

# E-LEARNING TECHNOLOGY FOR RURAL CHILD DEVELOPMENT

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**Abstract—**21<sup>st</sup> century is the century of Hi-Tech. Recently Hi-Tech is comprises with IT, ICT, BT and Nano-Technology. Today ICT (Information Communication Technology) is a unique technology which is used universally in all span of life. ICT plays a predominant role in the creation and development of knowledge. The ICT revolution has changed the learning process of childhood up to the real world.

E-learning is a combination of learning services and technology to provide high values. Internet plays a vital role in e-learning. E-learning is attaining significance in the world of internet. Due to the advantages of in internet, e-learning reached at any time and any where.

To meet the demands of our global economy, there must be corresponding adoptions of e-learning in child education to develop 21<sup>st</sup> century skills. Computers are reshaping children's lives, at home and at school in profound and unexpected ways.

In this paper, we have discussed problems, considerations, issues and approaches to e-learning in India with giving stress on important features of e-learning and benefit of e-learning for rural child development. The paper also highlights e-learning's applicability and acceptance in developing country like India. Digital learning in India is limited one but implementation and planning for e-learning and development of ICT is important.

E-learning technologies have great potential to spread learning. However, the benefits of these technologies have to reach the rural masses of India; otherwise it will be one of the causes of the Digital Divide.

**Keywords-ICT,digital age,digital divide,e-learner,e-book.**

## I. INTRODUCTION

Today ICT has been become a revolution in all walk of life in general and in education in a particular. The ICT revolution has changed the learning process of childhood up to the real world.

By E-learning today's children may be enabled to develop a self concept; develop basic decision for making skills. Students require higher level of education to succeed in the new, knowledge based society.

### A. E-Learning -

“E-learning most often means an approach to facilitate and enhance learning by means of personal computers, CD-ROMs, audio visual aids and the Internet. This includes email, discussion forums, and collaborative software.”

The Commission on Technology and Adult Learning (2001) defines e-learning as “Instructional content or learning experiences delivered or enabled by electronic technology”.

### B. Why does e-learning matter in early childhood education?

ICT offers new opportunities to strengthen many aspects of early childhood education practice such as --

- An opportunity to support and enhance children's learning and plays experiences;
- Opportunities to support and strengthen practitioners' professional learning and development; and
- Opportunities to support and strengthen relationships and communication between early childhood centres, parents, and other people connected to the early childhood education setting.

## II. ROLE OF ICT PLAYS IN EARLY CHILDHOOD EDUCATION

There is a growing recognition of the many different ways that ICT can contribute to, or transform, the activities, roles, and relationships experienced by children and adults in early childhood education settings.

The following table shows some of the ways in which ICT can be part of early childhood education.

TABLE I. ICT AS A PART OF EARLY CHILDHOOD EDUCATION

| Table Head | ICT and Childhood Education   |  |
|------------|---|--|
|            | Roles of ICT  | Some examples  |
| 1          | Children using ICT in their play or learning (alone, with peers, or with adults).   | Children using computers to play games, listen to stories, or draw pictures.<br><br>Children using ICT equipment in games or role-play activities.                     |
| 2          | Children and practitioners using ICT together to scaffold children's learning.  | Using the Internet to locate information or resources, sparked by children's interest in a particular topic or idea.   |
| 3          | Children and practitioners using ICT together to document and reflect on children's learning, or to share children's learning with parents. | Taking digital photos, videos, or audio recordings of activities in the early childhood education, setting and reviewing these together, or sharing them with parents. |

### III. APPROPRIATE USE OF ICT WITH YOUNG CHILDRENS

#### A. *ICT and Childrens play*

Play is considered an important dimension of early childhood education. As part of children's social, emotional, cognitive learning and motor development.

#### B. *Computer games: Play and learning*

Computer games might have a special or unique value for children's play, and that if these are to become a significant part of children's lives.

#### C. *Using ICT to support language development*

ICT can make rich contributions to children's literacy development, in the four interrelated areas of speaking, listening, reading, and writing. For example, "talking" word processors support young children's experimentation as they play with language. Word processors also offer possibilities for children to compose and write without needing to have mastered the production of letters by hand.

#### D. *Using ICT to support mathematical thinking and problem solving*

Computers and other forms of ICT also have the capacity to support young children to develop mathematical thinking. Computers can assist even very young children to develop mathematical ideas provided. Teachers are able to choose and use these tools in a way that scaffolds and extends young children's thinking, in particular, their higher-order of thinking.

#### E. *Supporting children from diverse cultural or language background*

ICT may provide unique opportunities for supporting children with special learning needs, or children from culturally or linguistically diverse backgrounds. Good software can allow children to engage in self-exploration.

### IV. HOW CAN ICT ENRICH THE EARLY CHILDHOOD LEARNING ENVIRONMENT?

ICT holds many potential benefits for young children, and that when used appropriately, ICT can:

- Support children's cognitive and emotional development, and the development of social and co-operative skills;
- Assist in the emergence of early literacy and mathematical thinking;
- "Level the playing field" for children with special learning needs;
- Enhance and strengthen relationships between children and adults. or give adults new ways to gain insight into children's thinking or their interests, thereby providing opportunities to better support and scaffold children's learning; and
- Facilitate the emergence of "new literacy's" or "multiliteracy's" in children.

### V. BENEFITS OF E-LEARNING

The shift to the new paradigm is accompanied with many educational benefits including:

User-centric learning: e-learning provides a learner centered model of education where students take the responsibility for learning by themselves. Students may set their own objectives and explore their own learning needs and agendas.

Accessibility: The Internet can bring more access to information and learning resources for all learners, including the disadvantaged, disabled, adults and those needing special curriculum.

Collaborative learning: It allows students to come in contact and to work in collaboration with students from other countries and cultures. It enables learning from other individuals or groups of learners.

Tools for innovation: e-learning is accompanied by a suite of tools to enable teachers and learners to be innovative, creating and sharing ideas or customizing digital learning resources for their own use.

Flexible study: Learning anytime, anywhere – learning is no longer location dependent and learners are able to take courses independently of their physical location, be it their homes, their places of employment, or elsewhere.

Just-in-time learning: Students can follow a non-linear path at a pace that meets their individual needs at that time.

Adaptability: Differing learning styles can be catered for, allowing for greater detail and depth of learning. The content presentation can be customized according to individual student needs. Similarly, differing teaching styles can easily be adopted and adapted to suit different communities of learners.

Cost effectiveness: The e-learning environments are less expensive to produce and distribute the content, resulting in a higher degree of cost effectiveness and cost reduction. Costs can be reduced through standardization, resource sharing, increased productivity, lowering of travel costs etc.

Easy management and administration: On a practical level, functions such as the development and distribution of learning materials, training, assessment, registration, marketing and sales, learner support, and general administration can now be easily done.

### VI. SCOPE FOR IMPROVEMENT IN SCHOOL EDUCATION BY USING IT : WEB BASED EDUCATION

If Information Technology is used in school education it provides:

#### A. *Flexibility, Accessibility, and Convenience*

With a very short period of training the student can access the learning material when their schedule allows. No separate distribution mechanism needed (WBL) can be accessed from any computer anywhere in the world, keeping delivery costs low, this leads to cost saving.

### B. Enhanced learning

Cognitively, active and context-based (“real world”) learning activities, the highly interactive nature of well designed online learning, flexibility to review course material at any time, all improve learners abilities to synthesize and retain information. Many learners also find it easier to ask questions via E-mail because they have the privacy of direct contact with the instructor and avoid the classroom fear of “exposing” ignorance.

### C. Ease and speed of update

WBL allows for efficient and quick updates to course material for frequently changing information. The changes are made on the server program. Everyone worldwide can instantly access the update.

### D. Consistency of learning material

Each learner gets identical instructions to ensure the consistency and quality of the message by using WBL.

### E. Cross platform

WBL can be accessed by web browsing software on any platform Windows, Mac, UNIX etc. All these factors contribute to improve the quality of school education by overcoming factors like social background of students, parents, different standards of teaching and teachers training programs, all teachers cannot deliver the same message to all learners.

## VII. PROBLEMS FOR E-LEARNING IMPLEMENTATION

### A. Literacy

The literacy rate in rural areas is poor as compared to its urban area. Because of agricultural based economy and most of the population lives in rural area. The another reason is insufficient availability of educational facilities.

### B. Literacy

Unavailability of skilled people is a crucial problem. It is found that expert people are not interested in working in rural areas due to inadequate wages. They are interested in work at district level or metro cities.

### C. Availability of Technology and Electricity

Technical resources such as computers and related devices are essential for e-learning. In rural areas it is difficult to avail and use these resources due to transportation and financial problems.

Electricity is essential for IT. Now a days we are facing the problems of lack of electricity not only in rural areas but urban areas also. This may affect the implementation of e-learning system.

### D. Finance

For making an e-learning system setup, large finance is required. It is very difficult in rural areas small organizations /

trusts to avail the finance for such work from Government and Non-governmental (GO & NGO) organizations.

## VIII. PROBLEMS REGARDING IMPLEMENTATION OF E-LEARNING IN SCHOOL EDUCATION

The major problems we will be facing are:

### A. Intensive training to school teachers

Training should be given in order to create a learning environment that will itself train and encourage students on the one hand to turn the learning experience into useful, practical and personal knowledge.

### B. Awareness and Workshops

In rural area students and parents are novice to e-learning and web based learning. So the demonstration, seminars & workshops needs to be conducted for society in order to understand the importance of it.

### C. Bandwidth limitations

Limited bandwidth of Internet connection gives slower performance for sound, video and intensive graphics, causing long waits for downloads that can affect the ease of the learning process. Improved bandwidth will help the teacher to solve his problem.

### D. Effect on teachers

Web based learning will lead to reduction in manpower as per as teachers are concerned. This will lead to oppose by teacher's organization.

### E. Access

Every school will not have equal opportunity to information because of access issues. The schools with fewer budgets will always face this problem. This is the major problem as per as India is concerned, as there is big gap between poor & rich communities in India.

## IX. STRATEGY TO SOLVE THE PROBLEMS

Total literacy has been a goal of government. The Union Cabinet cleared a proposal to amend the constitution to make education a fundamental right for children in the age group of six to fourteen years. To solve the problem of illiteracy Government has proposed and launched ‘Sarva Shiksha Abhiyan, (SSA-Education for all). It is essential that such government proposals should be implemented properly and strongly.

Participation of local authorities, NGOs are also important in this regard. Government should appreciate and encourage them.

Along with traditional education, policies should be developed and implemented for IT education. The IT subjects should be incorporated in curriculum at school level.

Encourage corporations to appreciate ICT competent staff and conduct/sponsor ICT training for staff members / professionals.

Existing human resources should be developed and appropriate attitude should be fostered.

Awareness of Government schemes which provide funds for technological resources should be given to organizations in the rural areas. Monitoring of such schemes is also necessary to avoid misuse and corruption. And government has to raise the funds.

The problem of shortage of electricity can also be solved by using non-conventional sources of energy such as solar energy and also by avoiding the load shedding during working hours. The use of generators, Inverters, UPS can also be alternatives but it will require special finance and may not be considered as a permanent solution. Efficient use of electricity is a great matter in this regard.

Government's strong support and full dedication can solve all the problems.

## X. CONCLUSIONS

Education is essential for every one. The increased rate of literacy will push the nation towards development. E-learning is a useful way to provide education. Considering India's rural areas, problems create difficulties to implement the e-learning system but strategies can be developed and implemented. Before the actual implementation of e-learning system, the understanding of different components and their functions is necessary. A policy should be developed to implement the functions and to maintain the quality of system.

With introduction of Web Based Education at school level rural children and youngsters will grow as "Computer kids". Their exposure will get increased due to which the Knowledge level will get definitely improved.

Web-Based Learning adds human support through on-line tutor, thereby extending the scope of what can be effectively taught into many new subject areas. It will enhance the quality of education in our country at all levels i.e. Primary, Secondary and Higher Education.

Computers are reshaping children's lives, at home and at school, in profound and unexpected ways. Common sense suggests that we consider the potential harm, as well as the promised benefits, of this change.

E-learning technologies have great potential to spread learning however, the benefits of these technologies have to reach the rural masses of India, and otherwise they will be one of the causes of the Digital Divide.

Development in the 21<sup>st</sup> century will be determined, to a large extent, by the thought, action and imagination of young people. This in turn, is shaped by the education system.

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