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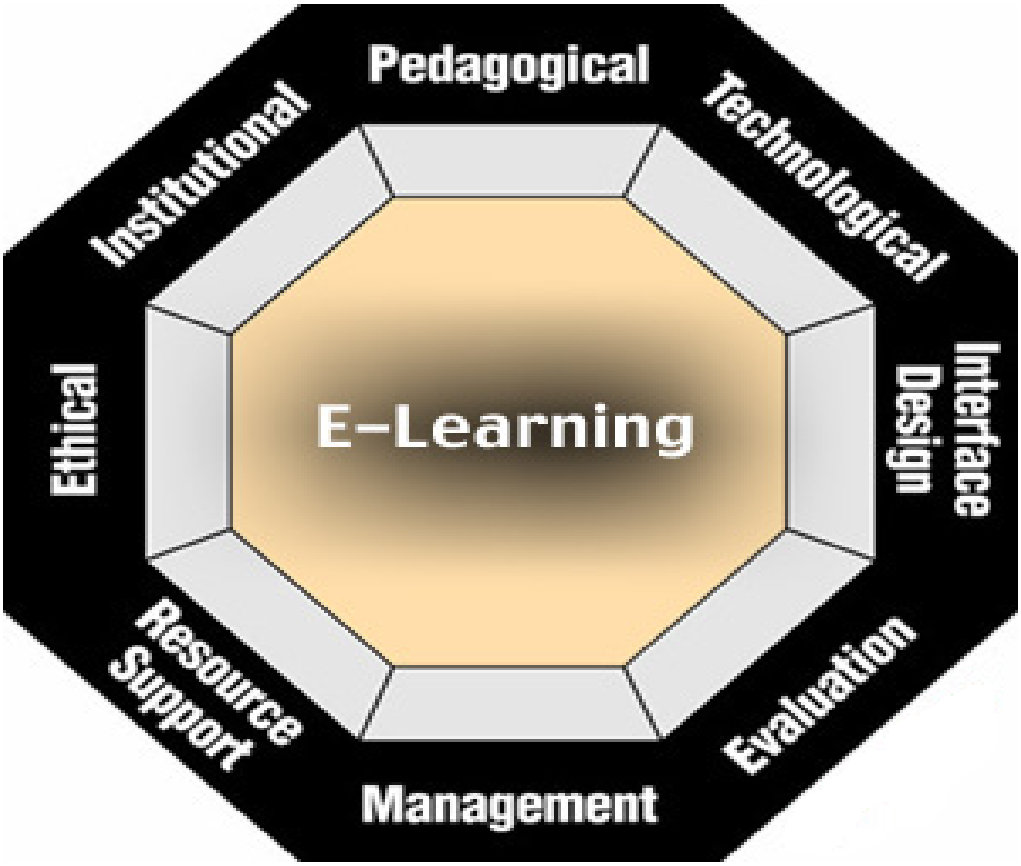


**INDIAN COUNCIL OF MEDICAL RESEARCH**
**NEW DELHI**

# E-LEARNING: An overview



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# E-LEARNING: An overview

## 1. Introduction

***E-learning is essentially the computer and network-enabled transfer of skills and knowledge. E-learning applications and processes include Web-based learning, computer-based learning, virtual classroom opportunities and digital collaboration. Content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM. It can be self-paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio.***

### 1.1 What is E-learning:

The definition of E-learning is varied and different according to different authors. E-learning is commonly referred to the use of networked information and communications technology (ICT) in teaching and learning. A number of other terms are also used to describe this mode of teaching and learning. They include *online learning*, *virtual learning*, *distributed learning*, *network* and *web based learning*.

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Fundamentally, they all refer to educational processes that utilize information and communications technology to mediate asynchronous (flexi-time) as well as synchronous (real-time) learning and teaching activities. On closer scrutiny, however, it will be clear that these labels refer to slightly different educational processes and as such they cannot be used synonymously with the term *e-learning*.

The term e-learning comprises a lot more than *online learning, virtual learning, distributed learning, networked* or *web-based learning*. As the letter “e” in e-learning stands for the word “electronic”, e-learning would incorporate all educational activities that are carried out by individuals or groups working online or offline, and synchronously or asynchronously via networked or standalone computers and other electronic devices.

## 1.2 E-Learning modalities

These various types or modalities of e-learning activity are represented below (see also Romiszowski, 2004).

### A. Individualized self-paced e- learning *offline*

*Individualized self-paced e-learning online* refers to situations where an individual learner is accessing learning resources such as a database or course content online via an Intranet or the Internet.

A typical example of this is a learner studying alone or conducting some research on the Internet or a local network.

### B. Individualized self-paced e-learning *online*

*Individualized self-paced e-learning offline* refers to situations where an individual learner is using learning resources such as a database or a computer-assisted learning package offline (i.e., while not connected to an Intranet or the Internet). An example of this is a learner working alone off a hard drive, a CD or DVD.

### C. Group-based e-learning *synchronously*

*Group-based e-learning synchronously* refers to situations where groups of learners are working together in real time via an Intranet or the Internet. It may include text-based conferencing, and one or two-way audio and videoconferencing. Examples of this include learners engaged in a real-time chat or an audio-videoconference.

### D. Group-based e-learning *asynchronously*

*Group-based e-learning asynchronously* refers to situations where groups of learners are working over an Intranet or the Internet where exchanges among participants occur with a time delay (i.e., not in real time). Typical examples of this kind of activity include on-line discussions via electronic mailing lists and text-based conferencing within learning managements systems.

*Glen Farrelly suggested following modalities of e-learning, either in isolation or in combination:*

1) Access readings

Course instructors can post readings or links to readings on a public or secure (ie. log-in required) website. Readings can be in the form of webpages, PDFs, Word documents, PowerPoint presentations, etc.

2) Listen/watch asynchronous audio or video

Instructors can post to a website (or iTunes) audio or video files for students. These files can be either of formal lectures or additional informational resources (like readings) or lectures. Audio or video files can be in the form of YouTube, podcasts, Real audio, QuickTime, Flash, etc.

3) Email or upload

Students can be given the functionality to participate online by being able to:
a) send instructor questions via email or a web form
b) upload assignments (e.g., Word Docs, Power Points, spreadsheets, videos, photographs, etc.)

4) Chat

Chat can be in the form of text-only (e.g. instant messaging) or audio (e.g. Skype). Video chats are also possible (for example, via webcams) but not yet technically seamless. Chats can include or be lead by the instructor or be students-only (for example, team discussions). They may be structured or a free-flowing Q&A.

5) Listen/watch synchronous audio or video

This could be a web cast of a lecture, but can also be a collective viewing of a presentation (e.g. over Slide Share) with a simultaneous teleconference or chat. Students can be given the option to interact with both the teacher or the student via email questions, Twitter, chat rooms, etc.

6) Surveys and polls

In e-learning, these seem to be mostly used to gauge the pulse of students on course topics or administrative issues, but can also be used for decision-making.

7) Interactive quizzes or tests

Students can view questions on the screen and provide their answers online. Options include assessing or grading their answers automatically in real-time or by instructors. This can be in the form of web pages, Flash, etc.

8) Educational online games /experiences

There are a huge variety of educational games, but they normally are animated with sound and allow the student to interact and receive feedback from the game.

9) Online discussions

Also called message boards, threaded posts, and forums, discussions appear to be the mainstay of e-learning. The technology gives the functionality for someone to start a specific topic (i.e. conversation thread) and then others can reply in a specific online space for that discussion. There are various options for how to structure these, for example conversation topics can either be assigned or open, the entire class participates or they can be team-based, optional participation or required, instructor participates or students only.

10) Online collaboration

Students work collectively on course assignments. Assignments can be in the form of an essay, presentation, paper, etc. There are many tools to enable group collaboration online, including wikis, Google Docs, or simply email. Usually the instructor facilitates and answers questions but doesn't actively participate in the collaboration.

11) Virtual classrooms

A private virtual reality space (for example Second Life) can be built to resemble a traditional classroom or any desired venue. Students and instructors create avatars (online representations of themselves) and gather online simultaneously in the virtual space. The instructor can then lead a traditional-style lecture or Q&A session or enact an entirely new, multimedia event.

## 2. Contemporary trends in e-learning

The growing interest in e-learning seems to be coming from several directions. These include organizations that have traditionally offered distance education programs either in a single, dual or mixed mode setting. They see the incorporation of online learning in their repertoire as a logical extension of their distance education activities. The corporate sector, on the other hand, is interested in e-learning as a way of rationalizing the costs of their in-house staff training activities. E-learning is of interest to residential campus-based educational organizations as well. They see e-learning as a way of improving access to their programs and also as a way of tapping into growing niche markets. The growth of e-learning is directly related to the increasing access to

information and communications technology, as well its decreasing cost. The capacity of information and communications technology to support multimedia resource-based learning and teaching is also relevant to the growing interest in e-learning. Growing numbers of teachers are increasingly using information and communications technology to support their teaching. The contemporary student population (often called the "Net Generation", or "Millennials") who have grown up using information and communications technology also expect to see it being used in their educational experiences (Brown, 2000; Oblinger, 2003; Oblinger and Oblinger, 2005). Educational organizations too see advantages in making their programs accessible via a range of distributed locations, including oncampus, home and other community learning or resource centers.

Despite this level of interest in e-learning, it is not without constraints and limitations. The fundamental obstacle to the growth of e-learning is lack of access to the necessary technology infrastructure, for without it there can be no e-learning. Poor or insufficient technology infrastructure is just as bad, as it can lead to unsavory experiences that can cause more damage than good to teachers, students and the learning experience. While the costs of the hardware and software are falling, often there are other costs that have often not been factored into the deployment of e-learning ventures. The most important of these include the costs of infrastructure support and its maintenance, and appropriate training of staff to enable them to make the most of the technology (see Naidu, 2003) currently with the use of technology.

## 3. Attributes of e-learning

There is a growing body of literature on e-learning technologies (see for instance Gayeski, 1993; Gibbons & Fairweather, 1998; Kearsley, 2005; Khan, 1997); as well as a large repository of resources on the Internet including

http://thinkofit.com/webconf/;
http://osf1.gmu.edu/~montecin/platforms.htm.

In this, we discuss only the critical and unique attributes of these technologies. These are:

a) the flexibility that information and communications technologies afford; and

b) electronic access to a variety of multimedia-based material that they can enable.

### *3.1 The flexibility that e-learning technology affords*

A key attribute of information and communications technology is its ability to enable flexible access to information and resources. Flexible access refers to access and use of information and resources at a time, place and pace that is suitable and convenient to individual learners rather than the teacher and/or the educational organization. The concept of distance education was founded on the principles of flexible access (Willems, 2005). It aimed to allow distance learners, who were generally adult learners in full or part-time employment to be able to study at a time, place, and pace that suited their convenience. The goal of distance education was to free these learners from the constraints of conventional residential educational settings. They would not be required to live or attend lectures in locations away from where they may be living and working. The printed distance study materials, which each distance learner received, would carry the core subject matter content they would need including all their learning activities and assessment tasks. Students would be required to complete these tasks, submit their assignments and take their examinations within a set time frame. While these printed study materials allowed distance learners a great deal of freedom from time, place and pace of study, it had its limitations. For one thing, non-printed subject matter content and simulations etc. could not be easily represented in print form.

Access to information and communications technology changed all that as it offered a range of possibilities for capturing and delivering all types of subject matter content to learners and teachers in distributed educational settings. This meant access to subject matter content and learning resources via networked information and communications technologies across a range of settings such as conventional classrooms, workplaces, homes, and various forms of community centers (Dede, 2000; 1996).

Contemporary educational institutions, including conventional distance education providers, often pride themselves in being able to meet the learning needs of their students and staff at a time, place and pace that is most convenient to them.

They have been able to do this with the help of information and communications technologies which afford learners access to upto- date information as and when they need them, and also the opportunity to discuss this information with their peers and teachers at their convenience. This is becoming increasingly affordable and palatable with a wide range of software applications and computer conferencing technologies for collaborative inquiry among students and asynchronous discussion (see Edelson, Gordin, & Pea, 1999;

Edelson & O'Neill, 1994). These applications enable learners and teachers to engage in synchronous as well as asynchronous interaction across space, time, and pace (Gomez, Gordin & Carlson, 1995; Gordin, Polman & Pea, 1994; Pea, 1994).

### *3.2 Electronic access to hypermedia and multimedia based resources*

Information and communications technology also enables the capture and storage of information of various types including print, audio, and video. Networked information and communications technologies enable access to this content in a manner that is not possible within the spatial and temporal constraints of conventional educational settings such as the classroom or the print mode (Dede, 2000). In the context of this distributed setting, users have access to a wide variety of educational resources in a format that is amenable to individual approaches to learning (Spiro, Feltovich, Jacobson & Coulson, 1991), and accessible at a time, place and pace that is convenient to them (Pea, 1994). Typically, these educational resources could include hyper-linked material, incorporating text, pictures, graphics, animation, multimedia elements such as videos and simulations and also links to electronic databases, search engines, and online libraries.

## 4. Opportunities and affordances of e-learning

A growing body of literature on learning and teaching is suggesting that learning is greatly enhanced when it is anchored or situated in meaningful and authentic problem-solving activities (see Barron, Schwartz, Vye, Moore, Petrosino, Zech, Bransford & The Cognition and Technology Group at Vanderbuilt, 1998; Brown, Collins & Duguid, 1989; Evensen & Hmelo, 2000; Naidu, 2004; Schank & Cleary, 1995; McLellan, 1996; The Cognition and Technology Group at Vanderbilt, 1990). This approach to learning and teaching is founded on the principles of learning by doing and experiencing (Schank, Fano, Jona & Bell, 1994). It places or confronts learners with authentic situations and scenarios which are motivating and which require learners to carry out tasks or solve problems and reflect upon their actions (Naidu, 2004). While such learning designs are suited for any learning and teaching context or media, their effectiveness and efficiency can be somewhat constrained by the fixed time, space and pace limitations of learning and teaching in conventional campus-based classroom settings. Similarly, printed study materials, while they afford transportability, are limited by their inability to capture and carry much

else other than text, pictures, and illustrations. Information and communications technologies, on the other hand, afford us a wide range of opportunities to capture, store and distribute information and resources of all types and formats. Along with text, pictures and illustrations, these include multimedia-based simulations of complex processes from all sorts of domains such as the biological and medical sciences, agriculture, engineering and educational practice which are not easily or cheaply accessible in real time and settings to use technology completely. We were given guides and resources on how to gather information online and how to evaluate this information. It is high time to build a support system that helped enrich this type of learning. Some background and experience with information and communications technology is critical when engaging with online learning, but now a well-trained and empathetic instructor is even more critical to success in online learning.

## 5. Conclusion

In this computer age, e-learning play a significant role in teaching and learning process and hence it is the time for the teachers and academic community to get awareness of e-learning and teaching for future academic growth.

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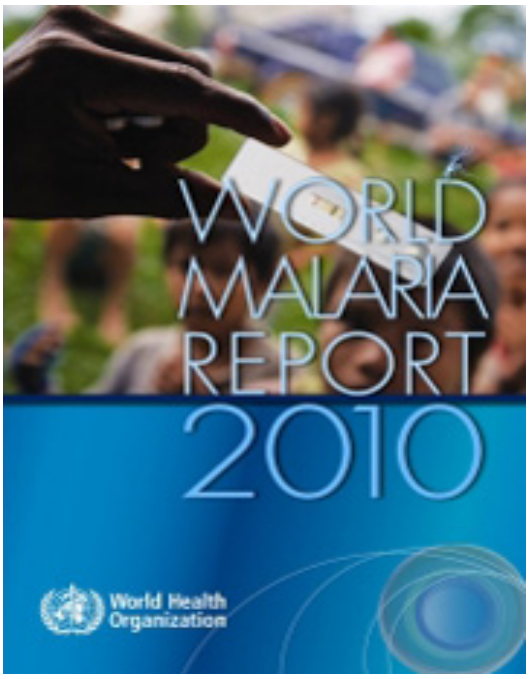
# New Arrivals

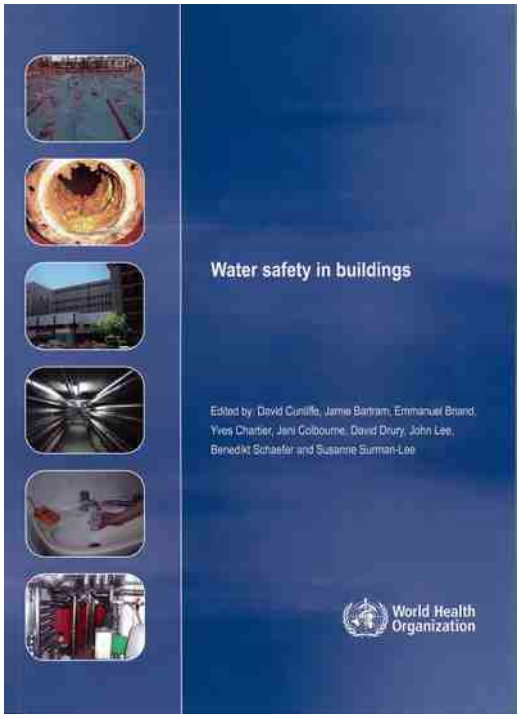
## The World Malaria Report 2011



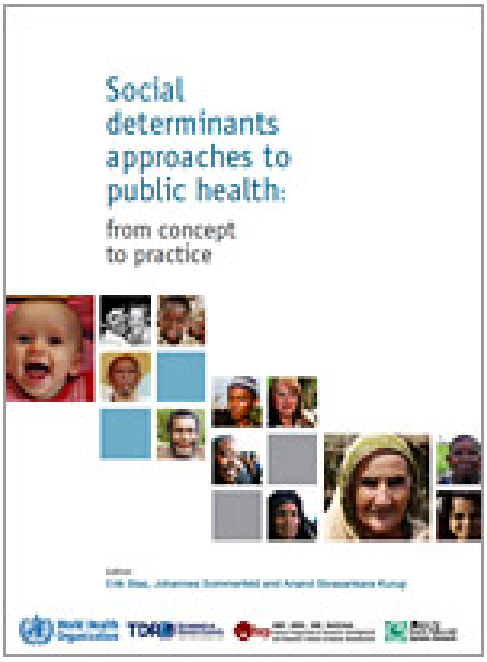

The World Malaria Report 2010 summarizes information received from 106 malaria-endemic countries and other sources and updates the analyses presented in the 2009 Report. It highlights continued progress made towards meeting the World Health Assembly (WHA) targets for malaria to be achieved by the end of 2010 and by 2015.

The report outlines the evolving situation of financing for malaria control, how these growing resources have resulted in increased coverage of WHO-recommended malaria control interventions, and the association between this rapid scale-up and substantial reductions in malaria burden.

This book provides guidance for managing water supplies in buildings where people may drink water, use water for food preparation, wash, shower, swim or use water for other recreational activities or be exposed to aerosols produced by water-using devices, such as cooling towers. These uses occur in a variety of buildings, such as hospitals, schools, child and aged care, medical and dental facilities, hotels, apartment blocks, sport centres, commercial buildings, detention centres and transport terminals. This publication is one of a series of supporting documents related to the World Health Organization's Guidelines for Drinking water Quality. It is intended to support the improvement of water safety within buildings. The book is particularly directed at those who design, construct, manage, operate, maintain and regulate building water systems. It is intended to be a useful resource for the development of training and information material.



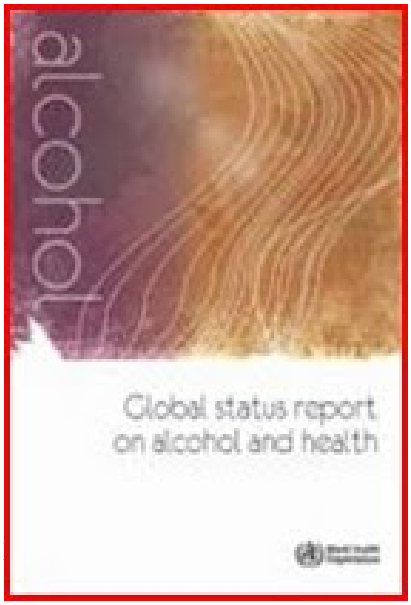
## Social Determinants and Public Health Programmes




Social Determinants And Public Health Programmes, which analyzed social determinants from the perspective of a range of priority public health conditions, exploring possible entry points for addressing health inequities at the levels of socioeconomic context, exposure, vulnerability, health-care outcome and social consequences.

The case studies presented in the new volume cover public health programme implementation in widely varied settings, ranging from prevention of malnutrition among girls in Pakistan and suicide prevention in Canada to malaria control in Tanzania and prevention of chronic noncommunicable diseases in Vanuatu. The book does not provide a one-size-fits-all blueprint for success; rather, it analyses programmatic approaches that led to success or to failure. The final chapter synthesizes these experiences and draws the combined lessons learned. These lessons include the need for understanding equity as a key value in public health programming and for working not only across sectors but also across health conditions. This requires a combination of visionary technical and political leadership, an appreciation that long-term sustainability depends on integration and institutionalization, and that there are no quick fixes to public health challenges. A common lesson learned from all the analyzed cases is to not wait to identify what went right or wrong until after the programme has elapsed or failed. Research is a necessary component of any implementation to routinely explore, gauge, and adjust strategies and approaches in a timely manner. The book is the joint initiative of the WHO Department of Ethics, Equity, Trade and Human Rights (ETH), Special Programme for Research and Training in Tropical Diseases (TDR), Special Programme of Research, Development and Research Training in Human Reproduction (HRP), and Alliance for Health Policy and Systems Research (AHPSR). The thirteen case studies were commissioned by the research node of the Knowledge Network on Priority Public Health Conditions (PPHC-KN), a WHO-based interdepartmental working group associated with the WHO Commission on Social Determinants of Health. website

## Global Status report on alcohol and health 2011




The Global status report on alcohol and health (2011) presents a comprehensive perspective on the global, regional and country consumption of alcohol, patterns of drinking, health consequences and policy responses in Member States. It represents a continuing effort by the World Health Organization (WHO) to support Member States in collecting information in order to assist them in their efforts to reduce the harmful use of alcohol, and its health and social consequences The harmful use of alcohol is a worldwide problem resulting in millions of deaths, including hundreds of thousands of young lives lost. It is not only a causal factor in many diseases, but also a precursor to injury and violence. Furthermore, its negative impacts can spread throughout a community or a country, and beyond,

By influencing levels and patterns of alcohol consumption across borders. The Global status report on alcohol and health (2011) presents a comprehensive perspective on the global, regional and country consumption of alcohol, patterns of drinking, health consequences and policy responses in Member States. It represents a continuing effort by the World Health Organization (WHO) to support Member States in collecting information in order to assist them in their efforts to reduce the harmful use of alcohol, and its health and social consequences.
Since 1974, WHO has been actively involved in documenting and reporting on alcohol related health issues and problems? Indeed, this publication follows in the wake of the First Global status report on alcohol in 1999 and the second in 2004. These reports were based on global, regional and national data collection efforts supported and coordinated by WHO. Data collection initiatives began with the Global Alcohol Database in 1996, which was further developed and transformed into the Global Information System on Alcohol and Health (GISAH; http://www.who.int/globalatlas/alcohol) in 2008, and which now contains data on more than 200 alcohol-related indicators.

## Public Communication of Science & Technology


Public Communication of Science & Technology (PCST) is important for the economic and social wellbeing of society and for the exercise of participatory democracy. It implies the ability to respond to technical issues and problems that pervade our daily lives. It does not mean detailed knowledge of scientific principles, phenomena or technologies, but rather an appreciation of the way science works and how the community can interact with science to help shape its work. New technologies and new media can trigger and sustain public interest in S&T, allowing a dialogue to developing and preparing the people for change. The 11th PCST Conference will deliberate on both practical and theoretical aspects of science communication, in a globalised world with major inequalities and development challenges. Science communication practitioners and analysts from all continents will compare experiences and perspectives on science-based issues of today and tomorrow.India, one of the most emerging economies, is uniquely positioned to host a discussion on the role of science in modern society. Poised between modern and developing nations, India represents the future: a world where everything is under challenge including the old frontiers.

## NEWS

### Library Juice

"Library Juice is a current awareness service for library and information science students, librarians, and other interested people. It includes announcements, many web resources, calls for papers, and news items. Much of the material has a social-responsibilities or intellectual freedom focus. It is not a discussion list but a digest of material from a variety of sources."--.

## Seminars / Conferences / Workshops in Library / Information

International Conference on Digital Library & Electronic Information Management & Control 2011,
KIIT University, Bhubaneswar
Dates: October 8, 2011 to October 10, 2011
Venue: KIIT University, Bhubaneswar
Website:
http://www.kiit.ac.in/icdleimc2011/about.htm

IASLIC 28th Conference 2011
Dates: October 10, 2011 to October 13, 2011
Venue: Kashmir University
Website: http://www.iaslic1955.org.in

13th Manlibnet Annual National Convention
Dates: October 13, 2011 to October 15, 2011
Venue:University of Delhi, South Campus
Website:
http://manlibnet.in/MANPDF/manlibnet2011.pdf

UGC sponsored Two Day National Level Seminar on
Impact of Information Technology on college Libraries,
Dates: October 14, 2011 to October 15, 2011
Venue: Nutan Maratha College, Jalgaon (M.S.), India
Website:http://www.punlib.net/addons/jalgaon/Jalgaon_Co
nference14-15_Oct_2011.pdf

SoFerence - 2011: a Social Conference on Knowledge /
Experience Sharing
Date: October 15, 2011
Venue: Tata Consultancy Services, L-Centre, Plot No.78, 79
& 83, Bangalore
Website: http://kalaonline.com/

National Conference on "Emerging Library and
Information Technologies 2011 (ELITE 2011)
Dates: October 21, 2011 to October 22, 2011
Venue: Tamil Nadu Veterinary and Animal Sciences
University
Website : http://www.tanuvas.ac.in

Information Literacy Competencies for Higher Learning and Research
Dates: October 21, 2011 to October 22, 2011
Venue: Tumkur university , Tumkur
Website: http://tumkuruniversity.in/

NACLIN 2011, Visva-Bharati, Santiniketan, West
Bengal
Dates: November 15, 2011 to November 17, 2011
Website: http://delnet.nic.in/

National Conference on Digital Library Management
and Challenges
Dates: November 19, 2011
Venue: Library, Accman Institute of Management, Greater
Noida. U.P.
Website: http://www.accman.in/nlc.html

STRATEGIES FOR MANAGING LIBRARIES IN THE
FUTURE - 2011
Dates: December 7, 2011 to December 9, 2011
Venue: IIM, Ahemdabad
Website:http://www.iimahd.ernet.in/libcon/index.php/2011/libcon