ICT- A Conceptual Framework with Special Reference to Various Initiatives by Government and Private Organisations

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Abstract

Importance of education in almost all walks of life has increased with the support of information and communication technologies (ICT). During the past 20 years, the use of ICT has fundamentally changed the working of education. In the current environment-conscious world, the importance of education and acceptability of ICT as a social necessity has been increasing. Social acceptability of information and communication tools is necessary to improve the mobility in the society and increase the pitch for equity and social justice. Education as a qualitative development is not confined within the classroom structure. The modern tools of ICT such as eLearning and online practice of learning and getting information are much sought after by the students as well as by the institutions. The government is spending a lot of money on ICT. In the higher education sector, the National Mission on Education is emphasizing on the role of ICT in increasing the enrolment ratio in higher education. School education in India has a problem of high dropout rate and we need to work on how to decrease this rate. Similarly, in the field of higher education, we need to increase the number of students. Therefore, if we make our learning more engaging with the use of ICT, it can completely change how our education system works. Also, we should examine the challenges of cost-factor and availability of trained teachers in the process of dissemination of education with the help of ICT. This paper tries to examine the role of ICT initiatives taken by Government of India and adopts a case study approach to research by trying to analyse the company oracles initiatives with respect to using ICT in educational field.

Keywords: ICT, Information and communication tools, National mission on Education, Cost-Factor.

Introduction

India is developing as a knowledge economy and it cannot function without the support of ICT. The gap between demand and supply of higher education has necessitated the governments and institutions to formulate the policies for the better use of ICT. And, in order to bridge the gap, it is necessary to evolve the cooperation between the public and private sectors. The education ICT policy should identify specific ways in which the application of ICT will enhance the educational capacity and the capability of higher education institutions. According to a recent study, innovations such as using Twitter to send messages are really helpful in disseminating education. In a similar fashion, the use of YouTube in sharing video information will go a long way in disseminating education. During the last decade, higher education has gained importance in India's changing policy landscape as the government realizes that India's strength lies in education.

1

Government's Imitative

The government has taken many initiatives to promote education using ICT over past few decades;

Delivery of content

GyanDarshan

1. Launched in 2000, GyanDarshan is a bouquet of channels that broadcasts educational programs for school kids, university students, and adults
2. Courses are contributed by IGNOU, UGC CEC, IITs etc

GyanVani

1. It is a bouquet of FM radio channels which broadcast programs contributed by institutions such as IGNOU and IITs

UGC Countrywide Classroom

1. Under the country wide classroom initiative, education programs are telecast on GyanDarshan and Doordarshan's National Channel (DD1) everyday
2. Till date, more than 10,000 programs have been telecast on subjects such as Arts and Social Sciences

E-Gyankosh

1. It is a knowledge repository launched by IGNOU in 2005 which aims at storing and preserving digital learning resources. Almost 95% of IGNOU's printed material has been digitised and uploaded on the repository

National Programme for Technology Enhanced Learning

1. Approved in 2001, National Programme for Technology Enhanced Learning (NPTEL) is a joint initiative of IITs and IISc
2. As a part of its first phase, digital course content for 129 engineering/science courses has been developed and uploaded on youtube

Enabling access to resources

E-journal consortia

1. AICTE – Indian National Digital Library in Engineering & Technology (AICTE – INDEST) is a consortium set up by the Ministry of Human Resource to enhance greater access and generate annual savings in access of bibliographic databases
2. UGC has also launched its Digital Library Consortium to provide access to peer reviewed journals and bibliographic databases covering subjects such as arts, humanities, and sciences

Networking of higher education institutions

1. Education and Research Network (ERNET) promoted by the Department of Information Technology, Government of India, provides communication infrastructure and services to academic research institutions in India
2. It is undertaking networking projects such as AICTE-Net, ICAR-Net and UGC-Infonet to provide internet and intranet facilities

2

The Landmark "National Mission on Education through ICT"

In 2009 National Mission on Education through ICT was launched by the government to harness ICT's potential to make a difference

1. The National Mission on Education through ICT is an INR 50 billion, centrally sponsored scheme submitted by the Ministry of HRD and approved by the Cabinet Committee on Economic Affairs (CCEA)
2. The Mission envisions to cater to the learning needs of 500 million Indians
3. Some of the key objectives of the Mission include:
4. Availability of e-knowledge content free of cost to Indians
5. Development of knowledge modules to take care of personalised needs of learners
6. Providing support for the creation of virtual technological universities
7. Building connectivity and knowledge network among and within institutions of higher learning in the country
8. Standardization and quality assurance of contents to make them world class
9. Spreading digital literacy for teacher empowerment
10. Certification of competencies of the human resources acquired either through formal or non-formal means

The Mission has planned a variety of initiatives aimed at developing and standardising digital content for Indian higher education segment

Scaling up Sakshat portal

a) The Mission intends to scale up the existing Sakshat portal to take care of the needs of entire learning community.
b) It will also act as a human resource database aiding education related decision making.

Generation of new digital content

a) It also plans to generate new online course content for UG, PG and Doctoral education.
b) Efforts are already underway to prepare course content for 130 courses (Includes UG and PG courses).

Virtual Technical University (VTU)

a) The Mission envisages creation of a VTU to enable training of UG/PG students along with new teachers.
b) It will focus on science, technology, management and other related areas.

Quality assurance

a) It is also planning to set up national resource centers for standardisation and quality assurance of e-content for College and University segment and Engineering and Technology segment.

Examples of companies providing ICT infrastructure

1. Hughes Net

It a network of 50 classrooms in 34 cities equipped with the technology to receive satellite signals from studios located in educational institutes. Examples of institutes using Hughes Net infrastructure include IIMs, IITs and XLRI

2. Reliance World

Part of Reliance ADAG, Reliance World is a chain of cyber cafes that has tied up with testing companies to offer testing centers (e.g. TOEFL)

3. Oracle

Provides enterprise-strength solutions that help educational institutes in improving performance management, reporting, compliance, efficiency and recruiting

Oracle in Education

For more than a decade, Oracle has played a key role in helping students develop ICT skills through the Oracle Academy and ThinkQuest. Today, these state-of-the-art technology programs support more than 1.2 million students in 95 countries at an annual in-kind grant value of US$2 billion.

Oracle Think Quest

1. The Oracle Education Foundation, a nonprofit organization funded by Oracle, aims to help students develop the skills needed for success in the 21st century. The foundation delivers Think Quest—a protected, online learning platform—free of charge to primary and secondary schools globally. The platform includes:
2. Think Quest Projects: A project environment where teachers and students engage in collaborative learning.
3. Think Quest Competition: A space where students participate in technology contests.
4. Think Quest Library: An award-winning learning resource visited by millions.
5. Think Quest Professional Development: A comprehensive training offering for educators. Think Quest supports over 400,000 students and teachers in 43 countries.

Oracle Academy

The Oracle Academy provides a complete portfolio of software, curriculum, hosted technology, faculty training, support, and certification resources to secondary, vocational, and higher education institutions for teaching use. Faculty can flexibly insert these resources into computer science and business programs, ensuring that students gain industry-relevant skills prior to entering the workforce. Program options include:

1. Introduction to Computer Science: Prepares faculty to teach their students database, programming, and business skills. Offered free of charge.
2. Advanced Computer Science: Provides students with hands-on access to Oracle database and middleware software.

4

3. Enterprise Business Applications: Provides students with hands-on access to Oracle applications software used in industries such as finance, healthcare, retail, and manufacturing.

4. The Oracle Academy supports over 850,000 students in 91 countries.

The oracle way

Here are a few examples of how Think Quest and the Oracle Academy are helping students and teachers develop ICT skills worldwide.

1. Over 2,100 student teams from 83 countries submitted online projects for the 2009 Think Quest Competition. Winning teams—representing Australia, Brazil, China, Hungary, India, Italy, Pakistan, Puerto Rico, Singapore, South Africa, Turkey, the United Kingdom, and the United States—received laptop computers, school grants, and a trip to the awards event in San Francisco.

2. Under the Egyptian Education Initiative, more than 25,000 Oracle Academy students are developing IT and business skills, including three exceptional 12-year-old students who passed the Oracle Certification exam.

3. Each year, more than 5,000 teachers are trained to deliver the Oracle Academy curriculum through professional development events held in Austria, Belgium, China, Egypt, Estonia, India, the Netherlands, the Philippines, Romania, Singapore, and the United States.

4. In Scotland, students are using Think Quest to forge links with Inuit children and collaborate on online projects that raise awareness of climate change and other environmental issues. This unique initiative is part of the Northern Lights Expedition, endorsed by the Scottish Government and Royal Scottish Geographical Society.

5. Think Quest currently supports over 7,000 students and teachers in Egypt in 1,600 public schools. Over 200 teachers have attended Project Learning Institutes in Cairo over the last two years. All of the participants are teachers in the First Lady Suzanne Mubarak's Developing Schools Initiative, a premier, government-supported school program.

Recommendations for Innovate use of ICT

1. Support development of high quality digital content

a) Promote development of digital content by providing incentives for creation of the same by institutes of repute both in the private and the public sectors.

b) Simultaneously develop a mechanism for quality assurance of digital content through creation of a mechanism of rating of content by peers/students before its release to HEIs and universities

c) Establish dedicated cell to support translation of content into local languages.

d) All content so created should be made freely available to HEIs through the internet

2. Promote ICT usage in classroom

a) Develop a scheme for installation of IT infrastructure such as computers, LCD displays in HEIs through a PPP model, similar to schemes in vogue in the K-12 segment

b) A series of courses should be launched on training faculty in usage of ICT in regular teaching

c) Faculty usage of ICT in their pedagogy should be monitored as a key performance indicator

3. Encourage adoption of IT systems

a) There are multiple IT Systems/ERP packages aimed at the higher education segment. A committee should be set up to review these and select certain packages which can be customised to the Indian context. These should be made available to recognised HEIs free of cost, giving HEIs the freedom to choose the most suitable package and relevant modules.
b) Usage of IT systems for key activities should be promoted through it being made a key parameter in accreditation/quality ratings

4. Promote development of collaborative networks

a) The Government is proposing the creation of a high speed knowledge network providing connectivity across education institutes. The same should be created at the earliest and connectivity should be provided to all recognized institutes
b) To supplement the current networking initiatives being undertaken, Intra and Inter-Disciplinary networks to enhance research collaboration between students and teachers should be promoted. This can also be supplemented by creation of online communities of practice

5. Creation of a common centralized repository for e-journals, digitized PhD thesis, and research papers, e-books etc,

a) A common repository of digitized content should be created. Existing non-copyrighted content should be digitised and uploaded into the repository. Going, forward, research papers and PhD thesis should be sought in digitised formats only.
b) Access to this repository should be provided to all recognised HEIs at a nominal cost

Conclusion

Successful implementation of ICT initiatives has been supported globally by country specific policy formulation and phased implementation. The framework has led to creation of a national network for accessing e-learning resources enabling greater access to professional development opportunities and uptake of flexible learning.

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6

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