etc.

2. *Satellite Teleconferencing:*

The most common form of teleconferencing used today is satellite teleconferencing, which involve one-way television broad cast and two-way audio (telephone) links. Participants watch the presentation on a television and can ask questions via microphone or telephone handsets. Interaction usually takes the form of questions. It is also possible to equip each location with a fax machine so that questions and information can be sent in written/printed form. Satellite teleconferences tend to be one-time events devoted to a specific topic or issue (e.g. latest research findings)

3. *Digital Videoconferencing:*

It provides more interactive capability because it involves two way audio and video transmissions between each site. It is relatively inexpensive and easy to implement. Video conferencing is now widely used by most organizations like National Institute of Rural Development (NIRD), Hyderabad and National Institute of Extension Management (MANAGE), Hyderabad for arranging meetings as well as training. The major benefit is reduced travel time and cost. The initial cost of equipment and the ongoing telecommunication costs are easily justified by reducing against huge budgets. Through the Power Point Presentations of resource persons who scattered geographically can be made available for the trainers. This ensures the quality of training and guarantee of not missing the lectures of experts who cannot attend physically. This service is already introduced in NIRD and MANAGE

Computer Conferencing:

It provides either asynchronous (delayed) or synchronous (real time) interaction. Asynchronous participants read and respond to messages whenever they sign on to the system, in synchronous interaction participants send and receive messages with others on the system at that moment. Asynchronous Conferencing is preferred by most, because it

allows people to participate in a discussion according to their own schedule.

4. *Audio Graphics:*

In one specialized type of computer conferencing system specially designed for instructional purposes, an audiographic system uses a personal computer to transmit audio and graphic images simultaneously. Each participant has his/her own personal computer running the audiographic software. Audiographics system is used for a wide variety of technical training programmes, when the subject matter involves material that is visual in nature.

5. *Multimedia:*

It includes text, graphics, sound, video and animation all together. Multimedia technology has drastically simplified the development process for all media and made it possible for anyone with the right hardware and software to develop multimedia presentations that can be run inexpensive and commonly available personal computers. Interactive multimedia implies two very important capabilities

6. *Internet and the Web:*

The Internet and the web have strongly influenced the training world. An important function of Internet is news groups and listservs and discussion groups. All these functions provide means for broadcasting messages to people. It effectively works like electronic newsletters in which any one can provide information. People use the Internet informally for learning by joining e-groups on topics of interest and sharing ideas with people. The web provides access to thousands of online magazines, online libraries, online help, discussion groups etc.

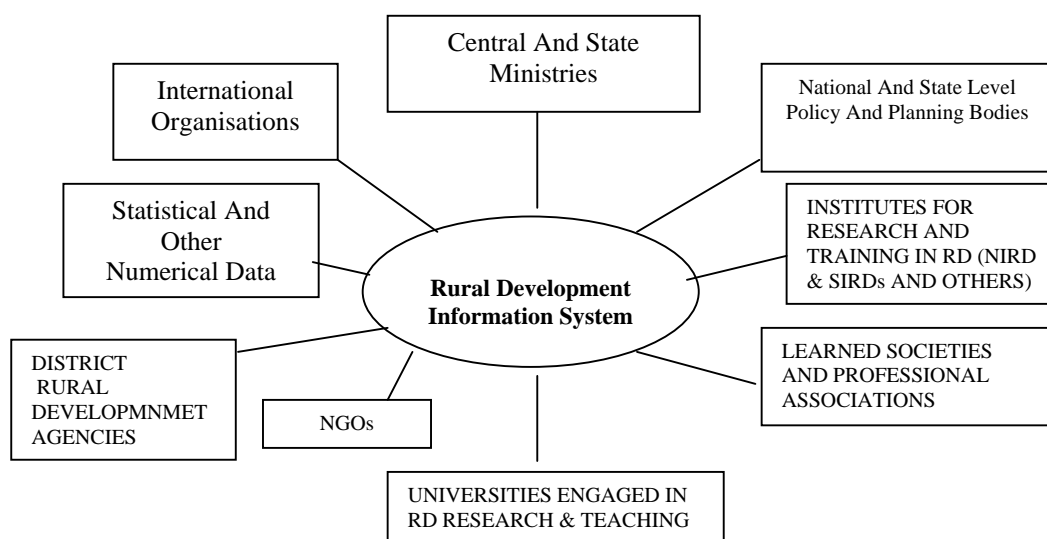
6. Attempts being made by NIRD

The National Institute of Rural Development is the country's apex body for undertaking training, research, action research and consultancy functions in the rural development sector. It works as an autonomous organization, supported by the Ministry of Rural Development, Government of India.

NIRD established in 1958, emerged over the years as a center of excellence for research and training in rural development. A key player in the Indian rural development scenario, NIRD also serves as a consultant of international repute in the field of socio-economic development. Research and Consultancy studies are undertaken ranging from sustainable economic development, women's development to human resource development, organizational development and non-farm sector besides natural resources management, planning and evaluation.

In addition, NIRD's forte is curriculum development, preparation of training manuals and training guidelines. Over 180 training programmes are conducted annually benefiting over 3000 Indian participants besides 5-6 international programmes attracting 25-30 participants each per year from several developing countries from Africa, Asia-Pacific, Eastern Europe, Latin America and Caribbean. For more details please visit www.nird.org.in

Under the 71st Constitutional Amendment the three tiers of panchayats have to elect nearly 35 lakh representatives once in every five years. These representatives have to be well informed and trained on various aspects of rural development. Additionally the other stakeholders in various policy making bodies, research and training institutions, NGOs and others need also be trained periodically. Naturally, these vast user base, scattered throughout the country, can be covered only by using web technologies.



7. Rural Development Information System in India

The need for imparting training to the development functionaries has been recognized from the first five-year plan and a number of training institutions established at the central (NIRD), State Institutes of Rural Development (SIRDs) at the state level and Extension Training Centers (ETCs) at regional levels. NIRD has taken up the task of conducting training programmes in order to fulfill the objectives of implementation of multifarious and multidimensional Rural Development programmes efficiently and effectively and also to reach the benefits of the programmes to the target groups. It is not possible to impart training through class room mode to all the functionaries, especially for grassroots level Panchayati Raj (PR) functionaries, and felt that the training should be decentralized at district, block and village level. In this context NIRD proposed a mode of Distance Learning (DE) under 10th plan which is most suited for wider coverage and also to facilitate imparting training in local language with local content.

In order to fulfill the objective of widening the reach of coverage of training, NIRD is envisaged to develop a distance learning component in

training programmes under the 10th plan proposals. The proposed distance learning mode can contain the introductory print material, some components of audio-visual material, video conference or “one-way-video, two-way Audio”, correspondence by emails, field visits by groups and if need be a rap-up session at the local level by personal contact. This mode would have the Internet advantage of enabling the teaching and to communicate with all 25 State Institutes for Rural Development (SIRDs), as well as 88 Extension Training Centres (ETCs), if need be in one single planned interaction programme. Minimum 200 sessions would be needed in a year, if four interactive training sessions are proposed to conduct in a week. It may be seen that the total number of participants spread over 25 SIRDs @ 40 at each node will mean two lakh persons in a year. If in the second phase, the facility is extended to 88 ETCs, the total number of people trained could go up to as high as 8 lakhs persons in a year. The operating cost of Rs. 85 lakh per year will work out to a cost of Rs. 11 per participant on an average. Thus, this period for “one-way-video”, two-way-audio” training facility will be highly cost-effective and will enable reaching out to larger number of participants.

NIRD attaches top priority for utilization of the proposed facility as a component for distance education. The representatives of SIRDs and ETCs will be specifically trained in the phased manner in management of the learning center, responding to the operational parts of the equipment as well as manpower management in order to help free and effective participation. The software design and production will be oriented towards the specific programme being planned for distance learning. In view of the expertise of NIRD, it is repeatedly possible to develop training curriculum as well as training inputs in various areas including watershed management, ground water development, common property resources, village and cottage industries empowerment of Gram Sabha could be the pivotal programmes cutting across different sectors.

8. Conclusion

The development of online education is not only a matter of economic and social change, but also of access. The increasing use of Internet has opened the door to global market, where geographic barriers for many training

products have been erased. The educational deficiencies have brought the organization to the edge of knowledge gap. Academic and corporate environment must be redesigned to adequately prepare people to function in an **information society**.

Technology is necessary to enhance speed and quality of learning to cope with the new challenges of information explosion and thereby to meet changing needs of the users. Situation today demands a learner centered flexible technology driven system which necessitates suitable alliance for cost sharing economy, learning resource development, establishment of learners support centers and creation and maintaining necessary infrastructure for the course delivery. Success in online/classroom teaching and learning environment will only come with clear and well-defined instructional objectives, through preparation of content and an infrastructure, which offer support for both participation and instructions. The organizations like NIRD may give a new paradigm for their training activities. NIRD is conducting about 180 training programmes in a calendar year. If they adopt e-learning technologies in their training programmes it would be cost-effective.

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