e-Learning: Learning for Smart Generation Z

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Abstract- Today's students have been raised in a world of instant access to knowledge and information, a word of automation, remote controls, and simulation capabilities to stimulate the mind. Although schools are embedded in this technological culture, the education system is largely unchanged. In other words, students are far more technologically savvy than the institutions that support them. Unless educational institutions catch up, students are likely to feel rigid, uninteresting, and possibly alienated.

A knowledge society aims to achieve societal transformation and ethical wealth generation. As a third dimension emerges as a country transforms itself into a knowledge superpower, knowledge protection becomes a critical factor. India is well placed at the dawn of knowledge era. For India to become a knowledge society, it has to be a learning society first. For life long learning, it is not only the settings of formal education that are important, but also the settings of home, the work place, the community and the society at large are important. The research has shown that cutting-edge technologies have enabled universities to implement distance education to reach more diverse populations and increase the availability of Web-based learning environments. The Web holds several advantages over traditional learning. The Web allows interactive delivery with multimedia content that helps overcome the limitations of static resources. Distance education definitely makes education convenient.

I. INTRODUCTION

E-Learning stands for electronic learning which means learning through electronic media. It refers to a form of learning in which the tutor and students are not close to each other, but are at a distance apart and this gap is bridged by the use of technology.

Successful e-learning programs provide structure in the form of timelines and goals for potential learners. Flexibility that makes self-study so convenient for learners can be a double edge sword because it allows learners the freedom to take classes in their own time as well as the opportunity to abandon it as other things begin taking up their time and attention. This is why it is really important for online universities to employ monitoring devices and assessments to ensure all learners complete the courses on time. There needs to be a variety of learning approaches to enhance the design for e-learning. These approaches are most successful when structures and roles are well defined. These designs include structured course content, weekly activities, and technical/instructor support for learners .

Like other regions, e-learning is also catching fast in India. Young generation of India is very eager to set their career and make money sideways. For them e-learning is a boon. It is an excellent way to pursue or upgrade studies along with work as physical attendance in classes is not mandatory.

Indian e-learning market is still at a nascent stage. But thanks to an increasing emphasis on honing individual skills, e-learning is slowly becoming popular in India.

II. OBJECTIVE

For a pervasive life long learning movement in India, we will have to strengthen the learning foundations, provide a broad range of learning opportunities and recognize and reward learning regardless of why, where and how it takes place. Policy initiatives should focus on strengthening the knowledge society.
e-learning permits the delivery of knowledge and information to learners at an accelerated pace, opening up new vistas of knowledge transfer. Early adopters are companies that have tried to supplement face-to-face meetings, demonstrations, training classes and lectures with this technology.

Countries without university education can access universities in other countries via the Web, a solution much cheaper than building university infrastructure. In underdeveloped countries, e-learning can raise the level of education, literacy and economic development. This is especially true for countries where technical education is expensive, opportunities are limited, and economic disparities exist.

Significant quality gains and teaching and learning improvements are expected with the use of e-learning. Despite the obvious advantages, the degree of adoption of e-learning within a university and among universities varies to a great extent. Teachers are found to be important decision makers in the adoption of e-learning but we also need to consider the institutional strategies supporting the adoption and its acceptance by students. Through the conduct of interviews with students and surveys with teachers, this brief paper examines the effects of teachers' perceptions on e-learning. The current study also applies the theory of diffusion of innovations to investigate the extent and reasons as to why e-learning is adopted or not adopted.

III. REQUIREMENT OF E-LEANING IN INDIA FOR SMART GENERATION

"The adoption of e-learning in all spheres—corporate, schools, universities, etc—is low at present. The Indian market is not substantial when compared to the international market which is worth about $6 billion to $7 billion," says Harish Joshy, Vice-president of Lion Bridge Technologies, an e-learning player.

e-learning in India has been most successful in the corporate segment where it is seen as a means of achieving business goals and motivating employees.

However, one of the problems with e-learning in India is the lack of course content, especially outside the mainstream focus areas of IT education, English-language content, and tutorial-like courses. There will be high demand for people who can develop multi-lingual courseware that addresses various topics. Gartner says that one of the top 10 positions among Global 1000 companies of the future will be that of an online learning designer.

In a market such as India where the concept is still new, one crucial element that will make a difference in generating a good response is marketing. This not only holds true for segments such as government and education, but for the corporate sector as well. Experts are of the view that there needs to be a mindset for the adoption of e-learning.

IV. Impact of e-Learning Methods on Students

Web teaching environments can also be differentiated by their interactive nature with synchronous (instructor facilitated) models providing a real time teaching experience, while less resource hungry asynchronous (self paced) approaches are more appropriate for "any time" learners.

At the macro level, these environments can be classified as web-assisted where web technology is used to support the traditional teaching environment, or web-based where the internet hosts the virtual classroom.

The diagram in Figure 1 is based on research performed into how people remember (Dale, 1969) and expanded by Van Dam (2003) to reflect its implications on online learning and instructional design. The diagram demonstrates how media rich, interactive learning environments can enhance the learning experience.

Dale's work is fundamental to most modern constructivist teaching paradigms postulates that people are more likely to retain knowledge when it is delivered in a multi-sensory manner and, in particular, when it is applied to a real world context.

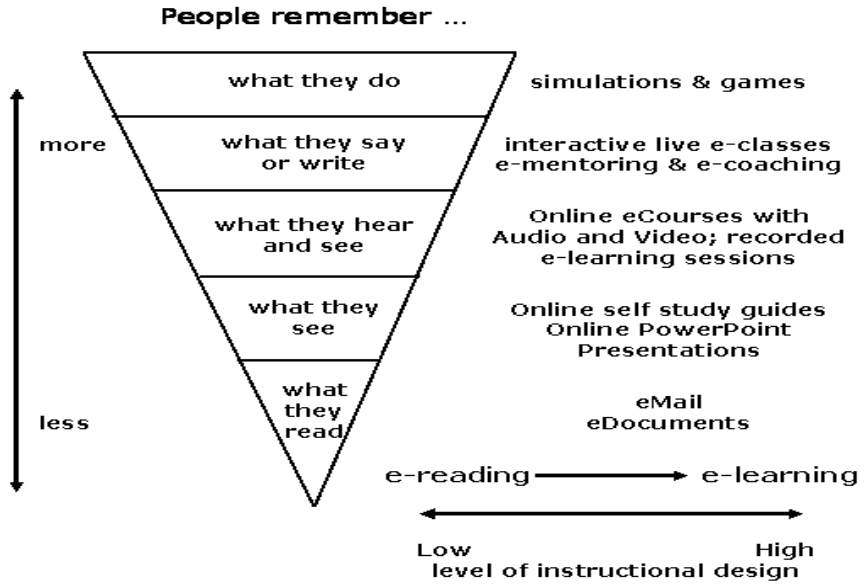


Figure 1: Mapping e-Learning methods to Levels of Learning (Van Dam, 2004)

Van Dam uses Dale's hierarchy to illustrate how various e-learning applications can be used to support different levels of learning. He also cautions that as the level of instructional design increases from basic e-reading to a richer e-learning environment, there can be significant cost, time and resourcing implications.

V. e-Learning Delivery Methods for Generation-Z

Another approach to categorizing e-learning technology in a residential teaching environment is to map how academics can use the different delivery methods over the different facets of the educational experience. Current teaching practice tends to focus on four critical dimensions of teaching:

- Access to the body of knowledge (teaching)
- Process of knowledge assimilation (understanding)
- Evaluation and Feedback (assessment)
- Support

Given the need for group interaction to facilitate learning and support and the potential danger of isolation inherent in e-

learning environments, a fifth dimension, collaboration, is added to the list. These dimensions can be mapped against the three learning infrastructures available in a blended e-learning environment (Face to Face, Asynchronous and Synchronous) to identify some of the main delivery mechanisms that can be used to addresses each dimension of the teaching experience.

Table 1: Mapping Learning Delivery Methods to Teaching Dimensions

	Learning Delivery Methods		
Teaching Dimensions	Traditional Face to Face	Asynchronous Self-paced elearning	Synchronous Online elearning
Teaching Acquire Knowledge	Lectures	Guides, Readings, Presentations	Online interactive classes
Understanding	Tutorials, Workshops	Computer based training modules	Online exercises
Evaluation and Feedback	Paper based Tests Marked Feedback	Online assessment and feedback	Live assessment and feedback
Collaborate	Group work, Classroom discussion	Email, Bulletin boards, List servers	Interactive chats, Instant messaging
Support and Reinforce	Hot Seat, Coaching and mentoring	Online help, Online KM systems	Online coaching and mentoring

In Table 1 the traditional approach includes the learning delivery methods long established in the higher education environment. Classroom lectures supported by tutorials or workshops are the main teaching mechanism. Tests and exams are paper-based and feedback provided by the return of marked scripts and review lectures. Collaborative work can take a number of forms, from structured group work in tutorials and workshops to classroom discussion and group projects. Finally each teaching approach should have a support structure. In the traditional delivery method this could take the form of a "hot seat" facility for students with particular problems, to special workshops and programmes where weaker students can get additional assistance.

Residential universities have an advantage over their virtual counterparts in that they are able to build on the strengths of face to face teaching approaches and incorporate e-learning tools and techniques where they are most suited. This mix of traditional and e-learning methods is often referred to as a blended approach to e-learning (Konrad 2003).

VI. Tools and Technologies used for smart generation-Z

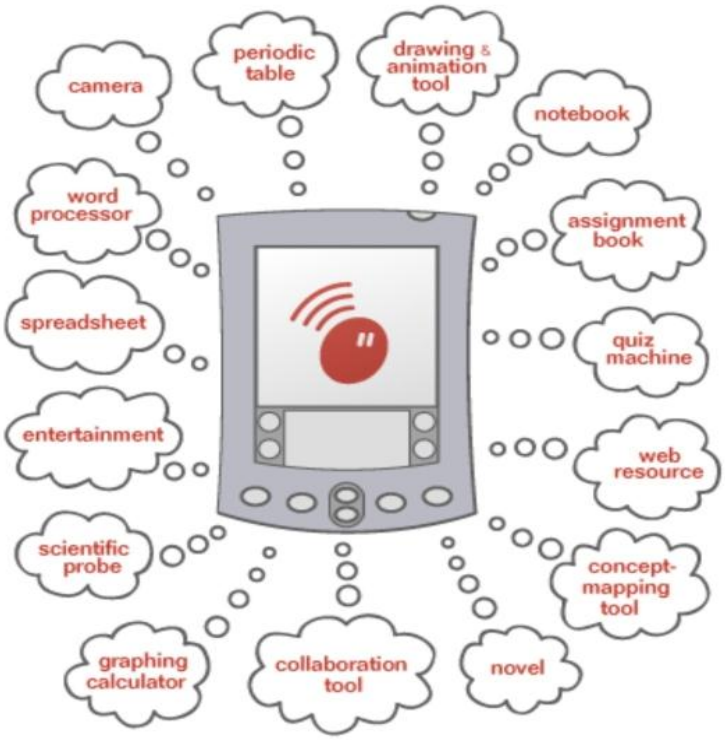
A successful e-learning experience will use a combination of the technologies most appropriate for the practitioner, the learner group, the course content and course assessment. Central to e-learning success are communication technologies which are generally categorized as synchronous or asynchronous. Synchronous activities happen at the same time and involve the exchange of ideas and information with one or more participants.

Synchronous activities occur with all participants joining in at once, as with an online chat session or a virtual classroom. Virtual classrooms (also virtual conferences or web conferences) allow practitioners and students to interact in real time from their own computer using text chat, live voice, and interactive whiteboards.

Asynchronous activities are conducted with participants providing input at different times and use technologies such as blogs, wikis, discussion forums, and email.

A Learning Management System (LMS) is software for delivering content, tracking students and managing training. Practitioners set up a course web page to hold learning content and assessments, then track and manage their students with tools like grade books and activity reports.

M-Learning or mobile learning covers learning with portable technologies like mobile phones, or PDAs (personal digital assistant), where the focus is on the technology (which could be in a fixed location, such as a classroom); learning across contexts, where the focus is on the mobility of the learner, interacting with portable or fixed technology; and learning in a mobile society, with a focus on how society and its institutions can accommodate and support the learning of an increasingly mobile population that is not satisfied with existing learning methodologies.



Web 2.0 or social networking encompasses a number of tools that can be used to develop content and communication in an interrelated relationship. These tools are generally freely available to trainers and web users and include :-

- Virtual conferencing
- Learning Management Systems (LMSs)
- Blogs
- Wikis
- Web 2.0 or social networking tools
- Social bookmarking
- Virtual Worlds - Real Learning
- Mobile Learning

e-Learning Tools

E-learning Authoring tools :

MS Word, Power point, Macromedia DreamWeaver, Flash, Authorware, Director, XML Spy, and Visual Intradev

E-learning Programming languages :

Java, JSP, C++, visual basics, VB.net, ado.net, advanced java, Mobile VB

E-learning Database development :

Oracle, MS access, MS SQL, SQL server

E-learning Graphics production tools :

Photoshop, Sound forge, Premier, Flash, Illustrator, Corel Draw, and 3D studio Max, DirectorMX

VII. Emerging Web Technologies for shaping education

Teachers are starting to explore the potential of blogs, media-sharing services and other social software - which, although not designed specifically for e-learning, can be used to empower students and create exciting new learning opportunities.

The traditional approach to e-learning has been to employ the use of a Virtual Learning Environment (VLE), software that is often cumbersome and expensive - and which tends to be structured around courses, timetables, and testing.

That is an approach that is too often driven by the needs of the institution rather than the individual learner. In contrast,e-learning-2.0 loosely joined' approach that combines the use of discrete but complementary tools and web services - such as blogs, wikis, and other social software - to support the creation of ad-hoc learning communities.

Blogging

Blogging is increasingly finding a home in education (both in school and university), as not only does the software remove the technical barriers to writing and publishing online - but the 'journal' format encourages students to keep a record of their thinking over time. Blogs also of course facilitate critical feedback, by letting readers add comments - which could be from teachers, peers or a wider audience.

Students use of blogs are far ranging. A single authored blog can be used to provide a personal space online, to pose questions, publish work in progress, and link to and comment on other web sources.

Teachers who are subject specialists are also using blogs to provide up-to-date information and commentary on their subject areas, as well as posting questions and assignments and linking to relevant news stories and websites.

Podcasting

Podcasting has become a popular technology in education, in part because it provides a way of pushing educational content to learners. However, **student-produced podcasts** are where it's at when it comes to educational podcasting. Swap 'user-generated content' for 'learner- generated content' and you soon get the picture. Apple, with its strong presence in the education market, has been quick to recognize the learning potential of student podcasting.

Immersive and Gaming Environments

With 3D virtual environments coming online at a steady pace, sophisticated virtual authoring software, and augmented reality beginning to take hold, learning in 3D is now more feasible than ever. Although it increases development time, the potential for improved learning transfer from virtual environments to the real world can no longer be ignored. And of course, there's the motivational factor too.

Cloud Computing

Cloud computing refers to delivering capabilities as an online service accessed from a web browser. The number of applications and services that rely on cloud computing seem to be growing exponentially, impacting both the development and delivery of online learning.

Open Source Software

Open Source software products for eLearning, for which the source code is freely available, are becoming widely accepted. An increasing number of organizations are taking advantage of Open Source products, like Moodle and Sakai, for Learning Management Systems and authoring tools, like Udutu, for course production. The advantages? Open Source apps are usually free to download, which makes online learning more affordable. Access to the source code makes the programs customizable.

Social Media

Social media technologies are exploding, providing an array of offerings for learning online. The prevalence of social networking, real-time search and discussion, and collaborative technologies increase the opportunities for informal and unstructured learning and can enhance structured learning strategies as well. Although organizations have been slow to adopt and promote social media technologies for learning, interest in these approaches is increasing. Individuals, rather than organizations, have been using social media technologies for self-directed and collaborative learning for quite some time.

VIII. Conclusion

The Web holds several advantages over traditional learning. The Web allows interactive delivery with multimedia content that helps overcome the limitations of static resources. Distance education definitely makes education convenient.

The Web will definitely play a major role as education and training grows and develops. The growth and access to the Internet has taken non-traditional education to a new level with the vast availability of Web-based courses in higher education. Educators have a responsibility to address their role in this trend of higher learning. It is evident that universities and other institutions of higher education are being challenged to examine their existing curriculum with respect to distance education and adjust their operations, philosophies, and structures accordingly.

References

[1] Konrad, J (2003) Review of Educational Research on Virtual Learning Environments European Conference on Educational Research, Hamburg, September 2003

[2] Nunes, J.M. & McPherson, M.A. (2002) "No Lectures On-Campus: Can eLearning Provide a Better Learning Experience?" Proceedings of the 2nd IEEE International Conference on Advanced Learning Technologies (ICALT 2002), 9-12 September 2002, Kazan, Tatarstan, Russia, 442-447

[3] Van Dam, N. (2004) The e-Learning Field Book. New York: McGraw-Hill

[4] Zapalska, A., Bugai, M., Flanegin, F., Rudd, D (2004) Student Feedback on Distance Learning with the Use of WebCT, Computers in Higher Education Economics Review, Vol 16, 2004

[5] Digital Learning-Learning through ICT<http://www.digitallearning.in/download.asp>

[6] Bruno, Irene E. (2003), Ph.D., Factors affecting students' perception of effectiveness of university professors, Capella University, 107 pages; AAT 3099973

[7] Dunn, Samuel L. (2000) The virtualizing of education, The Futurist. Washington: Vol.34, Iss. 2; pg. 34, 5 pgs

[8] Gelernter, David., (2005, Nov 28). Who Needs A College Campus? Forbes. New York:. Vol. 176, Iss. 11; p. 042

[9] Ghaoui, Claude, & Janvier, W A. (2004). Interactive E-Learning. International Journal of Distance Education Technologies. Hershey. Vol. 2, Iss. 3; p. 26 110 pages)

[10] Ligos, Melinda. (2000). "Turning to On-line Schools for Advanced Degrees." New York Times: 3.10.

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