E-Learning: Strategies for Delivering Knowledge in the Digital Era

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Abstract

Most organizations that need to train their employees are experimenting with some form of Web-delivered learning. But most organizations have focused on the technological challenges, buying the right software, getting enough bandwidth allocated for Web-based training, designing courseware, etc. These are important first steps but the larger strategic issues remain unsolved: how to make e-learning part of the daily work culture, and fully implement its power.

Keywords: about four key words separated by commas

1. INTRODUCTION

Internet and intranet technologies offer tremendous opportunities to bring learning into the mainstream of business. E-Learning outlines how to develop an organization-wide learning strategy based on cutting-edge technologies and explains the dramatic strategic, organizational, and technology issues involved. Written for professionals responsible for leading the revolution in workplace learning, E-Learning takes a broad, strategic perspective on corporate learning. This wake-up call for executives everywhere discusses: Requirements for building a viable e-learning strategy how online learning will change the nature of training organizations Knowledge management and other new forms of e-learning.

2. CHALLENGES FOR INDIAN UNIVERSITIES TO ADOPT IT/ICT

The key challenges affecting the utilization of IT/ICT in Indian Higher Education fall broadly into the following categories:

- Lack of required Knowledge and Technology readiness
- Implementation challenges that have contributed to the failure of past initiatives
- Linguistic barriers to dissemination of knowledge

India faces the challenge of low technology and people readiness in order to realize the true potential of ICT in higher education with penetration of computers and internet, especially in the rural areas being extremely poor. The following numbers are from a research which shows the world wide users of computers as well as disparities of ownership of computers across the India.

3. IT/ICT BENEFITS TO UNIVERSITIES

The innovative use of IT/ICT is believed to be a game changer that can significantly strengthen India’s higher education system and propel the country into becoming a “Knowledge Superpower”. The innovative use of IT in Higher education addresses the three fundamental challenges of Access, Equity and Quality.
The adoption of IT/ICT in higher education facilitates the following:

- Improving the access to the system through online education
- Improving the quality of teaching especially across remote locations
- Increasing transparency and strengthening systems, processes and compliance norms in Higher Education Institutes
- Measure students learning participation and effectiveness
- Analyze student behaviour to maximize students involvement, optimize retentions, and improve placements.
- Analyze students’ performance, placement, application volume, website analytics, and social media metrics for brand audit

Apart from this IT/ICT can perform multiple roles in Higher Education to benefit all stakeholders. To give an example:

- Mode of Course Delivery: Distance Learning with course delivery through Internet (virtual class rooms) satellite and other mediums
- Provide a Collaboration Platform: ICT provides a platform linking universities and other agencies for collaborative research on many technology projects and course content development.
- Administrative Support Functions: ERP systems implemented in universities help complete student tracking and management aspects including admission, enrolment, fees payment, examination and graduation etc.

4. TECHNOLOGICAL CHANGE AND THE LEARNING EXPERIENCE

The information revolution is sometimes compared with the Gutenberg revolution, when the printing press harnessed a mass delivery system to the medium of the written word. It is a good parallel to draw for the impact of the Internet, but it undervalues the other key feature of the interactive computer - its ability to adapt. The simple fact that it can adapt its behaviour according to a person’s input means that we can engage with knowledge through this medium in a radically different way.

A better analogy than the printing press, to give a sense of the power of this revolution, is the invention of writing. When our society had to represent its accumulated wisdom through oral communication alone, the process of accretion of communal knowledge was necessarily slow. Writing gave us the means to record our knowledge, reflect on it, re-articulate it, and hence critique it. The means by which the individual was able to engage with the ideas of the society became radically different as we developed a written culture. When a text is available in written form, it becomes easier to cope with more information, to compare one part with another, to re-read, re-analyze, reorganize and retrieve. All these aspects of ‘knowledge management’ became feasible in a way that had not been possible when knowledge could only be remembered.

The nature of the medium has a critical impact on the way we engage with the knowledge being mediated. The oral medium has the strength of having a greater emotional impact on us which enables action through motivation; the written medium has the strength of enabling a more analytical approach to action. As we create and generate knowledge and information we naturally use different media, depending on the nature of the content and the objective we want to achieve. It is impossible, for example, to use a verbatim transcript of a lively lecture for a print version. The spoken word written down usually reads badly. Medium and message are interdependent; there is an internal relation between them.
What does the new medium of the interactive computer do that is so significantly different from the earlier media? The written medium had a transformational effect on an oral culture because it enabled the representation, analysis and reworking of information and ideas. These are clues we can use. The interactive computer provides a means for representing information and ideas not simply as words and pictures, but as structured systems. A program is an information processing system, which embodies a working model with which the user can interact – not just analyzing and reworking, but testing and challenging. This is true even of the familiar word processing program. It does not just record the words, as a typewriter does; it also has information about the words - how many there are, how they are arranged, what shape the letters are. Because of that it can offer options which enable the user to input changes to the system and see the resulting output. We can experiment with layout, font, structure, in ways that are not possible with a typewriter, and are excessively time-consuming with pen and paper. So the adaptive nature of an interactive computer enables enhanced action because it holds a working model with which we can interact to produce an improved output. Graphics programs, and presentation authoring tools, all work on the same principle.

A spreadsheet holds a different kind of working model. It holds not just data but also ways of calculating with the data to represent different behaviours of a system. A common application is for modelling cash flow for a business. The user can determine the initial data about costs and pricing, for example, and the spreadsheet calculates the profit. By changing the prices, the user can experiment with the effects on profits. The cash flow model embodies an assumption about the effect of prices on sales - for example, that they will fall if the price goes above a certain limit. But the user can also change that assumption, by changing the formulae the spreadsheet uses for calculating profits. So there are two ways in which the user can engage with this model of the cash flow system: by changing the inputs to the model, and by changing the model. The adaptive nature of the medium offers a creative environment in which the user can inspect, critique, re-version, customize, re-create, design, create, and articulate a model of the world, wholly different from the kind of model that can be created through the written word.

These two examples illustrate the power of the interactive computer to do a lot more than simply provide access to information. It makes the processing of that information possible, so that the interaction becomes a knowledge-building exercise. Yet the excitement about information technology has been focused much more on the access than on the processing it offers. And the technology developments so far have reflected that. The focus has been on the presentation of information to the user, not on tools for the user to manipulate information.

The sequence of technological change in interactive technologies has been a historical accident, driven by curiosity, the market, luck, and politics – never by the needs of learners. Learning technologies have been developing haphazardly, and a little too rapidly for those of us who wish to turn them to advantage in learning. This becomes apparent if we compare these technological developments with the historical development of other key technologies for education. Table 1 shows some of the main developments in information, communication, and delivery technologies over the last three decades, and against each one proposes a functional equivalent from the historic media and delivery technologies. The story begins with interactive computers because the move away from batch processing brought computing to non-programmers. The user had access to a new medium which responded immediately to the information they put in. As a medium for information processing, it was radically different from the much more attenuated relationship between reading and writing, thus creating a new kind of medium for engaging with ideas.

5. CONCLUSION

E-learning has been used very effectively in university teaching for enhancing the traditional forms of teaching and administration. Students on many courses in many universities now find they have web access to the lecture notes and selected digital resources in support of their study, they have personalised web environments in which they can join discussion forums with their class or group, and this new kind of access gives them much greater flexibility of study. Part time students can more easily access the course and this in turn supports the objectives of wider participation, removing the traditional barriers to HE study. David McConnell’s chapter emphasises the importance of network technologies for enabling both campus and distant students to learn through social interaction and collaboration. Just as the historical inventions of the printing press, the postal service, and libraries opened up access to and participation in the medium of the written word, these technologies are opening up HE through its reliance on this form of access to ideas.

E-learning could do more. The interactive computer could be used to give students an alternative to writing as a form of active participation in knowledge-building. It can model real-world systems and transactions, and can therefore create an environment in which learners can explore, manipulate, and experiment. The features of the digital environment are fully controlled by the program so it can be designed to offer as much or as little freedom to the learner as is appropriate to their level of mastery. A simple example is a mathematical model of a well-researched system, such as...
population dynamics in biology, or unemployment fluctuations in economics. An interactive simulation enables students to explore how the model behaves according to the way they change parameters. The teacher can set challenging problems, such as finding the combination of changes in inflation and exchange rate that produces a sudden rise in unemployment. Students can inspect and experiment, build and test hypotheses, and generate a rich sense of how this model behaves, i.e. how this economic theory works. The teacher could extend this further, as they become more knowledgeable, by noting that the model fails to account for a recent set of data, for example, and offer a variation in the model which students must then further investigate and interpret in real-world terms. The nature of the intellectual activities they practice through this interactive medium is importantly different from the process of reading, critiquing, interpreting and articulating that is typical of their work in the written medium. It does not replace it, but it certainly increases their capability in understanding and critiquing an existing theory. Any system that can be modelled in this way, in any mathematically-based discipline, is open to interactive investigation of this kind.

REFERENCES


AUTHOR

Sunil Kumar Sharma, working as Faculty Member at Department of Computer Science, Aligarh Muslim University Aligarh, is having his MCA from Aligarh Muslim University Aligarh in 2004. He is having more than 9 years of teaching experience to teach MCA and BCA classes. He is also pursuing Ph.D. from Bhagwant Univerity, Ajmer, Rajasthan. His area of research is E-Learning