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Roll of Information & Communication Technology on E-books and D-library

Saroj Bala[1] Dr. Narender Kumar[2]

[1]Research Scholar, Cmj University, Shilong Meghalaya

[2]Semi-Professional Library-In-Charge Institute of Law Kurukshetra University Kurukshetra -136118

Abstract: ***Since Internet became in the last years the biggest source of information as open sources and free market and commonly reachable for the educationalist in higher and further education systems, the book concept has been dramatically redefined for higher education and further education, especially in terms of separating of its content and the related support. Practically, when using the electronic media, a book could take a different look-the electronic book (e-book). Due to their widely spread in the last period, the e-books are one of the most effective ways to support distance learning (e-learning), as they can be read by thousands of readers. Due to the fact that the teachers have limited time for participating to the face-to-face training programmes, the e-books became an important tool for promoting different training courses organized in the frame of various projects. The various types of engagement in digital libraries (DLs), such as funding developmental stages or devoting important shares in the acquisition of access has drawn considerable attention to the evaluation of these systems during the late period. The term digital library is vast, covers many and different applications and has been used interchangeably for systems, like digitized collections, e-journals platforms, network databases, library websites, etc. Moreover the current electronic publishing business models enrich the DL technology aiming to provide powerful information access options to the users. The best practices and experiences of the teachers who achieved the on-line courses were collected and help the partnership to design a web-guideline entitled "Best Practices Guideline for Educational Use of ICT Tools" as a final output of the project. The content of the European course and the web-guideline have been produced as an e-book format by using Desktop Author software application. In this sense, the paper aims to present the most important features proposed by Desktop Author software during the design process of the mentioned e-books, together with the main facts presented by the related e-volumes. The advent of electronic books (e-books) has significantly impacted the publishing industry in recent years. The prevalence of e-books has prompted many publishers to reconsider their distribution channels for new titles. They need to decide whether to sell the e-book version of new titles.We derive the conditions under which a publisher should sell only printed books (p-books), only e-books, and both of them simultaneously.***

Keyword: Electronic Books, Digital Library Development, Face-to-face Training Programme, Web- Guideline, Educational Use of ICT Tools, Electronic Publishing Business

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INTRODUCTION

Ever the past decade, the rapid developments and growth of information and communication technology (ICT) in such areas as education and training has offered new paradigms for university training and the topic of electronic learning (E-learning) has deserved careful attention. Internet technology is presently enabling humankind to communicate with anyone, anywhere, and anytime globally, instantaneously and yet inexpensively. Such an excellent communication tool can be put to good use in education.

The application of ICT in education is now making it possible for education to transcend space, time and political boundaries. The growing literature on E-learning education shows how technological, economic and scientific factors are contributing to the development of a new educational panorama. The different teaching contexts to meet different learners' preferences and needs produce outcomes for students which go beyond simple subject teaching. E-learning programs are uniquely different around the world. The situation is distinctly different across countries.The most recent estimate that more than two-thirds of all higher education institutions now have offered E-learning courses, with the majority of these provide programs that are fully online. Currently, the overall E-learning students have exceeded to 3.5 million in 2007. The number of online students is still continuing to expand, with a compound annual growth rate of 21.5 percentages. A significant body of literature indicates the dramatic changes in the higher education systems caused by the diffusion of new ICT's, as well as the need for universities to radically change in order to stand both the social pressure and the competition from online universities. The advantage of E-learning is clear. For instance, *Kirschner et al.* (2007) indicate that E-learning matches the needs of nontraditional students, increases the educational facilities available to traditional students, provides companies with cost efficient yet effective training options, and gives students and researchers in developing nations an

invaluable means of gaining a first-world education tempered by third-world experience.

KNOWLEDGE MANAGEMENT, INNOVATION AND LIFELONG LEARNING

Knowledge management, innovation and lifelong learning are in the forefront of global economic development, while investments in education become a key indicator of understanding the dynamics of contemporary business and society. In today's economy, companies face increasing pressure to cut costs and provide customers with high levels of quality they expect. In this context, e-learning represents an almost ideal approach for a flexible and cost-effective competence development since it can be used without restrictions related to physical location and time of usage. However, it is not enough to develop an appropriate curriculum and implement it through an e-learning system, given that e-learning needs to be appropriately integrated into the overall system of human resource management. The same issue is relevant for educational institutions, as well: a fundamental problem of many different approaches to e-learning implementation is the assumption that the uses of modern technology peruse means automatic and significant progress towards achieving the learning goals. Often enough, it is considered that it is sufficient to "integrate" technology solution in the process of higher and further teaching and learning. However, it is much more than this- the whole process should be appropriately (re)designed. Many authors provide their own definitions of (business) processes. They are all similar and imply that a set of inter-related activities is conducted with a purpose to create results of added value, congruent with the previously defined goals of the business system. With the increasing requirements to provide evidence of effectiveness for all kinds of processes, including higher education/training, it is essential to design and empirically investigate the e-learning process and the factors which influence its performance.

MIS AND VIRTUAL LEARNING ENVIRONMENTS

E-learning has created unprecedented virtual learning environments, offering new educational models that impact the learning industry. These innovative learning environments may impact the traditional education system and render the capabilities of the stakeholders in the system obsolete. From the dynamic capability perspectives, in such a new setting, the stakeholders must constantly reconfigure, renew, or learn new capabilities rather than protect their capabilities along with technology, content, and education delivery expertise to embrace the educational innovation-E-learning. Understanding the nature of innovation is the crucial first step in managing the change associated with any innovation. In order to understand the nature and scope of the opportunities accompany with the Elearning innovation, it is necessary to organize them categorically and see them fully. It is necessary for E-learning participants to recognize and evaluate changes in the education and technological landscape and speculate on what extent each stakeholder meets the emerging capability gaps in a timely way. Possessing this knowledge is crucial for stakeholders to successfully adapt from the traditional classroom to E-learning environment. However, some disadvantages of e-learning are identified such as lack of peer contact and interaction, high initial costs for preparing multimedia content of learning materials and also substantial costs for its maintaining and updating, as well as the need for flexible tutorial support (*Hamburg, Lindecke, & Thij, 2003*). In the virtual E-learning environment, students have to be highly motivated and responsible because all the work they do is on their own. Learners with low motivation or bad study habits may fall behind.

FORMATS AND EVALUATION OF E-BOOKS

E-books are available in different formats, the simplest of which is plain ASCII-standard text. This text is extremely unappealing to read, cannot preserve formatting, and cannot handle graphics. Microsoft Reader e-books are compatible with Windows 95/98/2000/NT desktop and laptop computers as well as pocket PC handheld devices. Adobe reader e-books are compatible with Macintosh, Windows computers, as well as palm PDA's. Adobe Portable Doc Format (PDF) is the open de-facto standard for electronic document distribution worldwide. PDF files are compact and can be shared, viewed, and navigated easily. Gemstar ebooks are designed for the Gemstar e-book RCAREB1100 or the Pocket e-books. These ebook reading devices come with their own e-book reading software. Palm e-books can be read on one's own palm handheld device. Palms allow one to carry as many e-books with oneself as the memory allows. The Mobipocket Reader format is the universal e-book Reader for all PDA's and brings a wide range of e-reading technologies to choose from- Palm series (Palm OsV2.0 and onward), Windows CE, Pocket PC, Franklin e- BookMan, as well as Windows PC's and Windows tables.

E-LEARNING PROCESS

An e-book is typically an electronic equivalent of a conventional printed book but allows access in libraries more through a subscription model as followed for journals. The term "e-book" is used to refer either. Books are processed with class numbers, labels, entered in database, displayed in new arrivals and then sent to stacks Bills of books are paid through Finance Division Supplied books are entered in Accession Register after checking for its physical quality Patrons/ staff recommend books for purchase Acquisition staff orders the books after ensuring they are not duplicates as per the set acquisition norms Patrons consult these books inside/outside the Library Patrons access resources

from Publisher/ Aggregator to an individual work in a digital format or a hardware device used to read books in digital format, more specifically called an e-book device or e-book reader. Andrew Cox and Heba Mohammed define an e-book as a term used to describe a text analogous to a book that is in a digital form to be displayed on a computer. An e-book comprises any book or monographlength sequence of text made available in electronic form. It is the presentation of electronic files in digital displays.The benefits of electronic books for libraries are

- The ability to provide secure access to users 24/7;
- Checking out a book by one person may not prevent another user from accessing the same content;
- E-books are freely searchable for any word/phrase throughout the text;
- Little investment in technology (hardware, software and network) infrastructure is needed;
- No additional shelves are required; and
- Staff members are not required to have technological caliber of high order for providing e-books services to the users.

SEARCHING AND NAVIGATION

Full-text searching and navigation are facilitated within the book, as well as across the collection, and this feature is common among all offerings.These electronic books collections provide hyperlinks to additional resources which is an important feature too. All four collections provide browsing and bibliographic searching. They also provide basic bibliographic information on the search results page for each e-book retrieved.

PRINTING/DOWNLOADING

Springer permits complete printing and downloading once the perpetual ownership has been bought. Taylor & Francis allow just 5 percent (printing and downloading of the text). Thomson permits complete 100 percent printing and downloading. Wiley permits complete downloading of contents.

E-LEARNING MODEL AND E-LEARNING INNOVATION

The E-learning model is based on the technological infrastructure and content, that is, it could becomes a good design function by making the core design knowledge concrete. A learning model is the way in which the core components are built by integrating the components and linking them into a coherent whole to support learning processes. A learning model is further described as consisting of educational environments, course development, teaching and learning, faculty/student interaction, collaborative learning, and valuation and assessment *(Tennyson, 2005).* The possible changes in E-learning innovation can be categorized into four types: incremental, modular, architectural, and radical. The classification is based on the intensity in which change overturns the existing technological components and learning model. An E-learning innovation is incremental if it conserves (or reinforces) the existing technological components and learning model; modular if it decreases technological components but conserves (or reinforces) the learning model, architectural if it decreases the learning model but preserves (or reinforces) the technological components, and radical if both the technological components and learning model become obsolete.

Information and Communication Technology is the driver of the New Economy, and human capital is its fuel. In today's world, not only does knowledge make the difference in how an individual performs but it also makes the difference in how well a company performs and, of that matter, how well a country performs. According to the innovation of the learning environment, it needs a greater involvement of institutional partnerships. Human capital is the fuel to prompt the success from the traditional learning environment to E-learning. Today's learning and E-learning partnerships include a much wider range of nontraditional educational enterprises. "Partnership and alliances among stakeholder's national and institutional policy-makers, teaching and related staff, researchers and students (i.e., learners), and administrative and technical personnel in institutions of higher education, the world of work and community groups are a powerful force in managing change" (*UNESCO, 1998*). For the purpose of this study, the E-learning stakeholders include E-learners, E-instructors, and educational institutions. E-learners are existing or potential learning end users. E-instructor is the teacher who develops courses, provides learner support, and provides evaluation and assessment. Educational institutions provide the platform, services and environment for learners and instructors to obtain what they need.

ICT SUPPORT FOR E-LEARNING TECHNOLOGICAL INFRASTRUCTURE

An ICT can promote educational innovation and modernization. Technological infrastructures could integrate the core design concept and all participants in the process of network learning service delivery. We compared traditional classroom learning and

Elearning based on network infrastructures, application platform, and devices as argued in prior research. Technological improvements in education have taken many forms over the centuries; innovations like radio, television, recorded audio-tapes, CD-ROM products, and computer networks literally have influenced students' learning and instructors' teaching methods. In recent years, several innovative Internet technologies such as Web 2.0 and open source applications have been applied in the development of E-learning systems. Table summarizes the comparison result, which shows that E-learning could provide geographical freedom, temporal freedom, unlimited class size, and change the way of interaction and learner control.For network infrastructures and application platform, the E-learning environment has momentous differences from the traditional classroom learning because the network infrastructure is not required for the later while they are necessary for the former. However, the difference in devices is not significant.

E-LEARNING ENVIRONMENT AND CORE CAPABILITIES FOR EDUCATIONAL INSTITUTION

Actually to build an E-learning environment, it is critical to erect common platforms and service standards that include support for interoperability and transparency. The development and implement of technological components are major topics for educational institution administrators. Indeed, E-learning is creating unparalleled learning value and opportunities for E-learning stakeholders to influence the benefits. To this end, identifying the user value frontier and conveying new value propositions to market should be given a high priority. Because of the chain of different stakeholders involved in an E-learning environment, configuring new strategic alliances and implementing inter-education institution collaborations with them would become increasingly important. Educational institutions must critically position themselves at advantageous locations in viable value networks in order to gain access to core competencies and maintain existing advantages.

In addition, the following technical capabilities are crucial. First, educational institutions have to re-think their technology planning to satisfy and achieve their pedagogical goals in E- learning environments. The administrators of educational institutions must plan the technology environment for E-learning. Second, the abilities of ICT acquisitions and distribution is often an overlooked or an under specified area of school management. Third, ICT maintenance and user support is needed. In some cases, improper adjustment of those settings causes the entire computer to become inoperable, particularly when access to networks is desired. This is a challenge both to policy and management and to the capabilities of school staff. Teachers cannot get the help they need when they need it, which becomes a strong disincentive to the inclusion of technology in their regular teaching practices. Researchers found that more than two thirds of instructors nationally who reported needing help with technology could not get that help when they needed it. Thus, how to support users to use E-learning system is also an important issue. Finally, spanning traditional boundaries is an important capability. Just as inquiry-oriented and communication technologies pose problems for teachers who must learn to communicate in new ways with new audiences, they post similar problems within educational organizations, forcing communication where none was thought to be necessary before. These organizations had not previously had to cope with the highly interactive and interconnected curriculum and education applications made possible by the Internet in the classroom.

IMPLICATIONS OF E-LEARNING AND E-BOOKS

This study utilized the E-learning hypercube innovation model and accompanied it with a secondary data analysis and comparative analysis to analyze the differences between traditional classroom learning and E-learning, investigated the impacts of the E-learning on the E-learning stakeholders, and developed the needed core capabilities for them.The results indicate that the innovation from traditional classroom to E-learning for learners and instructors is radical. The move from traditional classroom learning to E-learning is an overturned innovation in technological components that makes established technical and Elearning delivery capabilities obsolete. This may lead to a drastic overhaul of existing ways of doing education. Thus, an existing E-learning participant must seriously rethink how to rebuild new technological and learning delivery capabilities. Attempting to duplicate the previous technological knowledge and learning model is impractical. For an educational institution, the technological component has a fundamental change, while the learning delivery activities they support are reinforced. To cope with the innovative changes, assisting education institutions to strengthen or reconfigure their technical capabilities to exploit new educational environments should be given a high priority. For instance, the major change in technological knowledge can be facilitated through a combination of four core IT capabilities. Yet, both technological and E-learning delivery capabilities play critical roles in the E-learning transformation. It is helpful to understand what capabilities obstruct an educational institution in the new E-learning environment. Education institutes' administrators should pay attention to improve their learning delivery functions and core capabilities. In summary, the contribution of this study is threefold: First, this research develops a comprehensive E-learning innovation hypercube model and then uses it to analyze the impact of the E-learning and examines the critical differences between them by comparing the features of their technological components (technological

infrastructure and content) and learning model. This analysis provides a better understanding of how E-learning will impact the capabilities of E-learning stakeholders: learners, instructors, and education institutions. Second, this research shows that the change derived from E-learning are multidimensional (i.e., technological components and learning model) and identify their critical differences.These two dimensions are interwoven, and one must not focus exclusively on any single factor in assessing overall E-learning innovation. Finally, this research further explores the core capabilities based on the dynamic capabilities perspective for implementing and managing E-learning innovation. It is helpful to understand what capabilities interfere when E-learning stakeholders transition to E-learning environments. This study further provides several inductive results to enhance our understanding and management of E-learning change. These research results can be utilized as a diagnostic tool for practitioners to assess and analyze what aspects of their E-learning applications are most problematical. Practitioners can compare the current level of each element in their learning delivery functions with the expected levels to understand their relative effectiveness or ineffectiveness and take the necessary corrective actions to successfully make the E-learning transformation. The current study is an exploratory research on developing a systemic model to analyze the E-learning innovations. Several issues deemed worthy of future research are mentioned in the body of this research. For instance, the inference we drew from the secondary data analysis and comparative analysis is based on the assumption that further Elearning innovation evolution does not deviate from the expected course herein. It is not easy to exactly recognize the trajectory of the innovations; hence, the limitation of contextual uncertainties may influence the validity of this study. As more and more education institutions implement E-learning; future empirical researches should refine and extend the results and should continue to seek better means of assisting the E-learning transformation to cope with rapid E-learning innovation.

CONCLUSIONS

E-learning is a highly multidisciplinary field, but it should be noted that research in education science, on one hand, and specific information technology applications, on the other hand, still dominate this area. Technological challenges of the e-learning process are basically much easier to solve than the organizational and methodological ones. Educational institutions must adapt themselves by designing and managing e-learning processes providing quick, targeted, inexpensive and highly flexible information delivery to their users, and thus help in developing their skills and competencies. The e-book collection is intended to supplement the physical collections by extending resource access to the three tiers of the library system and not to replace it. The Library and Documentation Division will also explore options of networking and collaborating with libraries of other educational and research institutions in general and Open Universities in particular for evolving cooperation in providing better access to e-book collections for distance learners. Monitoring usage of the selected resources will lead to a strategy of discontinuing less used ones and adding better ones, thereby optimizing resources. While the library develops and strengthens e-book collections through deliberate considerations, the users' information needs will be strictly kept in view.

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