ICT Embedded Higher Education Model for Rural Areas

Vibha Thakur
Asst. Prof.,
Department of Computer Science,
Career College, Bhopal

Received August 15, 2017 Accepted Sept. 10, 2017

ABSTRACT *Right to Higher Education is the primary right of every citizen of India, whether a learner resides in a high profile society or in a faraway not so developed secluded village, according to the Article 45 of Indian Constitution the basic elementary Higher Education must be offered to all the students up to the age of fourteen years. For high quality Higher Education throughout India there must be some nation-wide network, which offers equal quality Higher Education to all students, including the student from the rural areas and villages. The one and only simple solution to this is Web Based Student Oriented E-Learning. In this paper, I have proposed a model 'ICT Embedded Higher Education Model for Rural Areas' to offer access for Higher Education in rural area.*

Keywords: *E-Learning, Higher Education, ICT Embedded, Right to Higher Education, Rural area.*

1 - Introduction

As per the 2011 census, 72.2% of the population lives in rural areas about 638,000 villages and the remaining 27.8% lives in more than 5,100 towns and over 380 urban agglomerations. Among all the above mentioned Higher Education techniques adequate in rural India have to change according to the 21st Century. The main aim of this study is to elevate the Scope, Purpose and Methodology adopted for computer Higher Education in Rural India. Information and Communication Technology (ICT) is one of the rapid improvement technological fields in the global society [13]. Among the developing countries India reached a significant position in improvement of ICTs. Particularly in the field of Higher Education its improvement is tremendous. There is no doubt in the near future's improvement will based on ICTs. Both Central and State Governments and NGOs are allocating huge amount for the improvement of ICTs and rural Higher Education. However the level of improvement in accessibility of ICTs in rural Colleges did not reached the expected level. This paper gives ideas to improve the rural Higher Education through ICTs, especially the computer related technologies [6]. Also offer some suggestions for effective implementation of the national policy for ICT in Higher Education in rural areas.

2 - ICT Embedded E-Learning

It deals with formal, non-formal and informal learning, covering traditional Higher Education settings for Colleges and Higher Education and adult Higher Education. Last, but not least, this ICT potential for innovation must be realized and accompanied by the necessary pedagogical and institutional change. Hence, the paradigm underpinning ICT Embedded E-Learning for learning should entail a holistic transformational shift towards connecting learning organizations and processes, being learner's motivation, mindset and competencies crucial aspects, such as connecting the realities of students' lives and their experience of College. These principles are reflected in the proposed conceptualization of 'Creative Classrooms', which depicts the systemic approach to sustainable implementation and progressive up-scaling of ICT Embedded E-Learning innovation for learning [11]. It also conceives innovative pedagogies at the core of CCR innovative, open learning environments. As documented in the literature and existing cases from real life Higher Educational settings technology is just the means towards pedagogical change, driven by participatory practices and approaches that support innovative teaching and creative learning. Innovative teaching is any kind of teaching which addresses creativity and applies it to methods and contents. It includes both the processes of teaching for creativity and teaching creatively: the former refers to any teaching that tries to develop students' own creative thinking and performance, whereas the latter refers to the implementation of innovative teaching practices to make learning more interesting and effective. Creative learning refers to the possibility for students to develop their thinking skills and learn in a new, creative way. As Ferrari et al. highlight, in the Higher Educational context, creativity can even be conceptualized as a transversal and cross-curricular skill which everyone can develop [4]. In this perspective, Higher Educational actors have the power to unlock (but also inhibit) the creative and innovative potential of the young. However, they require substantial support, especially in terms of training, revision of curricula and assessment, and institutional change [10]. These tools can represent

information in a variety of modes that enable students to make changes, try out ideas and approaches to problem solving. Both students and teachers need the opportunity to engage, play and become familiar with the distinctive contributions that ICT can make to their creative practices, which other media and tools do not offer. Attention and efforts should thus focus on fostering teachers' preparation for pedagogy for creativity. Ensuring the necessary accessibility and flexibility can be a challenge for both teachers and Colleges due to current models of resources, timetables, curriculum, and assessment requirements, which can inhibit students' engagement with creative processes and lead to a superficial or fragmented focus on products. Innovativeness of different pedagogical practices only emerges when teachers use ICT in their efforts to organize newer and improved forms of open-ended, collaborative, and extended learning activities [9]. Human factors like vision and expertise as well as learning materials and infrastructures are decisive success factors concerning the pedagogical use of ICT and, as such, needs to be effectively addressed by policy makers and Higher Educational authorities. The focus is not on future scenarios but on what is possible in today's practices, taking advantage of existing technologies. Creative Classrooms thus can be seen as complex "eco-systems" that evolve over the time, mainly depending on the context and the culture to which they pertain. The proposed multi-dimensional concept for CCR puts emphasis on the holistic and systemic nature of these environments, their intended learning outcomes, and their pedagogical, technological, and organizational characteristics that favor innovation.

A holistic approach to learning: ICT enabled lifelong learning thinking about the future of learning in the knowledge-based society needs to be holistic as learning will become a lifelong activity that cuts across different learning generations and life spheres such as private, public and work. The focus should therefore be not only on traditional formal learning institutions such as Colleges and universities; and existing training organizations and training practices for both the unemployed and employed, but it should also embrace other forms of adult Higher Education, informal learning and also learning to use ICT [5]. The European Commission has already identified "digital competence" as a "key competence" that individuals need to acquire for personal improvement, active citizenship, social inclusion and employment. This applies not only to students but also to teachers and training staff. The trends and challenges are affecting future learning in the knowledge-based society. There are a number of trends and challenges that are expected to shape future learning in the knowledge-based society [1]. Some of the technological trends, in particular Information Society Technology (IST) trends are:

- Broadband internet access that is becoming widespread;
- Weblogging, Short Message Service (SMS) and Multimedia Message Service (MMS) that are becoming major sources for personalization of information and for connecting with others such as friends and now increasingly also friends of friends (social software);
- The rise of podcasting (both audio and video) that offers opportunities for mobile learning via portable digital media players;
- The availability and use of open source software and open source content (e.g. Wikipedia), and the unlimited and cheap storage of digital information;
- The rise of new internet-native content players that experiment with content services that have clear Higher Educational implications. Other major IST-related technological trends are infrastructure convergence integrating broadcast, phone, data and other networks, the rise of alternative wireless technologies Wifi, content/media convergence newspapers, music, TV, blogs, multi-modal devices like new mobile phones: pictures, email, movies, play radio and phone [3]. Last but not least, there is the European vision of the future information society labeled as "Ambient intelligence" that encompasses the above by connecting humans, machines and sensors in heterogeneous and ubiquitous networks and by making them user-friendly and people-centric.

3 - Need for ICT Embedded Higher Education in Rural Areas

The Indian Higher Education System is one of the largest in world. Planning and Management of ICT based Higher Education has primarily the matter of State but Central Government in this area [12]. In order to improve the quality and effective ICT Higher Education, planning and management is needed in-time and in a format conforms to the requirement of the user operating agencies at various administrative hierarchies. The complexities of the multi-level decision making process and control mechanism increases due to wide geographical institutional network representing variety of College locations and endowment. Further due to the large variation in College structures, endowment and availability of teaching learning resources, the matter become more complicated. ICTs make possible asynchronous learning, or learning characterized by a time lag between the delivery of instruction and its reception by students. Additionally, certain types of

ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed students' synchronous learning [7]. Access to remote learning resources feature help teachers and students no longer have to rely solely on printed books and other materials in physical media housed in libraries and available in limited quantities for their Higher Educational needs. This is particularly significant for many Colleges in developing countries, and even some in developed countries, that have limited and outdated library resources.

3.1 - Involvement of NIRD

The National Institute of Rural Improvement is an apex body in the country for Research, Training and Action Research in the field of rural improvement sector. It works as an autonomous organization, supported by Ministry of Rural Improvement, Government of India. It established in 1958, emerged as Centre of Excellence for Research and Training in the Rural Improvement. In addition to this, it also involves in curriculum improvement, preparation of training manuals and training guidelines [2]. The distance learning mode can contain the introductory print material, some components of audio video materials, two ways video conferencing technologies, such initiatives have been taken by using ICT tools for the training and improvement in the field of rural Higher Education.

3.2 - E-Learning Centres

It will create an E-Learning programme for creating literacy campaign in the rural areas and it is a classic example of the effective reach of technology in helping towards the improvement of rural India. An E-Learning centre is a place where the people are taught how to read and write by using visual and audio content. The ICT based E-Learning system play a vital role in enhancing on line Higher Education for social and economic change in rural society. E-Learning can be delivered anywhere, anytime, and can offer flexible models, such as just-in-time learning.

4 - Proposed Model for ICT Embedded Higher Education for Rural Areas

In the proposed model we have considered all these points and for technical connection we are using RKM (Rural Kiosk Machine) which will offer physical communication between the ICT - RDD (Rural Improvement Department) and Rural Community [8]. Then these RKM's will be connected to Different Departments, by using area wise wireless connection according to local needs. Initially people will be trained by ICT –RDD in the Community Training Centres i.e. ICT-TC and then people itself will be able to use RKM for getting the information.

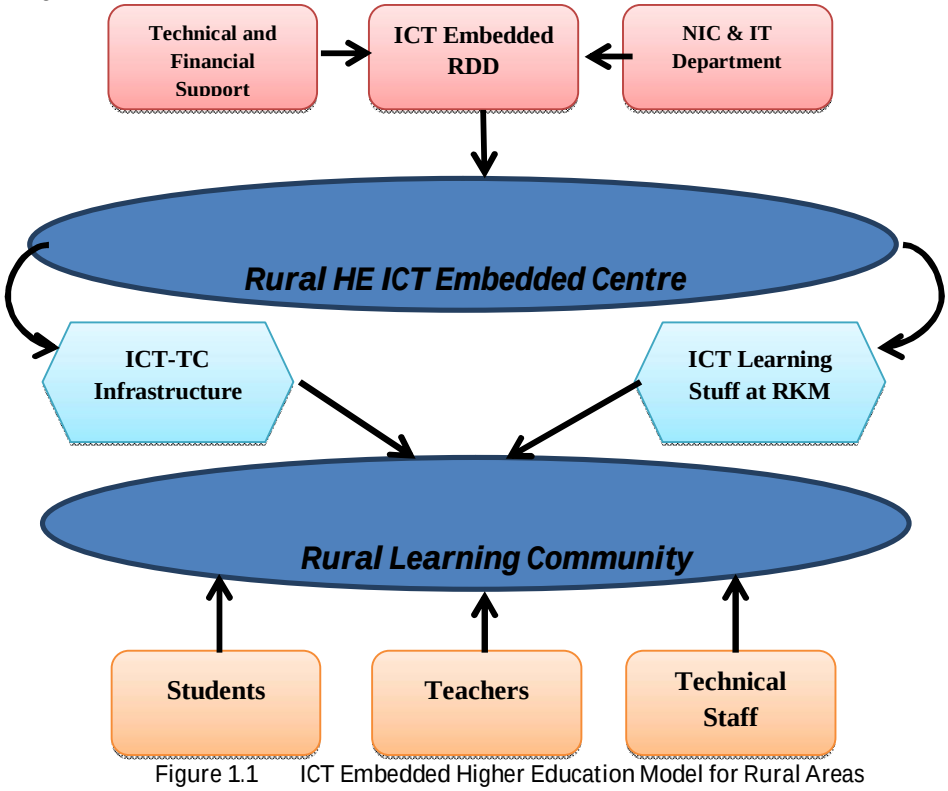

Figure 1.1 ICT Embedded Higher Education Model for Rural Areas

- *Rural HE ICT Embedded Centre:*
  Rural College building will act as a Rural Community Centre which will hold RKM and facilitate the people for 24 hours. It will also work as ICT-TC for discussion and trainings in the evening timings for the rural community. ICT facilitator of that ICT-RDD department will help the people that how to use the RKM and how to get information from that machine directly.

- *Rural Kiosk Machine ICT Learning Stuff at RKM:*
  Rural Kiosk Machine will contain the information in local languages. Most of the Indian peoples speak Hindi language as an official language. English is rarely been spoken in rural areas. RKM depicts stored information in textual, audio and video information, livestock, market prices, weather forecast, health etc. This machine will consist of user friendly interface in local language having all the required information needed for the Rural Community. RKM installation will be sponsored by Ministry of IT. These machines are connected directly through wireless connection to the ICT -RDD. All the RKM Machines will be operated centrally through ICT -RDD Department.

- *ICT- Training Centres ICT-TC Infrastructure:*
  ICT- RDD department will responsible for providing basic Higher Education for use of RKM for each faction of rural area by establishing ICT-Training Centre at each College in every village even though it is very small. If College is not available in the village then RKM should be placed at well-known secured central place of the village. These centres will offer Higher Education on how to get information from the RKMs on almost every rural aspect.

- *ICT- Rural Improvement Department (ICT Embedded RDD):*
  This department will get latest information from IT and other related departments and will update the RKM's and will offer training to ICT instructors for the latest updates at rural community centre. The purpose and theme of the ICT Rural Improvement Department is the same with an amendment that it will work only for the improvement of the 70% population which need more attention and care and can be more productive for the improvement of country, but its cyclic process and hope it will accelerate rapidly with the passage of time.

5 - Conclusion

ICT has occupied every aspect of our life and playing a key role in overall improvement of nation. India is a developing country and still trying to achieve 100% literacy and to offer access of Higher Education in rural areas. In this paper I have proposed a model 'ICT Embedded Higher Education Model for Rural Areas' to offer access for Higher Education in rural areas. This Model will be beneficial and can play a key role to promote Higher Education in rural areas.

References:

[1] Bielaczyc, K., & Collins, A. (1999), "Learning communities in classrooms: A reconceptualization of educational practice", in C. M. Reigeluth (Ed.), Instructional design theories and models: A new paradigm of instructional theory, Vol. 2, pp. 188-228.

[2] Mishra, S., (2007), "The E-Learning Bandwagon: Politics, Policies and Pedagogy".

[3] Nada K. Kakabadse, Alexander Kouzmin and Andrew Kakabadse, (2001), "From Tacit Knowledge to Knowledge Management: Leveraging Invisible Assets", Knowledge and Process Management Vol. 8, No. 3, pp 137–154.

[4] Naidu, S. & Oliver, M., (1996), "Computer supported collaborative problem-based learning (CSC-PBL): An instructional design architecture for virtual learning in nursing education", Journal of Distance Education, Vol. 11, No. 2, pp. 1-22.

[5] Naidu, S. & Oliver, M., (1999), "Critical incident-based computer supported collaborative learning. Instructional", Journal of Distance Education, Vol. 11, No. 2, pp. 1-22.

[6] Roy, Niraj Kumar, (2012), "ICT –Enabled Rural Education in India", International Journal of Information and Education Technology, Vol. 2, No. 5.

[7] George S., & Labas, H., (2008), "E-learning standards as a basis for contextual forums design", Computers in Human Behavior, Vol. 24, pp. 138-152.

[8] Sattar, Kashif, (2007), "A sustainable model for use of ICTs in rural Pakistan", International Journal of Education and Development using Information and Communication Technology, Vol. 3, No. 2, pp. 116-124.

[9] Sharma, Dhirendra and Singh, Vikram, (2009), "ICT in Universities of the Western Himalayan Region in India: Status, Performance- An Assessment", IJCSI International Journal of Computer Science Issues, Vol. 6, No. 2.

[10] Grameen Sanchar Seva Organization (GRASSO), (2001), http://www.grasso.in/, established in

[11] e-choupal, (2006), http://www.echoupal.com

[12] Kaushal S. and Patra S. S., (2009), "Elementary Education in Bihar: Some Reflection of DISE Data" pp. 3-4.http://www.dise.in/Downloads/Use%20of%20Dise%20Data/Savita%20Kaushal%20&%20%20Sudhanshu%20S.%20Patra.pdf

[13] Stiemen. J., (2007), "ICT for Development and Education", pp. 16-21, http://www.iicd.org/files/icts-for-education.pdf