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A Quarterly of the Commonwealth Educational Media Centre for Asia

From the Director's Desk...

According to UNICEF's latest State of the World's Children report released in December, international development efforts are drastically short-changing girls, leaving hundreds of millions of girls and women uneducated and unable to contribute to positive change for themselves, their children, or their communities. Essentially, their fundamental rights are violated, and they become victims of violence, structural, social and physical. And education is the key to empowerment and even the poorest wants for her child. "the kind of education your child receives".

If education is at the heart of development, it is also becoming a large part of the globalization process. Education is set to become a prized, internationally tradable service, identified as one of the twelve main services that have to be opened up for free flow of trade between countries. The significance of such dramatic changes is hard to foresee but it definitely implies global competition where the best will survive.

There are two ways to address the global challenges. One is to look inward and to protect one's own turf. The other way is to embrace globalization and to compete in the global education market, basing ourselves on the assumption that the learners will determine and accept what they consider educationally, economically, culturally, and contextually significant.

Cultural and context significant education means that culture specific materials have to be developed and made available. Today's innovations in knowledge management enable us to develop such materials and initiatives in developing countries need to address matters such as knowledge management and data mining and data warehousing. This issue looks at ways and means of developing culture and concept specific materials, as also national and individual initiatives.

Our guest column by Prof. Dhanarajan explores the world of e-learning and its usefulness for quality assurance in higher education. In his inaugural address to a national dialogue on e-learning jointly organized by COL and India's University Grants Commission, Prof. Dhanarajan points out that "at the heart of all learning, using ICTs, are materials specially designed to exploit the full potential of the available technological assets".

To bring you an idea of what is possible when the mind set is right is a case study of the Nangi Village Project in Nepal, where, despite all the obstacles of poverty, isolation, distance, and lack of access, a person with a vision and his school have transformed themselves to open a window to the world. The Nangi village project shows us the way to becoming part of the global village, that opening windows is a two way process. We can learn much from such grassroots efforts.

Also in this edition of EduComm Asia is a profile of the young M. P. Bhoj Open University, Bhopal; and in technology tracking, we introduce you to web conferencing as an inexpensive yet versatile mode of interactivity. In Smart Tips, we begin a series of write ups on data mining and data warehousing and their applications for open and distance learning institutions.

Other features are also there, from regional news to news in brief. We look forward to your comments as we move to reinvent ourselves to be more timely and relevant to you. Do continue to write to us as you have always done.

Dr. Usha Vyasulu Reddi

Guest Column...

In this issue, we bring for you **Inaugural Address of Prof. Gajaraj Dhanarajan**, President and Chief Executive Officer, The Commonwealth of Learning, at "University Grants Commission-Commonwealth of Learning Dialogue on Enhancing Higher Education through E-Learning", held between 17th and 19th November 2003 at India International Centre, New Delhi, India.

Enhancing Higher Education through E-Learning



Gajaraj Dhanarajan

In a report to the Canadian Council of Ministers of Education on *e-learning*, authors reflected, "In the fifth century, B.C., Plato predicted that the invention of writing would weaken the oral tradition that sustained poets such as Homer". Yet poetry is still alive and well 2500 years later. Similarly, 500 years ago many believed that the invention of printing, by making intellectual creations easily available, would dry up the springs of intellectual creations, by ending a long standing tradition of oral debate and expressions. As we look back over the last 500 years from the vantage point of our knowledge-based society, a decline in intellectual vitality is more than a little difficult to discern, though certainly there may have been changes in some aspects of intellectual life. In fact, the existence of today's knowledge-based society is in part a testimony to the enormous intellectual energy of the last 500 years. No one could seriously argue today that the intellectual enterprise or teaching has suffered because of the intervention of writing or printing.

*"The new knowledge tools represent similarly revolutionary technologies, and we ignore them at our peril. Their potential is also clear. Online learning will be central to fostering the lifelong learning culture that will be essential to sustaining a civil and prosperous society in 21st century Canada."*¹

On the one hand, it would not be inappropriate to state that the last 20 years have seen some remarkable innovations in the delivery of learning. On the other hand, many would also argue that as remarkable as these innovations are, they are no more than a beginning. Developments in the next 20 years will make, as one former Secretary of Education of the USA, John W. Gardner, remarked, ". . . education as it is practiced in most schools today (look) so primitive." While this may be overstating optimism Professor Gardner's views are not totally unrealisable.² The technologies that are available today and emerging in the near future have the potential to transform the business of education. However, what may be impeding that potential is the culture and tradition of our academe. Nine centuries of organised education has strong views and deep roots on what is best and what is not. Notwithstanding the reticence and the strong pull of tradition and history, we need to consider in light

of the demand, quality, relevance of curriculum, appropriateness of content, strategies to utilise the potential of the new technologies to support a nation's aspirations to train its workforce to be a modern, well educated and highly competitive one in the global environment.

The demand for creating high quality learning environments especially in science and technology in all of this nation's colleges and universities have been on the increase for at least the last 30 years or so. The call has become even more urgent in recent years. Many factors contribute to this changing educational culture. Important among them are the forces of economics, social and technological. These forces are worldwide in their scope and, in terms of their power, seem to have a profound impact on business practices, manufacturing processes, financial services, government policies and, more recently, in our teaching practices and learning behaviours. It would not be an exaggeration to say that as we embark on a new century, we are also moving irrevocably in the direction of changing the way we think about information, knowledge and learning.

In addition to the environmental change, there is also a change in the nature of those requiring education and training. Communities are no longer contented (nor should they be) to limit access to education and training to the fortunate few who are able, literate, live in urban communities, have access to communications, infrastructure and classrooms, the knowledge of when, how and what to learn and the resources to pay for them. Further, individuals and governments are beginning to recognise that planning for "competitive advantage" will require a labour force that has literacy and numeracy skills beyond three to six years of primary schooling (which is the current situation in most industrialised and

newly industrialising countries, and even grimmer in all other developing nations). Globally, some two billion people who are in today's workforce will continue to be there well into the first quarter of the next century. Their knowledge and skills will need continuous renewal. To this, we need to add a further one billion young children and adults who will require initial education and training. The level of supply (or lack) of education and training for this huge demand for initial, continuous and lifelong education using present patterns of delivery are, in the words of the much respected former Vice Chancellor of the United Kingdom Open University (UKOU), Sir John Daniel, "at a crisis point"³. The challenge of providing education and training to a huge and diverse population with a variety of learning goals and styles, at an acceptable cost, will require new forms of educational delivery, globally. Notwithstanding the scepticism of many in the academic community, recent reports from agencies, such as UNESCO, the Organization for Economic Cooperation and Development and the World Bank, seem to say as much. In some ways, the emergence of the new technologies may have something to do with the push to drastically change the nature of the learning environment.

World over, the arrival of the newer technologies certainly seems to have stimulated a resurgence of interest in diversifying methods of knowledge delivery. Almost on a daily basis, yet another Web-based course becomes available from one university or another. *Smart Schools* are springing up all over the richer world and *Virtual Learning, Online Learning* and other newer forms of educational delivery are becoming part of the educational jargon of the new century. Even before the arrival of the newer technologies, institutions

such as the Correspondence School of New Zealand, the National Institute of Open Schooling of India, the Open Universities of Sri Lanka and Hong Kong, the UKOU and Indira Gandhi National Open University have all been providing good quality, mass, flexible and lower cost education for remote learners from basic to university-level education using the older analogue technologies of print, audio, video as well as the broadcast vehicles of radio and television. The experience and success of these institutions around the world are a testimony of the effectiveness of technology in taking learning to individuals and large communities simultaneously. They have transformed the delivery of education and in the process have also transformed the business of education. The experience of these institutions demonstrate a way forward for conventional institutions wishing to deliver high quality learning, but are handicapped from doing so by either a dearth of academic talent or much needed physical and digital infrastructure.

In her book, *The Death of Distance*, author Frances Cairncross⁴ argued that one of the major challenges for nations and institutions attempting to cope with and exploit the opportunities presented by the digital age is scarcity of people, "the ultimate scarce resource" from whom great value could be extracted. It seems to me that here in India that certainly is the case when it comes to engineering and technology education. The level of expertise and scholarship in these disciplines, on par with global benchmarks, is in short supply versus the need to educate large numbers of young people. Using the technology to capture, package and distribute the wealth of experience of the few for the benefit of the many is an imperative.

At the heart of all learning, using ICTs, are materials specially designed to exploit the full potential of the available technological assets. These materials will normally include content in the form of texts, special "books of readings", specially developed study or learner guides, assignments and assessments pads and instructor or tutor guides. These resources along with appropriate learner support systems complete the educational or training environment. There are two ways by which institutions acquire these learning and teaching resources. The first is to design and develop them either institutionally or in partnership with like-minded collaborators. The second is to purchase, lease or acquire through other arrangements, materials already developed, and adapt them for the institution's needs.

Some would say that content is not king in an ICT-mediated teaching environment and others would argue that the power in any instructional approach using ICTs lies in the art and science of instruction. Very few will, however, be courageous enough to state that technology is the most important component of multimedia-based learning. It is not. Developing *interactive multimedia* learning material is an exceedingly interesting challenge. It can be constructed from a combination of media, sometimes quite modest in cost and sophistication such as a combination of CAI (computer-aided instruction), print and, at other times, very expensive and elaborate using a combination of DVD, CD-ROM, hypermedia and virtual reality. Discussing this issue, Miller⁵ compared the process of production to "... an orchestra in which each musician not only plays a different instrument, but also speaks a different language. Such is the case with interactive video, where the assembled team includes instructional designers who speak of authoring, pedagogies and remediation; graphic artists who talk

of drop shadows, GUI's and animated sprites; video producers who think in terms of wipes, fades, pictures, plots, scenes and storylines; and computer specialists who deal in bits and bytes, images and data, icons, picons, micons and programming languages all their own. Add to this, a systems person who wants to integrate DVDs and CD-ROMs and Windows via SCSI or R232 ports, and then telecommunicate the whole mess to a host." Despite the complexities involved in the design and creation of multimedia materials, it is important to plan before executing the development and production of learning materials, integrating print, audio and video into a seamless and fluid learning experience.

Unlike face-to-face teaching, the design and development of interactive multimedia materials involve knowledge, skill and expertise of a number of individuals. Therefore, assembling a team to undertake the task is almost a prerequisite if a high-quality product is the ultimate objective. The size of the team and the skills of the individuals making up the team will depend on the sophistication of the knowledge product to be developed. It is possible, though not advisable, as is often the case in many small operations, for one person (normally the content expert) to create the learning materials singly. At a minimum the course team should have the contribution of a content expert and an instructional designer. Complex course team composition may also involve audio and video producers, editors, ICT specialists, publishers and project managers. Teams can be drawn from a single institution or in collaborative arrangements from partnering institutions. The team approach will require a totally different work culture from what is normally associated with academe. According to G.L. Hanley⁶, the new work arrangement will require: ". . .

changes in how the faculty views their teaching. The view of the teaching and learning process as consisting of the instructor, the instructor's assignments, and the students must give way to that of one where teaching and learning is the product of an integrated group of individuals, many of whom are never seen by the students."


There are at least four discrete phases in the design and development of interactive multimedia materials. They are:

- *Concept development phase:* This phase involves defining the curriculum of the proposed course, identifying the media mix, assembling the team of expertise needed to put the course together and confirming the institutional commitments to the development of the course. These commitments will include making available the technological, financial and administrative resources of the institution for the development of the course.
- *Demonstration and validation phase:* This phase includes the development of the course blueprint as well as all related activities during the delivery phase of the course. In the blueprint, a clear and concise map of the course will be detailed. The map will also outline each and every unit of the course (its aims, objectives and outcomes), study time required, and other learning resources besides the core course materials needed. The blueprint will also contain information such as text books and other readings needed to transmit content, non-textual items, links to Web sites for reference and enrichment, e-mail facilities and connections to instructors and peers, asynchronous chat rooms, real-time chat rooms, threaded

bulletin boards and assessment protocols relating to the delivery mode.

- *Design and development phase:* This phase is the creation phase where the content is created in a sensible, sensitive, comprehensive and interactive fashion. This phase requires close attention to language, accuracy, correctness and academic integrity of the content. Over the last two decades many excellent guidebooks have been written on the subject and are well worth looking into.^{7 8 9 10}
- *Production and delivery phase:* This final phase focuses on the production of the materials and the packaging of the course into a cohesive whole. The nature of production and packaging will depend very much on the mode of delivery (online, virtual, flexible or mixed). Courses that are delivered either in a mixed or flexible mode may require students to have the learning materials in a format that allows them to study off-line but with appropriate facilities for either interpersonal and/or online interactions with instructors and peers. These may be CD-ROMs and DVDs. On the other hand, courses that are delivered completely online through well-designed Web access require clear roadmaps and instructions for learners to navigate through the course totally online. During the course of this dialogue, you will hear David Porter describing such a system using basic frameworks and standards.

Ladies and Gentlemen, in the next three days we hope to learn from you and at the same time also share with you Commonwealth experience in putting together partnerships that will help in the creation of knowledge products by the few who have the talent for the benefit of the many whose learning

could be enriched by using these products. I look forward to our discussions and wish this dialogue every success. 

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Spotlight on...

Madhya Pradesh Bhoj (Open) University, Bhopal

The Madhya Pradesh Bhoj (Open) University (MPBOU) is a state open university, established in 1991 at Bhopal, Madhya Pradesh, India with a jurisdiction of operations within the state. It is the main University for providing easily accessible and quality higher education through open and distance learning (ODL) and training for the whole State. One of the important objectives of the University is to provide opportunities for higher education to a larger segment of the population and to promote the educational well being of the community. The MPBOU has an enrolment of 1,08,000 students with an annually growing enrolment.

One of the main aims of the University is to develop and provide an easily accessible system of higher education and training, by the use of different modes of educational inputs such as lessons in print, text books, contact teaching, practical classes, TV/Radio/Video/Audio programmes, using satellite communication, even in remote and less developed rural and tribal areas. The University has also given special emphasis to learners from rural/tribal areas and those who are physically challenged.

The University is governed by a Board of Management (BOM) constituted by the Chancellor of the University with senior experts in the field of Distance Education, academicians, Chancellor's nominees and several Government officials as members. The Vice-Chancellor is the Chairman of the Board.

Mission and Vision

The University has listed its mission and vision as under :

- Seamless, Effective and Sustainable interventions to develop, upgrade and recycle human resources for areas critical to National Development including the well being of the community.
- Success through Access
- Focus on education in Rural, Tribal and under developed areas of the state.
- Sustainable, effective and dynamic system of education.
- Need based education for the well being of the community.
- Cost effective extension and promotion of quality Education to reach the unreached.
- Determination of standards and maintenance of quality in Distance Education.
- Interventions for the well-being of the community.
- Omnipresent education using emerging Information and Communication Technologies

Programmes of Study

MP Bhoj offers 16 postgraduate programmes, 6 Bachelors programmes, 13 Postgraduate diploma programmes, 2 Advanced Diploma programmes and 4 Certificate programmes in Management Studies, Computers and Computing, Information Technology, Public Administration, Sciences, Social Work, Social Sciences, Nutrition and Health Education, Library and Information Science, Tourism and

Languages. These academic programmes, represent various fields of studies and provide wider opportunities to the learners to choose from.

The Programme Delivery Systems

The University operates through a three-tier system of functioning. The Headquarters of the University is at Bhopal. Nine Multimedia Regional Centers of the University are located at Bhopal, Bilaspur, Durg, Gwalior, Indore, Jabalpur, Jagdalpur, Raipur and Rewa, as regional link centers for the delivery of the University's programmes through a large number of Multimedia Study Centers of the University. The main office, directly manages the work of the Study Centres around Bhopal. The Multimedia Regional Centers supervise the work of several Multimedia Study Centers in the respective regions. As of today, the University has already set up the following kinds of study centers.

Multimedia Rajiv Gandhi Study Centers : Imparting education, mostly at under graduate level is the aim of these centers and 99% of such centers are in places where there have been no facilities of higher education. So far, 33% of such centers are in tribal dominated areas of the State.

Science Undergraduate Programme Centers : One hundred thirteen study centers have been established across the state in different Government Science Colleges for undergraduate non-collegiate science education. Earlier, the other conventional Universities of the state were enrolling such students.

Study Centers for Medical-knowledge and Skill up-gradation

of Rural Doctors and Paramedical in the Area of RCH and Nutrition: The State of Madhya Pradesh has, unfortunately, a very high rate of infant mortality connected with Reproductive Child Health (RCH). Jointly with the Ministry of Health and Family Welfare, Government of India, the MPBOU is handling knowledge & skill up gradation training programme of rural doctors and paramedical through ten study centers at Raisen, Chhindwara, Jhabua, Morena, Jabalpur, Raipur, Bilaspur, Tikamgarh, Rewa and Mandla. The University is planning to introduce a diploma level course in Nutrition.

National Level Study Centers for the B.Ed. (SE-DE) Programme are operating in 65 study centers in 15 States of the Country under the guidance of qualified Study Coordinators.

INNOVATIVE PROGRAMMES

Massive Information Technology Based Projects

The University has been in providing major inputs in developing human resource required for IT based applications. Some of the major initiatives taken in this direction are given below :

Computer Literacy and Studies in Schools (CLASS) Project is a major project funded by the Government of India and is being jointly handled by the Government of Madhya Pradesh and the University. This project covers 394 Study Centres in Govt. Institutions in the states of Chattisgarh and Madhya Pradesh.

Computer Literacy and Awareness Programme (CLAP) is another major project being jointly handled by the Government of

Madhya Pradesh and the University for a very massive computer education. The main idea is to encourage non-government initiatives for making computer education available in our Institutions. The head of the institution is encouraged to get the facilities for training arranged by non-government providers and the University gives technical inputs and monitors standards of training to ensure quality.

Basic Certificate in Computer Operations (BCCO) Looking to the major IT manpower requirement in the country, a decision was taken by the University to work towards this goal. BCCO is a self-financing scheme where by a nominal fee is collected from the students and a six month course in computer education is conducted which can be offered concurrently with other programmes of study in educational institutions.

Headstart is a Project of Rajiv Gandhi Shiksha Mission to provide computer-enabled education and develop basic computer skills for all students in about 5000 Jan Shiksha Kendras of Madhya Pradesh during the next three years. It seeks to quickly close information gap for students in the most disadvantaged situations like the remote tribal schools in the state. The University is the walk-along companion to the Rajiv Gandhi Shiksha Mission on the Headstart Project to provide technical inputs including generation of innovative software for the project on a fairly massive scale. The massive training of teachers required for the Head Start Project in basic IT is also being provided by the University. 

Source : <http://www.bhojvirtualuniversity.com/>

Case Study...

"WOOD & CYBER" ... The Nangi Village School

*Jules
I Will Return...
Pakka ho*

*For a new Nepal
And
To the people of Nangi
The Way*

*What is hidden in the
Time
Will come out
In Silence*

*Listen to the voice
Which comes
When you are
Listening in peace*

*Look at the
Eye
And know that
She
Has seen it all*

*Listen, See and Step
On your way
Into Tomorrow.*

– Jules Wehberg
dreamstage@netnet.nl

This is what one of the visitors to Nangi wrote to BBC News about the Nangi Village School Project in Nepal. Unique in the approach with a zeal to get connectivity to the internet and access to knowledge, Nangi Village School Project is a grass roots initiative by an individual educational pioneer, Mahabir Pun, hoping to break the cycle of poverty in his mountain village of Nangi by taking it into the computer age. Having founded Himachal High School, he sees the Internet as the way to improve children's education.

To connect the village to the Internet, Pun installed two small hydro-generators in the stream near

his village for a power supply to the school. Then he had computers donated from Australia, Singapore and Malaysia and used parts from the U.S. From the parts, Pun assembled the first computer while the students and teachers assembled the remaining ones after his demonstration. At present there are 15 computers in the school for 300 students from six neighboring villages.

The village got a telephone in 1998 with the intention of obtaining Internet access for the village. However, the quality of the line was not good enough to carry the signal. Since then the villagers have been attempting to rectify the situation. In the interim the only option is to walk down for a full day to the nearest city where an Internet service is available.

We would like to reproduce what Mahabir Pun has to say about the Project in his own words through BBC's Website
<http://news.bbc.co.uk/1/hi/sci/tech/1606580.stm> :



Mahabir Pun
(Nangi Village in Background)

"The internet has been a great help for Nangi, even though we do not have a connection here.

One of my professors had helped me to put a simple website about my village and school on the web in 1996. That website has connected my village to the outside world, and I think my village is the first one in Nepal to be on the internet.

If we walk about six or seven hours outward in any direction from our village and ask the people there where Nangi is, most of the people will have no idea.

With the simple website we have now, people from around the world have been able to locate my village and have come to volunteer.

We regularly get volunteers from America, Britain, Australia, Singapore, Switzerland and Malaysia.

Those who have not been able to visit have also helped different ways, such as sending books, teaching materials, and money as a donation.

Moreover, students from Australia and America have been writing letters to our pupils as penpals through ordinary mail.

'Wooden' computers

In order to connect my village to the internet, I have installed two small hydro-generators in the stream near our village for power for the school.

We got some computers from Australia, Singapore and Malaysia as donation. I also collected some used computer parts in the US and



took them to the village and assembled the parts in wooden boxes, building 14 computers.

I carried the parts in two suitcases. Most of them were 486 DX2 models and some Pentium I models, with Window 95 and Microsoft Office 97.

I built the first one, showing the students and computer teacher how to do it. Then they built the rest of them.

We bought new monitors for them from the city because I could not carry the monitors.

Now, we have 15 computers in our school, which has about 300 students from six neighbouring villages. As far as I know this is the only community school in the entire country that provides computer classes for high school students.



Until now only rich private schools in the cities offered computer classes to their students. Most students in the rural areas of Nepal have never seen a computer.

Internet is a day away

We got a telephone in the village in 1998. My whole idea for bringing the telephone was to have internet access in the village. However, I found that the quality of the line was not good enough. Since then I have been trying to find ways and means to get a telephone line good enough

to get the internet in the village. At the moment, we have to walk down for a full day to the nearest city where an Internet service is available to communicate with people from around the world. We do it about once a month. It would be so nice to have the Internet in the village so that we can respond immediately.

I found out that we could use satellite telephone to get Internet access to our village. However, that is beyond what we can afford. I always kept my ears open to hear if there is some way to get net access in my village.

Benefits from the web

I have seen that even a small village like mine can benefit a lot from the Internet.

We can use it to generate money for the village, to provide quality education for our children, to provide information about our culture to children all over the world, and to invite volunteers to come to our village.

If everything goes well, I plan to build a college in my village and provide computer courses to the students. This will open a door for us to produce computer programmers in the village, and produce software for the big firms around the world.

This may sound like an ambitious idea, but I believe that it can be done. The main purpose behind this idea is to create jobs for the students who graduate from our college.



Internet access will be the key for the success of this plan."

And now... what some of the visitors wrote in the Guest book
April 1, 2000

What to say, the problem is that my English is not good enough to describe my incredible warm feelings about Nangi and its people. "Ekdam Ramro chha," but much more than that. When I arrived here on the 4th of February my life changed. I didn't know that humans are such beautiful creatures. In Nangi, everybody is rich without money and happiness seems to be emperor in the village. Although poverty has its negative sides in poor education or food, the spirit becomes so much bigger when there is no money.

Everyday is a new experience. Everyday the mountains seem more beautiful. Everyday in Nangi I live for 101%. Malai Nangiko mancheharu derai elidam man parcha. People of Nangi, without you this could never happen to me. With whole my heart I say to you all...

Thank You Very Much, Derai
Dhanyabhad

Jules Wehberg
Vinkenlaan 23
NL- 5427 VA, Boekel
The Netherlands

May 11, 2000

I cannot believe my time in Nangi is over, but as I hate goodbyes and because I know I will return as soon as I can, this is only temporary.

When 6 months ago I just came across Mahabir's web site, I had visions of what volunteering in Nangi would be like. My time here far surpassed my expectations. Although for the weeks I was the lone volunteer, I was always surrounded by warm and caring people who looked out for me. From my 1st-3rd grade morning visitors, to my 8-9th grade evening Nepali lessons by candlelight as there was no electricity at times, to the visits by teachers dropping in to say hello, I was never lonely and never homesick. In fact, it was easy to

forget that I was on the other side of the globe.

Katherine Preftes
42 Blish Place
Dumont, NJ 07628, USA

Mahabir Pun, reported the Nangi Village School Project as an ambitious plans that he achieved and building it up to strengthen the Project of empowering his villagers.

Mahabir Pun, to enhance his work force created the Nepal Volunteer Programme to :

1. Provide a first hand experience of Nepalese village life especially for those who grew up in cities and in western culture.
2. Provide a teaching opportunity in a public high school and/or elementary school in Nangi village and other schools in its neighborhood.
3. Provide an opportunity to learn about the natural environment, the environmental problems of the region and work on conservation.
4. Provide an opportunity to teach skills such as handicrafts, food processing, weaving, and knitting so that villagers can produce something saleable to earn cash income.
5. Provide opportunity for community service on public health, sanitation, and culture conservation.
6. Provide assistance for the participants to do research in such areas as anthropology, health, ecology, vegetation and culture of the region.

With above objectives, the plans he chalked and reported through his website <http://www.rip.physics.unk.edu/nepal/NEWS98.html> in 1998, clearly describes the milestones of the Nangi Village School :

1. Established a Library "Nangi Public Library"

2. Established a Computer Center
3. Installed a Micro-hydro generator
4. Started Yak Raising Program
5. Proposed for the Establishment of a Eco-Village Resort
6. Received Scholarship from Empower Nepal Foundation
7. Received Financial Support from Abroad
8. Started Penpal Programs
9. Completed Building Construction
10. Received Volunteers from Abroad



Lessons from the Nangi Village School Project

Discussions about the digital divide and about the connectivity and access problems in developing countries make the assumption that infrastructure has necessarily to be in place for the villagers to benefit. Some one or some agency, preferably government or a donor agency is looked up to for support.

The Nangi Village School Project demonstrates that local low cost initiatives can make a major difference. One need not wait for a well meaning government to come to the rescue of villages.


There are many other stories like the Nangi Village Project and a large proportion of these stories speak of the initiatives emerging from people whom we would call the "have nots" those with little access to technology. But it is precisely these people who have something special the drive and the ability to invest in time and invent without fear of failure.



Micro projects like Nangi do succeed because they address local problems and realities with local solutions brought together by a local catalyst or change agent, in this case, a teacher. Mahabir Pun has *homophily* commonness in background and needs with the villagers. He also has *heterophily* he is a little different from the villagers, given his exposure to external education.

Then comes the question can the Nangi Village Project be upscaled to other parts of Nepal or be replicated in other parts of the world. The upscaling of projects brings in the element of centralized decision making, cumbersome processes of hardware and software acquisition and a slowed down pace of response and reaction. The larger the project with increasing number of partners, the greater the in built inertia and initiatives less responsive to local needs. Thus, initiatives such as this project cannot be upscaled.

A second question that comes to mind is that initiatives such as the Nangi Village Project are highly personality dependent. To what extent the initiative will develop without the single minded devotion of an individual is open to debate. And the success of any long term effort depends on the institutionalization of an individual's vision and commitment.

Supporting initiatives such as the Nangi Village Project would go a long way in bridging the digital divide by offering local solutions to global problems. 

Contact address : Mahabir Pun, Himanchal High School, Nangi-2, Ramche VDC, Myagdi district, Nepal; punm@yahoo.com.

Case Study prepared by Dr. Usha V. Reddi and Pankaj Khare, CEMCA

BiblioFile...

Plomp, Tjeerd, Anderson, Ronald E., Law, Nancy and Quale, Andreas (Eds) (2003), *Cross-national Policies and Practices on Information and Communication Technologies in Education, Information Age : Greenwich, Paperback ISBN : 1-59311-018-9*

In the past few years nearly all national governments have established new policies on information and communication technology (ICT) in education. This trend is documented in this volume making it possible to compare 33 countries in terms of educational ICT policy and practice. Each country's chapter includes the following content: (1) structure of their educational system, (2) policies and practices related to ICT in education, (3) special issues, and (4) trends and expectations for the future. In addition, three chapters summarize and integrate the national chapters. This unique collection of papers addresses the needs of policy-makers, researchers and educators around the world. For instance, a conclusion that emerges is a paradigm shift in education worldwide from "learning ICT" towards "ICT for learning." This major undertaking would not have been possible without the expertise and hard work of the contributing authors, most of whom are the National Research Coordinators for the IEA SITES (Second Information Technology in Education Study) in their respective countries.

Source :

<http://www.infoagepub.com/products/product1/Wong3.pdf>

Craft, Anna (2000), *Continuing Professional Development A Practical Guide for Teachers and Schools, Routledge Falmer : London, ISBN : 041523770X*

The second edition of the book enables teachers to analyse their own experience of in-service work and offers tools for evaluating a focused aspect of work.


It helps teachers to:

- explore models of in-service provision,
- develop understandings of professional and institutional development,
- review and describe their own in-service work,
- develop and apply criteria for evaluating the quality and value of in-service work, and
- identify appropriate areas for future in-service work

Daniels, John (Foreword), Glass, Gene V., Vrasidas, Charalambos (Eds) (2002), *Distance Education and Distributed Learning (Current Perspectives on Applied Information Technologies), Information Age Publishing : London, ISBN: 1931576882*

This work discusses issues relating to distance education and distributed learning. There are essays covering: rethinking assessment for the online environment; the role of collaborative learning in social and intellectual development; and the embodiment of knowledge in virtual environments.

Gender and Education for all, The leap to Equality, Summary Report, EFA Global Monitoring Report 2003-04, UNESCO, www.efareport.unesco.org

At the World Education Forum in Dakar, 2000 it was resolved that the gender disparities in enrolment in primary and secondary education should be eliminated. This report measures efforts being made in all parts of the world to enroll more girls in school. It is the most comprehensive survey of education trends worldwide. It points out policies and strategies that can put all societies on the education path to gender equality. The Summary report is comprehensive document covering all seven chapters and documenting rights, equality and education for all, assessing the progress to gender strategies for EFA. 

Encouraging Doctoral Research in Media

In order to promote doctoral research in educational media, CEMCA invites research scholars to undertake research on utilization of educational media, and in various other areas of media and learning. A modest funding will be given to cover survey and report writing work. Registered research scholars are requested to apply in the application format, which can be available from the **Director, CEMCA**

Educational Media Consultants

CEMCA is in the process of developing a database of Educational Media Consultants in the region to promote the exchange of professionals and utilise the expertise available within the region. For inclusion in the database send your resume to Director, CEMCA or register online at <http://www.cemca.org>.

Regional Roundup...

17th Annual Conference of the Asian Association of Open Universities, Bangkok, Thailand


The 17th Annual Conference of Asian Association of Open Universities (AAOU) was held in



Bangkok, Thailand between 12th and 14th November 2003. Sukhothai Thammathirat Open University (STOU) hosted the Conference on the theme, “Networking and Partnership for Strengthening Collaboration in Open and Distance Education”. The theme of the conference was chosen with the idea of sharing of resources and networking education for both institutions and learners.



The Conference was marked by more than 74 paper presentations in 12 Concurrent Sessions, 4 Plenary Sessions and 5 Keynote speeches nesting in and around the theme. More than 20 countries were represented in the conference. Commonwealth of Learning was one of the sponsors of the conference. CEMCA also participated in the conference by

exhibiting its publications and a paper presentation on “Knowledge Discoveries on Student Support Network in Distance Education : “Collaboration is the Key” by Mr. Pankaj Khare, Programme Officer. 

UGC-COL Dialogue on Enhancing Higher Education through E-Learning

International specialists in the field of learning objects and digital repositories, Vice Chancellors of Indian Universities, and Heads of key inter-university centres, industry representatives and eminent educationists came together for a two and half day dialogue from November 17th to 19th 2003. Their mission : to develop a framework and plan of action to use e-learning to enhance the quality of Indian higher education.




The Commonwealth of Learning and the University Grants Commission, as part of an ongoing process of collaboration between the two institutions, jointly organized the dialogue. The dialogue, around a round table at the India International Centre was inaugurated by Prof. G. Dhanarajan, President and CEO, COL. Prof. Arun Nigavekar set the tone for the dialogue by describing the initiatives taken by the University Grants Commission in the application of ICTs for

education through the UGC-INFONET and outlined its objectives.

Experts from abroad included Mr. David Porter, Executive Director, BC Campus who served as a key resource person along with




Mr. Paul West, Education Specialist, COL. Prof. Asha Kanwar, Education Specialist, Higher Education, COL facilitated and coordinated the dialogue. Other COL education specialists also joined the dialogue.

After a day spent in sharing existing knowledge and experiences on the development, use and effectiveness of digital repositories in different parts of the world, participants at the dialogue entered into group discussions to develop a policy, content and technology operational plan for UGC to carry forward as part of its e-learning initiatives. 

National Consultation on EDUSAT in NIEPA

EduSat, the satellite aimed at educating the Indian nation across age-groups, regions, professions and people from all walks of life is set for launch in 2004. The Dr K. Kasturirangan, Chairman, Indian Space Research Organisation described (ISRO's) dream to contribute to national development through ushering in satellite supported services in education, health, agriculture, etc. He was inaugurating the National Consultation on EDUSAT at National Institute for Educational Planning and Administration (NIEPA), New Delhi hosted jointly by ISRO and NIEPA. The Chairman

said that ISRO has already begun work on the design and development of the satellite, and he urged the education sector to speed up the process of preparation of contents.

The Department of Space, Government of India will launch a dedicated satellite for education with 72 channels that could support broadcast and interactive radio, broadcast and interactive television, video conferencing, computer communication, etc. for education. The concept is contained in a document, Educating the Nation: the Need for a Dedicated Satellite, authored by Professor Marmar Mukhopadhyay. Professor Mukhopadhyay directed a National Consultation on EDUSAT to develop the roadmap for preparing the ground segment to make full use of the educational satellite offered by the Department of Space. 

EduSat Specifications

GSAT-3 (EDUSAT) will carry five Ku-band transponders to provide coverage through five regional beams with spatial frequency reuse. In addition, two Ku-band and six Extended C-band transponders are included to provide India coverage. GSAT-3 will be used for interactive education.

Nation	India
Type / Application	Experimental Communication, astronomy
Operator	ISRO
Contractors	ISRO
Equipment	7 Ku-band, 6 ext. C-band transponders
Configuration	Insat-2 Bus ?
Propulsion	LAM
Mass	1800 kg ?
Orbit	GEO
Satellite	GSat 3 (EDUSAT)
Date	2004
Launcher	GSLV Mk.2

Source : <http://www.niepaonline.org/whatsnew.htm> and "ICE Age", Newsletter of DECU-ISRO, 03, November 2003.

Worth While Web...

Any institution must understand the potential of its human resources to ensure that its people are attaining the knowledge and skills they need to effectively contribute towards fulfilling the institution's mission. Training and orientation programmes, thus, become an integral part of human resource development. How effective a training programme could be depends on the attitude and motivation of the people undergoing training and on the resource person(s). At the heart of human resource development therefore is **Training Needs Analysis (TNA)**. TNA is a pre-training exercise to understand the requirements of both, trainees and the trainers, availability of resources and the psychometric mapping. In this section, we bring to you some web sites that provide insights and details of TNA.

http://www-med.stanford.edu/school/HS/training/Topics/needs_analysis.html

A good write-up on the theory of TNA. It covers Job Assignments and hazards, Trainee Background, Work Environment, Training Conditions, Informational and Training Aids, and Training Needs.

<http://www.rsc-ne-scotland.ac.uk/tna/>

A case study on the TNA from JISC Regional Support Centre, Scotland North and East.

http://iserv.tay.ac.uk/manconns/Documents/training_needs_analysis.htm

The site details various training needs in an educational organization, identification of areas requiring training, basic theme and the topics that can be covered in the training programmes.

<http://www.qaff.com/tna/cadmin.htm>

The TNA comprises of Motivation test, Windows & MS-Office, Psychometrics and Learning Style Assessment

One can explore the following web sites as well :

<http://www.hrdonline.co.uk/index.htm>

http://www.attitudesurvey.co.uk/Att_why.htm

<http://www.trainingneedsanalysis.co.uk/>

<http://www.aimwa.com/infoOnlineTNA.cfm>

<http://www.rsc-ne-scotland.ac.uk/tna/teaching.html>

http://www.brefigroup.co.uk/training/training_needs_analysis.html

http://www.ccrs.nrcan.gc.ca/ccrs/learn/tutorials/geotraining/needs_e.html

<http://staff.library.usyd.edu.au/training/minutes/TNAReport.htm>


*CEMCA News...**Education for All: A resource tool kit for media professionals*

Education Can Make News is the title of a multimedia resource tool developed jointly by UNESCO,



Asia Pacific Institute for Broadcast Development and CEMCA for use by media professionals throughout the world. The tool kit is a stand-alone learning module. It can also be used by trainers for training media professional on how to report on Education for All themes. Resources and links to important websites are also given

The resource tool kit consists of a multi media CD and a print manual. All aspects of EFA, from the Dakar goals, to summaries of major concepts in EFA, resource documents, case studies and examples, graphics including selected videos, and exercises for journalists are included.

The CD will be available for free public distribution by early 2004 and can be obtained by contacting the nearest UNESCO office or the AIBD office at <http://www.aibd.org.my>. 


Educational Multimedia

Multimedia has always fascinated educationists because of its ability to communicate difficult and abstract concepts in a simple way. The fascination has to be taken alongside a certain nervousness among teachers who understand its potential value but find it a difficult medium to design and develop.

Many materials on multi media development available in the market are for people already familiar with IT. But multimedia has a grammar all its own, and teachers to use it effectively must learn the grammar.

As part of its mandate to develop knowledge resources on various applications of media in education, CEMCA has developed a multimedia product targeted specially to demystify the product and to help any teacher to develop materials that can be used in different ways.




The publication and CD are both available on request from the Director, CEMCA and by writing to us at cemca@nda.vsnl.net.in 

Staff News

D. Rukmini Vemraju comes to CEMCA as Programme Officer from TALEEM Research Foundation,


Ahmedabad, a literary, scientific educational society and trust engaged in social science, media and educational technology research.

With a background in communication and educational technology, Vemraju brings with her a varied experience in educational technology design, development and research. She has a masters in Communication and Journalism from Osmania University, Hyderabad and about twenty years of varied experience in the field of communication spanning advertising, creative writing, educational product development design., research and project management.

Vemraju is a keen learner of Indian languages, a movie buff and enjoys Indian classical music and Urdu ghazals. 



Mr. Pankaj Khare joined CEMCA as Programme Officer in November 2003. He is M.Tech. (Applied Geology) and

Postgraduate Diploma in Distance Education (PGDDE) and having 13 years of experience in distance education. Mr. Khare comes from Indira Gandhi National Open University, New Delhi where he is Deputy Director (Programme Evaluation and Feedback), Planning and Development Division. 

Technology Tracking...

Web Conferencing : Advances in the technology

Pankaj Khare

Web conference in a synchronous mode is a collaborative strategy of pedagogy where real time interactivity is the key. There are both opportunities and challenges for integrating pedagogical principles in Web-based instruction, but there must be a judicious mix of both contents and the technology.

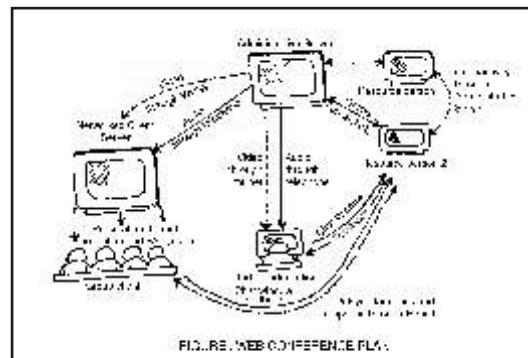
With advent of Web based technology, the most popular mode of low cost communication has been e-mail. This mode of communication is asynchronous and does not have room for conference or direct interactivity. The system limits communication between two individuals with copy of text info to many. The group discussion systems through e-mails gave rise to bulletin boards/discussion forums. Here again, the interactivity remained asynchronous with the flexibility of ones pace and time. Bulletin boards are little advanced form of e-mails where individualized approach changes to a group approach. Bulletin board and e-mail communications do not complete the two-way process until the sender has composed, written, and delivered the message and the recipients have read and assimilated the message.

The most popular synchronous discussion forums are "Text Chatting". Today, Text Chats have effective way of faster interactivity among the peers. The drawback of the technology is individual efficiencies on the machine. Among peers, all the individuals cannot have same speed of inputting the text, particularly in the

environment where reading and writing has to go together. Secondly, when the chat is to taking place in a group comprising more than 10 members, it becomes difficult cope-up with the responses pouring in. Such conference lack human touch as there is no audio or video involved. Still the technology permits web conference on a low bandwidth. Still, written communications have an advantage over verbal in that the ideas have an extended life. The written idea is available for review and reflection in its originally stated form for those who were not present at its initial delivery. To overcome the problems, modified chat is audio chat. The audio could be transmitted through web and it does have added advantage of text chat. The technology could not flourish on low bandwidth connectivity as the transmission loss and transmission interval was greater. Enhancing the technology, Net Meeting came into existence with the provision of video and audio both. This was the first of its kind where two-way video and two-way audio communication takes place. The problem of connectivity on low bandwidth remained same with added disadvantage of web delay.

Web Conferencing

The Web conference is a third generation application of the



Internet devised with objective to provide two-way to multi-way communication. Using the wide area networking technology, this single platform can support interaction, presentation and communication across learners, participants or groups. The Internet's ever-present transport protocols together with the Web's hypertext protocol make virtually any server reachable from virtually any desktop. This technology does not require any customized software at the recipient end. The Internet browser, with its simple and familiar Web pages, is the only tool needed for web conferencing. The universality of the Web, it is possible to integrate groups and systems. The system provides opportunity for "Just in time" response facility.

The technology of web conferencing uses a client-server model. The administrative server maintains the providers' end and the client server takes care of recipient end. Normally, any Internet browser is sufficient to provide access to the administrative server. Still, to facilitate the users/learners, customized software can be used. Use of customized software provides an opportunity to log-on effectively and efficiently.

The machine requirements are not specific; still, a high-speed machine provides better conferencing. At the learners/participants' end, moderate bandwidth is required to avoid Internet delays. 64 Kbps bandwidth is sufficient to attain good transmission.

Sometimes, web does not support audio if the participants are scattered globally. In such a case, it is better to have a separate telephone line to receive voice that can be amplified for the group. The learners' comments/questions can be sent via chat window to the provider of information to avoid discussion conflicts. The chat window also provide opportunity for resource person(s) to line-up, combine queries and avoid

duplication. Peer interaction can be enhanced through chat or discussion board without disturbing the main conference.

To generate a synchronous web conferencing, the most important point is scheduling. For determination of universal time of the conference, Greenwich Mean Time (GMT) can be used to

synchronize the conference among the groups, if located globally. The date and time is the key for participants to log-on to administrative server at the same time without missing the discussions.

The Web Conference is beneficial in many ways. The resource person(s) and the participants need

not to travel long distances for discussions. The inputs, in any form of presentation (data, graphics, opinions) can originate from any place or group and can be shared effectively and outcome could be put in force with little wastage of time. **ECA**

Pankaj Khare is Programme Officer at CEMCA

Research shows...

In adult learning, the sheer diversity of learners with different literacy levels, socio economic backgrounds, varying motivation levels, learning needs and styles pose challenges to adult educators. There is today, no coherent international understanding of how information and communication technologies can best be deployed to enhance non formal and life long learning.

We bring you some principles of adult learning, distilled from research and practice that should be considered when using ICTs for adult education :

- Adults learn best when free from undue stress, boredom, overload of information and when they are not trying to second guess the teacher's objectives
- Adults decide for themselves what is important to be learned
- Adults do not approach any additional learning with a "clean slate" and thus, learning without a concrete link to life has little value.
- Adults draw upon past experience as a benchmark against which they measure any new information. They may already have fixed view points on a given subject
- Adults have learning needs closely related to their lives and their work. They tend to define a useful learning experience as one in which they can link new knowledge to their experience, in order to solve problems. They thus expect information given to them to be immediately useful

- They expect the process of learning to be easy, convenient and interesting and the 'why' of learning is as important as the 'how'.
- Adults need to experience a sense of achievement as an impetus to further learning. This helps in building their self esteem and a confidence in their ability to learn
- More than anything else, adults have a significant ability to serve as a knowledgeable resource to the training as well as to fellow learners

The implications of the research findings relating to the learning styles of adults are many for those engaged in developing learning materials, whether literacy and basic education primers or ICT enhanced learning materials. The key to successful use of ICT enhanced learning materials will depend on the extent to which we incorporate these findings in the process of material development, from formative research, prototype development and testing, trailing, and summative evaluation. In all stages of the process, adult learners should be involved as active participants in the process of learning. Only by participation will commitment and consequentially, learning increase. **ECA**

Source : Reddi and Dighe (2000), Literacy and Adult Education through Distance and Open Learning in Chris Yates and Jo Bradley (eds) *Basic Education at a Distance, World Review of Distance Education and Open Learning*, Volume 2 : London : Routledge.

SMART Tips...

DATA MINING : A TOOL TO DISCOVER KNOWLEDGE

**Anurag Saxena
and
Pankaj Khare**

Data Mining is commonly used in the corporate sectors to arrange, exploit and surf knowledge. From this issue onwards, we present a series of write-ups to introduce the tools and techniques that can be used to explore knowledge embedded that are within the educational databases and could be utilised in the educational sectors in general and distance education in particular. This first write-up meaningfully defines data mining and its applications in Open and Distance Learning that could be drilled for knowledge discoveries.

Data Mining : Background

Philosophers and poets, businessmen and educators; all have struggled with the distinction between data, information, knowledge and wisdom for centuries. In today's world, the need is to take a practical approach to making these distinctions, while preserving consistency with both logic and experience (Lou Agosta, 2002). We focus on data mining, a practical way of searching and sifting of information to provide useful insights.

Mining means to dig, excavate, extract, quarry, remove, scoop out, unearth (Oxford Dictionary). It can be rewritten as removal, taking out, pulling out and drawing out of the most useful item from the cluster of other items. Data mining is therefore, a technique for drawing out useful knowledge from data. "Useful knowledge" again is a phrase that is context-specific. It depends on the context in which it is used and also whom on the person for it is used. Useful

knowledge is the piece of information that is valuable for the person using it in a particular context. For example, if you are getting your shoe repaired from a cobbler then for you the most useful information would be about the kind of leather the cobbler is putting on your shoe, while for the cobbler useful information would be how the leather piece can be cut judiciously so that there is minimum wastage and the remaining piece can be used to the maximum extent. Data mining is also used as a synonym for Knowledge Discovery in Databases (KDD). According to Han and Kamber (2001), Data mining is an essential step in the process of Knowledge Discovery in Databases and consists of an iterative sequence of the following steps:

- *Data cleaning* (used to remove noise and inconsistent data)
- *Data integration* (used to combine data from various sources)
- *Data selection* (used to separate data for analytical purposes)
- *Data transformation* (used to make data suitable for analysis purposes)
- *Data mining* (used to employ methods for extracting knowledge from the data)
- *Pattern evaluation* (used to identify interesting patterns representing knowledge)
- *Knowledge presentation* (used to present the mined information to the user)

Data mining requires an integration of various techniques that have come from multi-disciplinary areas, like statistics, visualization, artificial intelligence and machine learning. It is a process that uses a variety of data analysis tools to discover patterns and relationships in data that may be used to make

valid predictions (Two Crows Corporation, 1999). Different experts have defined data mining in the simplest way as, "data mining is a search of valuable information in large volumes of data" (Fayyad 1996; Han & Kamber, 2001; Berry & Linoff, 1997).

Data Mining in Education

Over a period, many Open and Distance Learning Institution (ODLI) have gathered huge quantities of student data, which, in certain areas, are maintained systematically (admissions, examinations, etc.) but in others, not so systematically (non-receipt of materials, counselling support, postal interactions, etc). *Today's knowledge society demands instant flow of information that is generally not available with the unsystematic database and thus institutions find it difficult to achieve intended goals.* Application of the techniques of data mining and its validation to create a knowledge path needs to be examined in various area components of Open and Distance Learning Systems (ODLS). The components are :

- 1) **Study Material Development** data related to pre-development surveys, need survey, availability of experts in the field, development time, and printing time.
- 2) **Student Registration** data related to geographical distribution, academic program options, choice of medium, age, sex, etc.
- 3) **Support Services** data related with learner support network, counsellor identification, attendance of learner, student query, library, teleconference, audio-visual utilisation, continuous assessment, cost of delivery, student feedback, etc.
- 4) **Study Material Production & Distribution** data related with printing schedule and performance, course inventory management, predictive despatch data mining, courseware distribution, management information systems, and maintenance database.

- 5) Evaluation and Certification data related with term-end examination, evaluation of term-end and continuous assessments, evaluators database, certification database, quality assurance, etc.

A lot has been done in the field of data mining in corporate sectors for enhancing marketing or to understand the psychology of buyers. But in educational research, the concepts of data mining are yet to be exploited. The components of pedagogy, listed above, generate and accumulate student data with completion of each academic cycle. As the ODLS is in its infancy, this accumulated data may not be sufficient to obtain knowledge that can improve decision support system. Still, the quantum is sufficient to understand the learners, learning styles and learning environments.

Unfortunately, distance education institutions are not exploring the possibilities of using the available datasets as is done in commercial sector. The patterns, associations, or relationships among all these *data* can provide *information* for better functioning of ODLs by converting the datasets into *knowledge* about past patterns and future trends of student behaviours.

As for as the dataset maintenance is concerned, the ODLS is yet to show evidences of an ideal vision of depositories in a central repository. Conceptually, centralization of data is needed to maximize user access and analysis but the delivery mechanism in ODLS calls for de-centralized operations and centralized data management. The process of "drill down" into summary information to view detailed transactional data needs to be done in distance education institutions.

The scope of data mining for effective learner support system could be more significant as it directly links with requirements of distant learners, physical infrastructure development for student support at the appropriate place, strengthening of existing set-ups, provision of timely feedback

to learners, and overall, removal of the shadow of conventional education system from the distance education system. Any weakness in the support system may give cause for students' frustrations. Even in developed countries, there exists a frustration among the students using high tech for their studies. The studies in the computer-mediated distance education are more anecdotal than systematically empirical or critical. Students' frustrations in the web-based course inhibit their educational opportunities (Hara, et al, 1999).

Data mining can assist to reduce frustrations and to create effective learning environment by identifying the basic learners' requirements. Distance learners may face different kinds of distances (Molefi, 1999), from sociological to psychological, geographical to cultural, etc.

Apart from the above, the physical separation of student-to-student (peer group), student-to-teacher and student-to-institution could also be accounted for.

Research in distance education is more concentrated on the development of study materials,

their comparison to traditional mode of education. It is more theoretical in nature rather than empirical. The operational areas have remained almost untouched though they are an integral part of the ODLS. A lot more needs to be done in these areas for efficient and effective delivery of programmes.

Areas of Application in Distance Education

With changed educational environment and the need to cope-up with the delivery deficiencies, some times, ad-hoc decisions play a vital role in restructuring the establishment of components. The future researches may include study of such archival data to determine basic modular conceptualisation of the delivery mechanism in time and space. It is time that new approaches, like data mining and knowledge discovery open new avenues in distance education for understanding the phenomenon and more importantly in devising methods which will ensure better teaching and learning process.

The table below depicts the possible application areas of data mining in distance education.

Table : ODLI's Data Mining Application Areas

S.No.	Area	Application
1.	Printing of Self-Instructional Course Material	Analyse data on printers/time taken in printing/allocation of work to printers.
2.	Continuous Assessment-Assignments	Analyse marks region wise/ Compare them with Term-end component. Verify the payments made for assignment evaluation.
3.	Admissions	Develop strategies to enrol new students, retain old students.
4.	Material Distribution - Stores	Decide what courses to be stored together (On the basis of Popular/Compulsory combinations), what to do with outdated or obsolete materials.
5.	Coordination	Maintenance of employees records, etc.
6.	Assessment Data	Check for trends in the marks obtained in assignment/ Project/ Term-end examinations.
7.	Study/Teaching Methods	Identify words/concepts that need more efforts form the student, Text mining.
8.	Demographic Studies	Analyse students on pre-admission data, data during their study and data on their views after passing out.
9.	Course Combinations	Analyse students on the basis of the course combinations they take and its effect on their performance.
10.	Drop-outs & Students on Roll	Analyse these students to discover what has haunted them and what forces them to stay on rolls.

A thought...

The need for data mining has arisen due to the long forgotten need of deriving useful information from data. The “data” referred here has a special property that it is massive, heterogeneous and distributed in nature. Today, world is full of data and the need is to use that data to find useful information that is hidden in the volumes. For example, thousands of students join the distance learning programs with different institutions and thus, become part of dataset. Each institution has a lot of pre-program data about these students but there are very few empirical studies, which highlights any useful insight into this data. It is thus rightly said that “we are data-rich but information-poor” (Han and Kamber., 2001).

In Summary

When the first microcomputer was introduced, it was launched with only two floppy drives (each floppy with approximate capacity of 640 kilobytes). One drive used to contain the operating system and other used to contain the application programs. The data that was generated was also saved in the floppy by using the same drive that was meant for the application program. The situation has changed dramatically today. The system today comes with a minimum 40 gigabytes of storage (equivalent to 80,000 floppy disks). The size of databases has also increased almost similarly. Today one can have a database running into several terabytes (one terabyte is equivalent to 1000 gigabytes). Now, such a big accumulation of data must have in itself lot of embedded information that needs to get explored to derive meaningful conclusion for the future.

Data mining assists the analyst by finding patterns and relationships in the data. It strengthens them by empowering them with tools that make their job easy. Berry and Linoff (1997) comments “data miners the people who apply this potent mixture of massive computing power, clever algorithms, business knowledge, and human intuition do not ply their trade in vacuum”.

For an educational database, data mining can be redefined as exploitation of learner centric knowledge for strengthening pedagogy, amplification in education dissemination, operational systematisation for satisfactory delivery of academic programmes and effective decision support.

To begin the analysis of any data, we have to select the data, arrange it for analysis, describe it by summarizing the statistical attributes, and visually review it in order to draw meaningful conclusions by inspection. This is called descriptive data mining. Once the basic properties of the data in question are identified, one tries to build a model on the basis of conclusions arrived at while describing the data. This is called predictive data mining. The exercise of data mining would be complete once you verify the model so obtained by predictive process.

We conclude the first part of this series by pointing out a strange similarity. Both data mining and distance education have emerged in the mid/late 1980s, made waves in 1990s and are poised to flourish in the new millennium. Both of them are a combination of various areas data mining a combination of database technology, artificial intelligence, machine learning and statistics, and distance education a combination of the subject, media

and communication technology and pedagogy.

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Book Review...



Kumar, Shailendra (2003)
European Libraries in New Millennium, Softlink Asia:
 New Delhi ISBN: 81-887-9700-6
 (with 2 CDs)

Sanjaya Mishra

Designed as a V-book, the book under review comes with 2 multimedia CDs in a beautifully designed jacket holder. With the tremendous influence of information technology in library operations, it is but natural for the author of this V-book to think of an innovative way to present information using the current technology. In fact, the use of a variety of technology in libraries has made life of the library professional and researchers/users easier to access knowledge embedded in information resources in variety of formats printed books, periodicals, audio/video cassettes, CD-ROMs and other electronic resources. This book is a travelogue by the author based on his study visits to Germany and the United

Kingdom through the Max Muller Bhawan, New Delhi.

The book is divided into three parts UK libraries, German libraries and technology-based activities. There are four UK libraries described in the book, which includes Eton College School Library, Pimlico School library, the British Library and the Bodleian Library of the University of Oxford. In the section dealing with German libraries, eleven libraries are covered from four cities Munich, Stuttgart, Cologne, and Hamburg. In both these sections, the author provides an overview of these libraries, their history, current status, technologies used, rules and regulations, etc. The descriptions about these fifteen libraries are illustrated with colour pictures. The most interesting part of the book is the critical analysis (in part 3) of the technologies used in the libraries covered in the study visit. It provides information on the latest technologies used in these libraries in the area such as circulation system, Online Public Access Catalogue (OPAC), electronic book, conveyor belt system, compact shelf system, etc. Many of these may not be available in the libraries of the developing countries, but they make the operation of the libraries much systematic and easier.

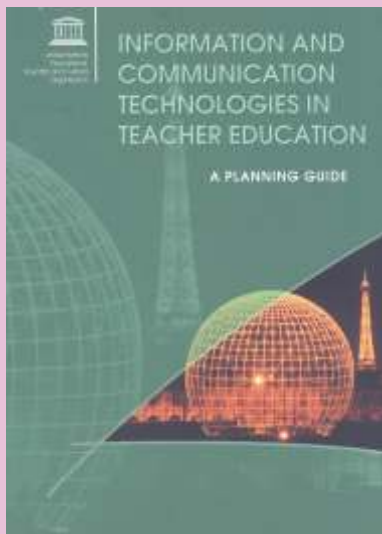
To review the book without discussing the features of the 2 multimedia CDs, would be unfair and inappropriate. These CDs auto run (with Flash player) to display a very smart and attractive front-end with navigation buttons. Some of these buttons such as information desk, books and periodicals, video conferencing, audio, and electronic library are not working. May be the author plans to bring out an

improved version at a later stage. However, what is available here in the CDs are more than the textual and pictorial information of the book. The CDs make it simpler for the readers to view the libraries through video clippings, which have audio narration to explain. The descriptions come live, when you watch the videos. There are more still pictures in the CDs, and all the textual information comes within a text box with scrolling facility. The V-book presentation is very useful for topics of such a nature, especially to teach about technologies used and comparative library practices.

The back-end technology used for the production of the V-book should be re-considered in any future versions to integrate the audio and video better. Also the printed text becomes redundant for those having access to CD-ROM drives. Moreover, the design of the printed text could have been planned for a tandem use and thus information about videos in relevant sections should motivate the readers to use the CDs. The textual presentation too is descriptive (reads like information brochure), and does not really follow the established patterns of a travelogue. However, when the CDs are used one gets a different experience.

The author's innovative approach to present information is a laudable one that merits reading, viewing, and listening. As such, it presents a new world of multimedia learning experience to library and information professionals. I am sure this V-book will open the gates for many such innovative approaches in the field of library and information science. **ECA**

Sanjaya Mishra, PhD is Senior Lecturer in Distance Education at Staff Training and Research Institute of Distance Education, IGNOU, New Delhi.



Information and Communication Technologies in Teacher Education, A Planning Guide.
Paris: UNESCO Division of Higher Education, 2002.

Usha Reddi

In education, the teacher is the change agent, the key individual who helps a learner to make the transition between information and understanding. And to serve as a guide or mentor to the learner, the teacher, in turns needs to be empowered through an on going process of learning.

Today's ICTs are increasingly seen as tools enabling teacher educators to narrow the gap between demand and supply of trained teachers. In almost every country, there are teacher training programmes and a recognition that "there is no alternative" to the use of ICTs for teacher training and for use by teachers to enhance the quality of instruction. Between the recognition and the reality, however, are knowledge gaps among policy and decision makers

and among teacher educators as to how one should proceed, mechanisms that should be followed, global standards and assessment techniques and lessons from best practices.

These are the gaps that the planning guide commissioned by UNESCO and under review seeks to answer. It is a step-by-step guide to the use of ICTs as an integral part of induction and in-service training among teachers as well as for the integration of ICTs as part of the school curriculum.

Divided into eight parts and supported by a glossary, the volume links global contexts and frameworks in teacher education to the specifics spelling out elements of curriculum planning, integration of ICT in teacher education, developing and implementing strategic plans, managing change and innovation, quality assurance standards; images and scenarios.

Simply written and packed with useful information and analysis, the guide takes into account four themes (context and culture, leadership and vision, lifelong learning, and the management of change) that must be understood as a strategic combination of approaches to help teacher educators develop four core competencies. These competencies, in turn, include pedagogy, collaboration and networking, social and health issues, and technical issues.

The cases of best practice, of successes and struggles in different parts of the world are particularly

useful as they demonstrate a process from planning to implementation to evaluation. The MATEN (Multimedia Applications for Telematic Educational Networks) project in Central and Eastern Europe; MirandaNet (a learning community to support teacher educators in the U.K); School Networking in Africa; the Enlaces Project in Chile all demonstrate what can be achieved through collaborative efforts, despite resource and infrastructure scarcities.

As I read through the volume, I was reminded of how useful UNESCO planning guides have been in the course of my own work in building, establishing and integrating ICTs in education. I measured my own efforts against the strategic technology plan prepared in the book and could quickly identify the missing links in my own and Asian efforts to deploy ICTs. Questions raised in the guide help to provide system and structure to planning, implementation and evaluation. The detailing of international standards, especially followed in the U.S, provide the benchmarks against we can measure our own efforts.

This is a volume, like many others of UNESCO in the field of education that is a must for any individual and institution to keep within arm's reach on a desk or shelf. **ECA**

Dr. Usha V. Reddi is Director, Commonwealth Educational Media Centre for Asia (CEMCA), New Delhi

News in Brief..

Interaction of Developers and Deliverers of Student Support for Computer Programmes in IGNOU, New Delhi

The interaction programme was a new initiative aiming not only at uniform scheduling for delivery of computer programmes but also tried to compile good practices in student support adopted by various delivery nodes. The programme was a success in sharing the thought process of the developers and deliverers on student support, sharing of experiences to overcome the bottlenecks, disseminating knowledge for better and strong student support network and surfacing common problems in student support. The occasion was



Any advance planning can make the difference in operations, whether in corporate sector or in educational sector. Pioneering the idea of an interaction among the faculty of School of Computer and Information Sciences and the Coordinators of Study Centres and Tele-Learning Centres of Indira Gandhi National Open University, Regional Centre, NCR of Delhi-I of IGNOU convened one-day programme on 28th November 2003.



marked by the presence of Prof. S.C. Garg, Pro-Vice Chancellor, IGNOU. The initiative taken by Regional Centre, Delhi-I shall definitely improve the student support system in forthcoming academic cycle. **ECA**

AAOU 2003 Awards



Prof. Ram Takwale

Council, India, eminent educationist and former

CEMCA congratulates Prof. Ram G. Takwale, Chairman, National Accreditation and Assessment

Vice Chancellor, Indira Gandhi National Open University, New Delhi on his receiving the AAOU 2003 award for service to open and distance learning conferred to him at 17th AAOU Conference, Bangkok in November 2003.

The award is recognition of his never-say-die spirit, his innovative and creative thinking and his activities on the forefront of educational technology, ever striving to provide better educational opportunities and to reverse the digital divide. **ECA**

NCERT signs MoU with COL

India's National Council of Educational Research and Training (NCERT) has signed an MoU with the Commonwealth of Learning (COL) in November 2003 to jointly develop competence among teachers of South Asia and sub-Saharan Africa.

According to the MoU, COL would provide 80,000 Canadian dollars to support the project and the NCERT would develop distance learning material using various media to enable teachers of selected countries to upgrade their qualifications.

The project envisages not only developing the courses but also assessing the students off and on line. The NCERT, according to the MoU, will print and publish all instructional material, including the development of a handbook to train all personnel involved in providing learner support to teacher education institutions.

Source : *Tribune News Service* **ECA**

Software Review...

Macromedia Authorware 7.0 as Learning Applications

Asha Pandey

Macromedia Authorware 7.0 is one of the leading authoring tools for creating interactive, rich-media learning applications. Authorware integrates graphics, sound, animation, text and video into compelling rich-media learning solutions.

It is **optimized for building e-learning applications**. The Authorware interface provides a fast and easy environment for creating interactive applications. Drag-and-drop icons support rapid application prototyping and development without the need for extensive scripting. The flowline provides an intuitive representation of the structure of large, highly branched learning applications.

System requirements:

Component	Authoring	Playback
Processor	Intel Pentium II or higher	Intel Pentium II or higher
Memory	32MB RAM	16MB RAM (Microsoft Windows) 24MB RAM (Mac)
System software	Windows XP, Windows 2000, Windows 98SE	Windows XP, Windows 2000, Windows NT 4.0, Windows Me, Windows 98SE Mac OS 8.1 through OS X
Drive	120MB of free disk space and a CD-ROM drive	Not applicable

Unique strengths for teacher-developers:

- Intuitive visual authoring interface
- Pre-built learning functionality
- Versatile delivery

Authorware, with its unique and intuitive visual interface, provides the greatest ease of use and the highest level of developer productivity for creating learning applications.

To build applications, authors drag icons onto a flowline and then fill in the content with simple menus. Minimal scripting or programming is needed to create engaging, interactive applications.

The application can be delivered across a broad range of platforms, including corporate networks, CD and the web.

Authorware 7:



The icon based Authorware interface

Top 6 new features in Authorware 7.0 that make it a great learning content authoring tool:

1. **Common Macromedia User Interface** : Reduce learning time and speed development with the familiar Macromedia user interface. Dockable panels can be grouped together, collapsed, or expanded as needed, providing a smooth, highly configurable workflow.

2. **Microsoft PowerPoint Import** : Leverage existing PowerPoint presentations to create rich multimedia e-learning content.
3. **DVD Playback** : Integrate and play DVD video in Authorware applications. DVD video has replaced Laser Disc technology as the standard for interactive training and kiosk applications.
4. **Accessible Content for People with Disabilities** : Generate tab navigation and captions, and turn text into speech to comply with accessible software legislation.
5. **XML Import and Export** : Create dynamic, data-driven applications by importing or exporting web-standard XML files into other applications.
6. **Apple Mac OS X Playback** : Play back Authorware e-learning applications on systems compatible with Mac OS X.

More on Authorware:

Intuitive Flowline- Icon-based authoring

The Authorware 7.0 visual interface lets you develop rich-media e-learning applications without scripting. Just drag and drop icons to create your application's logical outline, and use menus to add content.

Powerful Templates and Wizards

Take advantage of templates and wizards that address common learning functionality, such as student logons, course frameworks, questions, quizzes, and more. Or create your own reusable models or Knowledge Objects.

Built-In Interactivity

Interactivity is built right into Authorware 7.0. Add content, and then choose from 11 response types to bring your content to life.

Enhanced Rich-Media Support

Integrate a comprehensive array of media types, including Macromedia Flash MX and Microsoft Windows

Media Player. Create dynamic, data-driven applications by importing external data stored in web-standard XML files.

Macromedia Flash MX Support

Import Macromedia Flash MX animations into Authorware 7.0. Zoom, scale, play, and pause Macromedia Flash MX content within Authorware 7.0, and capture and respond to events.

Media Synchronization

Cue content such as text, graphics, or animations to specific points in a narration, soundtrack, or video. Use sound and movie icons to trigger events based on media position or timing.

Authorware Application Accessibility

Make your learning applications accessible to all users. Use Authorware 7.0 application accessibility to tap into Knowledge Objects, commands, models, and techniques to make text audible; run movies with captions; and create accessible user interfaces, menus, and quizzes.

Powerful Navigation

Create complex paging and navigation structures with the


framework and navigation icons. Import RTF text into the framework icon and Authorware 7.0 will automatically set up a multipage navigation system. Use the menu-driven interface to link to other pages, locations, or text in your application

Versatile Delivery

Develop once and deliver across a broad range of platforms, including corporate networks, CD, and the web. Authorware applications maintain a consistent high-fidelity experience across browsers on both Microsoft Windows and Apple Macintosh platforms.

There is no 'one ultimate solution'

Learning applications are of diverse natures, ranging from simple text-and-graphics tutorials to sophisticated diverse media enabled simulations. Hence, no one product meets this broad range of project requirements equally well.

Therefore, it would be a good idea for learning developers to use a combination of products to create their courseware. 

Asha Pandey is Chairperson of E I Design Pvt. Ltd. (www.eidesign.net), Bangalore. She can be reached at apandey@bgl.vsnl.net.in

Educational Media Database

As an ongoing project CEMCA has been developing and maintaining a database of educational audio and video programmes produced in the region. The database currently has more than 6000 records. The purpose of the database is to act as a reference point for sharing of information and resources. Educational institutions in the region are requested to continuously send us list of audio and video programmes produced by them for updating the database. By submitting information for inclusion in the database you are actually making it available to a wider community of users through our online website and the offline CD ROM. Now, it has also been decided to supply the database and its regular updates to participating institutions. Therefore please share information about your audio and video programmes and co-operate in updating this database. For further details contact: *Director, CEMCA.*

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Forthcoming Events...



21st ICDE World Conference,
Hong Kong, China, 18th
21st February 2004

Theme : Open Learning and Distance
Education

Emphasis : Basic education, Higher education and
Continuing Education including company and
workforce training

Host : The Open University of Hong Kong

Venue : Hong Kong Convention and Exhibition Centre,
Hong Kong

Web address : <http://www.ouhk.edu.hk/HK2003>



13th Asian Media
Information and
Communication

Annual Conference, Bangkok, Thailand,
1st - 3rd July 2004

Theme : Impact of New and Old media on
Development of Asia

Emphasis : New technologies and conventional media
in development, use of ICT.

Host : Asian Media Information and Communication
Centre, Singapore.

Venue : Miracle Grand Convention Hotel, Bangkok,
Thailand

Web Address : <http://www.amic.org.sg>



3rd Pan Commonwealth
Forum, Dunedin, New
Zealand, 4th - 8th July 2004

Theme : Building Learning
Communities for Our Millennium :

Reaching Wider Audiences through Innovative
Approaches.

Emphasis : Education, health and local government.

Organisers : Distance Education Association of New
Zealand and Commonwealth of Learning.

Venue : Dunedin, New Zealand

Web address : <http://www.col.org/pcf3/>



Association of Learning
Technology (ALT)

C 2004, 14 and 16 September 2004

Theme : Blue skies and pragmatism - learning
technologies for the next decade

Emphasis : Knowledge management, technical
infrastructures, new technologies for learning, the
impact of wireless, ambient, smart and other forms of
technologies, media and communications, tools and
strategies for effective use of technologies; pedagogy
and the social implications of the new forms of
communication; and organisational, strategic and
management issues.

Host : University of Exeter, Devon, England

Venue : University of Exeter, Devon, England

Web address : <http://www.alt.ac.uk/altc2004/>



International
Cooperation in

Education Conference (IASCE 2004),
Singapore, 21-25 June 2004.

Theme : Cooperation and Collaboration :Diversity Of
Practice, Cultural Contexts, and Creative Innovations.

Emphasis : Cooperative Learning in Content Areas,
Assessment, Technology Supported Cooperative
Learning, Equity Issues, Creativity and Innovation in
Cooperative Contexts, Cooperative Learning and
Teacher Education, Building Cooperation in Schools
and Communities.

Web Address : <http://www.arts.nie.edu.sg/iasce/> 

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media news and other events that you
would like to see in the newsletter. All
contributions shall be duly acknowledged
and appreciated.

-Editors

WISH YOU A HAPPY NEW YEAR 2004