Content creation and E-learning in Indian languages: a model

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Abstract

In the era of E-publishing and E-learning, numerous universities and cultural organizations around the world have launched initiatives to develop tools for multilingual learning and web publishing and have given preference to local content. India has different languages and different culture. Most of the knowledge and information related to people, culture, science and philosophy of India is available in Indian languages, which will be useful for learning and developing knowledge base. In India E-learning systems and online courses are already started, but as a multi lingual country, which gives importance to education through regional languages, there should be facilities for multi lingual E-learning. This paper covers the issues of Indian language knowledge base/content base, its requirement, and its implication in e learning. An Integrated multi lingual E-learning system for India is proposed in this paper, where importance given to multi lingual course content creation.

1. Introduction

Time, distance and languages were always been hurdles for the formal education system. After the emergence of IT, the technological solutions like, developments in information, communication and computing technologies have made available powerful tools to a large sector of the population. Video Conferencing, Satellite Applications, INTERNET and WWW etc started changing the life styles of modern population. In education system also, an environment in which, learning is facilitated by multidimensional, at one axis the content producer/deliverer and on the other end a learner with the help of software applications for teaching and learning, has been emerged. Obviously, these useful tools, which avoid several barriers leads to setting-up of digital/virtual/e-campuses or e-varsities for E-learning. Global connectivity must mean more than technology and commerce; it must lead to global learning, and the inculcation of values that set apart a civilized human being[1].

2. E-learning & E-learning system

A system of learning that allows our learners, scholars, researchers and common public to learn, search, research and acquire essential knowledge using the benefits of high-speed network connections, INTERNET etc without any time, distance and community constraints. Online learning programs that take advantage of high-speed cable connections allow everyone to learn and acquire essential knowledge at times that don't interfere with their work or personal schedules. Online education has changed the essence from Teaching to learning. It stretches its wings from campus or classroom to home or work place or entire community. Here education reaches globally and widely. The idea of single institution changes to consortia approach, where all of them networked together by electronic communication. Students also changed from traditional to techno-savvy, many of them grew up with computers in their homes, or libraries or schools and view a computer as a tool rather than the mystical blue or black box [2].

3. E-learning in Indian languages

Indian education system has been given preference to its regional languages from beginning itself. Ancient history of Indian scholarly achievement, like Takshshila, Nalanda, Ancient gurukul Sytems etc can be taken as proof, which was based on our languages. India was a leader of knowledge, wisdom and cultural development in the past when we were using our languages as a way for research, learning and education. Saying this is not that we should not learn or should not use other language for expression or for learning, Should be, but if regional languages will get preferences in varsity than it will be useful for general people. It will be useful for knowledge development rather than language learning & development. A very large part of the databases and content in our country is in these languages. It is important to be able to

communicate knowledge seamlessly without language being a barrier. A major effort would therefore have to be directed at ensuring that IT can deliver its potential in local languages [1].

3.1 Need of E-learning in Indian languages

• To facilitate learning in national and regional language as a matter of self-respect of our country and our languages.
• To avoid language barriers to acquire knowledge.
• To promote Indian languages as communication channels for wisdom & scholar communication
• To acquire specific, job-related skills in respective language.
• To serve Indian community who knows English and Indian languages as well.
• To provide access to all sources of information available in Indian languages
• To reduce cost of learning as it avoids all the indirect expenses, which reflect costs like accommodation, travel, physical strains etc.
• To access learning materials wherever they are, as it allows learners to do so.
• To save time, as it offers anytime, anywhere learning. Online training/learning can be attended for 24 hours from the office, or from the home or even from the road.
• To keep updated with instantly updated materials, ensuring that training is always current.

3.2 Multi lingual content creation

For designing online courses in Indian Languages, starting with registration, course materials, examination process and certification should be designed in these languages. Multilingual content creation refers to the creation of content, such as, multilingual secondary/primary database, specialised Indian language calendar, portal or vortal, electronic publishing, news letter, news papers, manuals, brochures, online documents etc, by the author or generator of thought. Language technology and tools can be used for creating computerised qualitative content. These tools can be also used for multilingual e-mail application, chatting etc.

3.3 Initiatives

Serious effort in Indian language computing is started with Department of Electronics sponsored symposium "Linguistic Implication of Computer based Information processing", in 1979 and followed by the development of GIST (Graphics and Intelligence - Based Script Technology). Among the projects followed by the symposium, development of GIST was a major break through, at Indian Institute of Technology, Kanpur (IITK). Centre for Development of Advanced Computing (C-DAC), Pune worked further on this technology. In order to bring all efforts under one umbrella, DoE initiated another program on "Electronics Tools for Indian Languages (ETIL) in 1987. DoE (now Ministry of Information Technology) in 1990-91, initiated the TDIL (Technology Development for Indian Languages) with the objective of developing Information Processing tools and techniques to facilitate human-machine interaction without language barrier, to create and access multi-lingual knowledge resources, and to integrate them to develop innovative user products and services [3,4,5]. C-DAC has done a valuable work in promoting IT applications for Indian Languages and brought-out software products like GIST Card, I-leap, GIST, ISM etc [6]. The Bureau of Indian Standard brought-out "INDIAN SCRIPT CODE FOR INFORMATION INTERCHANGE (ISCII)" IS 13194: 1991 as a standard for Indian language computing. BIS also standardized the keyboard layouts for each language. We can't ignore the sufficient efforts by some private agencies in this area [7].

4. Multi lingual E-learning system for India: a model

Indian community is based on several languages and dialect. To felicitate people of all regions in India, irrespective of their languages and distance barriers, a system is very much required to facilitate the students and researchers for enhancing their skills, and acquire a degree whenever or wherever they want. This can be achieved by creating a system of multilingual content knowledge base so that it can serve all-regional community requirements. Knowledge development is not based on a particular language. Therefore by creating system only in English, we should not restrict the facilities to any communities, as today technology and tools are already available, where it needs to put together and integrate them in a single system. The proposed system for E-learning in Indian Languages can have the following components (Appendix Figure: Integrated multilingual E-learning system for India: a model).

4.1 Multilingual Knowledge Base

In proposed system, the Multi-lingual Knowledge

Base will be the storehouse of all types of contents, require for disseminating knowledge to the learners. As we know that, content is the heart of any learning system whether that is virtual or traditional. In virtual/E-learning system, it includes information in all media formats, including text, graphics, and animation. The content disseminated to the learners is the core component of the system. If these contents are in a mother tongue or in regional languages, learners will get great benefits, especially in a country like India. The system should support all constitutional languages i.e., Assamese, Bengali Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Oriya, Punjabi, Sanskrit, Sindhi, Tamil Telugu, Urdu and off course English also.

4.2 Course Content

Input of the content, created by the expert of that particular subject area, the archival resources of discussion groups, research findings of the earlier learners. Knowledgebase is always growing from past. Other contents in this system are;
- Subject tutorials created by subject expert.
- Learning resources,
- Tutorial and multimedia based interactive resource
- Content by users of learning system (e-Conferences, e-Seminar's, e-Dissertations etc)
- Archives of users Gathering through e-discussion, List forums etc.

4.3 Interaction

Interaction between learners and the system in their own languages through the following;
- e-classes
- e-survey
- e-Chats
- e-Discussion
- List forums

4.4 Evaluation, results and certification system

Learning system without evaluation doesn't achieve its purpose because education always wants certification. Hence this component can be a similarly important as knowledge system. Automated evaluation, online examination etc can be hosted in various languages also along with virtual security systems. Degree and diplomas can be distributed on the basis of results online of exams.

4.5 Registration Administration System

For registration, management of fees, other administrative issues, security of content and other data, holding of exams, evaluation of exams etc, an Administration system is required.

5. Conclusion

In India E-learning systems and online courses are already started by IGNOU, Goa University and by some private educational institutes and web portals. But as a multi lingual country, which gives importance to education through regional languages, nobody started multi lingual E-learning facilities. The tools available for Indian language content creation are the beginning milestones. Hence it is the duty of computer professionals, educators, administrators, language content creators, and content disseminators, to sit together and give a viable framework and standard solution to the learners knowing only Indian languages. System development should be based on global standards like Unicode rather than restricting ourselves within the limited boundary [8]. There is also a need to popularize language technology among the user community and developing guidelines for Indian language content. Organizations like C-DAC, IT Departments, Indian Universities, research institutes etc can take initiative in this direction. C-DAC, as the forerunner in the multi lingual technology, can do a lot in this direction. UGC, AICTE, NCERT, NIC, ERNET, INFLIBNET, C-DAC etc, as educational and technology facilitators in India, can co-operate in the area of multi lingual E-learning system. It is clear that, in the IT era, we can cross the language and distance barriers through E-learning technologies.

References
[1]. M G K Menon, "Transformative Synthesis of Education and Information Technology" (Address at the 12th convocation of IGNOU held at New Delhi on 3rd March 2001), *University News*, 39(27), 2-8 July, 2001, pp 13-17
[2]. John C. Butler, "Is the Internet helping to create learning environments?" *Campus-Wide Information Systems,* 17 (2), 2000, ISSN 1065-0741 John C. Butler, "Is the Internet helping to create learning environments?"

Campus-Wide Information Systems, 17 (2), 2000, ISSN 1065-0741

[3]. Language Technology in India: Past, Present and Future. <*http://www.tdil.gov.in/articles/artindx.htm#*>

[4]. TDIL- Technology Development for Indian Languages. <http://www.tdil.gov.in>

[5]. Development towards use of Information Technology in Indian Language, March 1998. *http://www.tdil.gov.in/articles/artindx.htm*

[6]. Graphics and Intelligence based Script Technology, CDAC India *http://www.cdac.org.in/html/gist/webappl.htm1*

[7]. Shivpal Singh Kushwah and J K Vijayakumar, "Tools for language content creation in India: issues of quality assurance and standardisation in multi-lingual environment" (In publication with IASLIC Bulletin)

[8]. Unicode consortium. <http://www.unicode.org/>