

Federation of Open Source Initiatives in Promoting and Sustaining E-Learning in Rural Areas

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Abstract—with an aim to bring a positive shift from being known as developing country to developed country, the concept of E-learning got its recognition in India as one of the technological invention. In today's time, learning is no longer limited to classrooms with conventional method of knowledge parsing. E-learning is one of the skillful schemes to impart education with a strong sense of self-motivation, communication and technology in an effective manner. The usage of technology allows the utilization of E-resources in E-world comprising new innovations and conventions of Open Source standards. Various open source e-learning platforms have been developed ensuring successful contribution of the programmers to the development of a software package, with an aim to integrate technology seamlessly into the curriculum. The content obtained from the open source tools is one of the promising concepts for E-learning and Knowledge Management. The promotion of learning seems to be hazardous in rural communities and areas due to low horizon mindset of students and teaching negligence of teachers towards Information and Communication Technology (ICT) and new open source learning paradigms

Keywords- E-learning, Knowledge Management, Open Source, E-resources, Rural areas, ICT.

I. PROBLEM DEFINITION

A great number of people can be provided Education and Training via E-learning to ease the accession of knowledge at the educational and vocational level at any instant of time. At the same time, this trend is not been encouraged in rural areas due to –

- Low intrinsic motivation to learn academic materials.
- Educational psychology for presentation of the content or instructional design, serving its educational and instructional objectives.
- Poorly selected and presented content of learning, thereby increasing challenges and severely affect the teaching learning experiences.

The slow growth of e-learning in rural points can be attributed to various factors, in totality, including poor industrial infrastructure, difficult geographical locations, different cultural and ethnic groups and unsound fiscal management. The focused objective of this endeavor is to study and analyze critically the present open source E-learning initiatives in such zones and develop an effective and efficient frame work for utilization to bridge the knowledge divide. In fact, the overall purpose is to understand the role of E-learning in reshaping concept of educational courses as well as vocational courses.

II. INTRODUCTION

In today's era, educational technologies have reached a point that not only allows interoperability but also reuse of learning resource. The advancement of computers and networking is providing new ways to support learning in a more customized, dynamic, portable and on demand. At the same time, internet

has revolutionized the educational field; more precisely distance education, therefore leading towards a new era of learning called E-learning. With the concept of E-learning, the possibilities for getting knowledge and information out to the learner and visionary hoppers at their own pace have opened a whole new world for knowledge transfer. The advent of contemporary terminology with respect to learning has also gradually changed from “distance learning and education” to “online learning, Web based training and eventually to E-learning”. It allows us to manage and share knowledge and skills of the experts who work in schools, colleges and universities and to get the right information to the right people, whenever required. E-learning has transformed the traditional student into an ‘E-Student’ being taught by an ‘E-Teacher’. E-learning has acquired the status of a “far-reaching innovation” in higher education.

III. NEED OF E-LEARNING

With mature and advanced internet technology, the increased importance and effects of online learning has been obvious fact. E-learning facilitates with flexible learning time and locations, different adjustable and usable facilities and resources, global village and world vision development potential, learning materials quickly providing new development, easily updated content with added materials, much interaction between teachers and students, supporting self oriented learning environment, stimulating learning motive, learning to be autonomous and responsible. In global context, the promotion and sustainment of e-learning methodology sustains in-hand learning feeling and brings lack behind things ahead; especially in low areas.

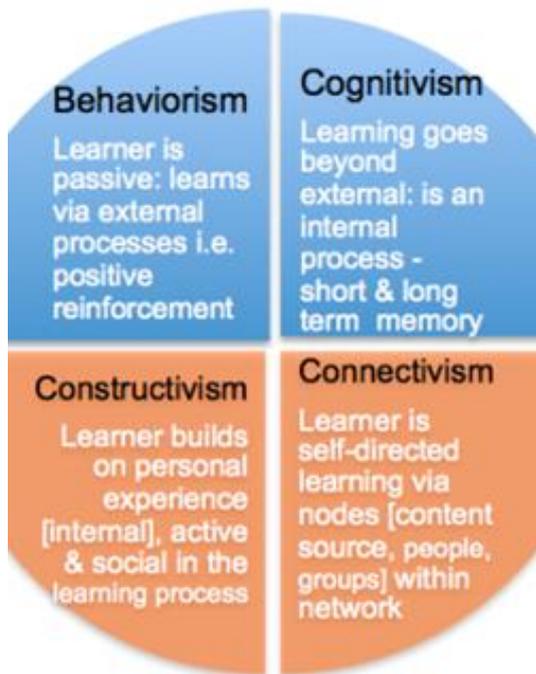


Figure 1. Aspects depicting the real impact and the motto of existence of E-Learning

The content of E-learning can be delivered easily alongside electronic discussion forums, streaming media lectures, online documents and quizzes with its cost-effectiveness. The need of E-learning is inevitable in rural areas to overcome the following problems faced in rural education-

- The experts of rural schools/colleges in villages and small towns receive low income; possibly paying less attention to children.
- There is no proper transport facility for the children to travel miles to come to education point.

For empowerment of rural area education, it is required to empower those who are appointed as the agents to bring change by introducing emerging trends like ICT in education for transformation in education and learning.

IV. MODES OF E-LEARNING

Finally, complete content and organizational editing before formatting. Please take note of the following items when proofreading spelling and grammar:

As discussed earlier, E-Learning is the best technological medium to connect professionals and learners who are miles apart away from each other. In earlier times, the medium of training delivery used to be floppy diskettes, multimedia CD-ROMs, and interactive videodisks. But nowadays, use of web technology is on peak promoting idea of e-learning and the same can be transformed into m-learning (mobile learning). Despite of all these schemes, learning can be done using two basic modes as:

- Synchronous learning: establishing a reliable learning session via Chat, Teleconferencing Virtual classroom,

shared whiteboard, instant messaging etc. with equal rights to each participant.

- Asynchronous learning : providing ease and comfort to the learners to log on to learning environment as per their suitable time and access the material like Email, Discussion groups, Self paced group.

These two modes have been subsumed under e-learning as the internet becomes the integrating technology.

Hurdles in promotion of e-learning and initiatives taken in rural areas

Various downsides have been faced by e-learning technology to get its primary existence in various back and rural areas as:

- Problem in finding skilled manpower to train illiterate and rural area citizens of India.
- No arrangement of computer based courses/skills for students in primary schools to increase their knowledge about ICT importance in rural development.
- Community based participation (which is foundation of open source e-learning paradigm) is not encouraged.
- Content material/Services delivered to rural areas are not available using their respective local language affecting their long term sustenance due to low interest in their usage.

Despite of these hurdles, various sorts of E-learning initiatives have been proposed and implemented as an asset of digital communities to educate learners in the most promising manner; for ongoing rural development prospects -

- **E-Gyankosh** - a National Digital Repository of learning resources –A collection to store, preserve, distribute and share digital learning resources for Open and Distance Learning(ODL) institutions.
- **Library and Documentation Division** –effort by Indira Gandhi National Open University (IGNOU)-An effort collection to take higher education to the doorsteps of the un-reached through its diverse modes of Information and Document Delivery Services.
- **NODLINET** (National Open and Distance Learners' Library and Information Network) – an initiative taken up by IGNOU - provide a platform for libraries and information centers of the open and distance learning system that will provide access to all electronic and digital resources across the globe to enhance the quality of education at par.
- **NCERT**(National Council of Educational Research and Training) – A repository portal of freely available online textbooks for schools/colleges. In it, textbooks can be navigated by chapter title or a subject of the book for a particular class. It supports various types of languages.

- **Ekalavya** - Open Source Educational Resources Animation Repository (OSCAR)—an effort of web based interactive animations for teaching. The main purpose of creating this portal is to provide an interactive platform; used for the purpose of creating awareness and distribution of information among the general public for the well-being of the individual and the society.

A. *Open Source Initiatives*

The term open source has revolutionized almost every field with the factor of its openness. Since the concept itself defines its accessibility for everyone, it gives new wings to the acquirers to acquire every imagined utility; almost free of cost. The most fascinating field of open source includes software industry in which such software is designed whose source code has been published and is made available to the public. Anyone can copy, modify, store and redistribute the source code without paying royalties or fees. Open source code is developed and sustained by open source communities. These are virtual communities of practitioners who use Internet to share project artifacts. Access is open to every single individual at any instant of time.

Open source initiatives can be used in educational institutions to facilitate e-learners with strong stimulation model of real world classroom. It comes with its own share of advantages:

- It is totally free from the burden of software vendors.
- Cost savings: OSS is almost free with its redistribution feature but can charge a minimal cost to maintain it.
- Better functionality: It can be easily modified, copied, redistributed and totally customized, based on organization context.

A few set of organizations and real concept based communities have been identified and developed to promote the essence of E-learning as:

TABLE I.

The Open Knowledge Initiative http://web.mit.edu/oki/	Helps in developing an open and extensible model that specifies how the components of an educational software environment communicate with each other and with other enterprise systems.
SchoolForge http://www.schoolforge.net	Unifies standalone organizations that advocate, use and develop open resources for primary and secondary education.

An Open Source Initiative (OSI) certification standard have been proposed and when issued indicates that the source code

of a computer program is made available free of charge to the general public. This initiative is very much useful to fill time and spatial barriers, arisen in various poor and back areas due to conditional and restricted access policies to the sources. Various open source tools have been formed enabling universities to create courses easily available to the global education community as:

- Moodle— Moodle is an open source learning management system tool that allows instructors to construct customizable online courses on a flexible platform. It is licensed by the Open Source Initiative under a General Public License (GPL) and can be downloaded to any computer.
- Claroline—It is a free technology tool, built using PHP and MySQL, emphasizing training technologies and well-structured courses. It is supported by a large number of user and contributor communities that continuously enriches the software. It is licensed under the GNU GPL.
- Atutor - Atutor is open source learning content management system, developed by the Adaptive Technology Resource Centre at the University of Toronto with basic tutoring and advanced third-party plug-ins feature set. The Atutor is licensed under the GNU GPL.
- Dokeos - Dokeos is a web-based application developed using free technologies PHP and MySQL. It is particularly designed to facilitate e-learning and course management with flexible, user-friendly platform to simplify the whole process. The initiative of Dokeos was developed with the help of global contributions made by universities, organizations, and individual programmers.

The concept of student-centered learning has acquired a new dimension with open source project models.

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