

Supporting Learning in the Digital Age: E-learning Strategies for NOUN (National Open University of Nigeria)

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E-learning has long been celebrated as the solution to access in education. There seems to be a belief worldwide that by including e-learning technologies in learning packages, learners' success and economies of scale will be ensured in ODL (open and distance learning). New innovations like the internet and mobile technologies provide a great opportunity for mass delivery of education information, especially in Africa where governments and institutions are struggling to equip the people with much needed skills for development. Literature suggests that ODL and e-learning delivery are synonymous. In this context, it seems as if the vision of distance education as a means to provide education to whom have been denied that it is being undermined by the overriding enthusiasm with technology. The idea is that if a student is computer literate, he/she will be able to access the world of information that the internet and other electronic media can deliver and thus become educated. It is the writer's contention that blending of e-learning strategies is essential in the delivery and supporting of learning in the digital age and can go a long way in supplementing and enhancing the teachers' work.

Keywords: e-learning, learning strategy, supporting learning, digital age, ODL (open and distance learning), institutions

Introduction

The African Ministers of Education attending the Regional Conference on Education For All by 2015 in Johannesburg in 1999 advocating the adoption of technologies recommended that "new" appropriate and cost-effective technologies shall be adopted to complement the integration of indigenous educational methodologies (UNESCO (United Nations Educational, Scientific and Cultural Organization), 2001).

E-learning has the potential to transform the way we teach and learn. It opens new opportunities to raise standards, widen participation in life-long learning and improve the learning experience.

Most importantly, the e-learning cannot replace lecturers, but alongside existing methods, it can enhance the quality and reach of their teaching. E-learning is fundamentally about learning and not about technology. The learning strategy proposes a course of action which is based on the needs and demands of learner's and their quality of educational experience.

Basic Principles of E-learning

E-learning applications are designed to promote the follows.

Experienced-Based Learning and Real-Life Situation

The idea of engaging students in useful work while they learn is a trend which can help to foster learning through out all levels of education and training. Community service learning is an educational approach that integrates service in the community with intentional learning activities. With effective community service learning efforts, members of educational institutions and community organizations can work towards outcomes that are mutually beneficial.

Service learning which learners can be engaged by using ICTs is as follows:

- (1) Analyzing the electric grid to reduce electricity demand through energy efficiency;
- (2) Students exploring the role of satellite telemetry, remote sensing, astronaut observations and weather satellites in wildlife conservation by having kids track migratory animals in life-time via the Internet (Solar Quest, 2004);
- (3) Students can create migration maps, record climatological and habitant data and keep field notes as part of a tracking journal.

Collaboration, Connectivity and Interactivity

There are many collaborative learning projects on the Internet, such as ePals (penpal site), IEARN (the International Education and Resource Network) and ENO (environment online).

ePals is the self-proclaimed world's largest K-12 online community, with more than 325,000 educators and 126,000 classrooms in over 200 countries. It safely connect, exchange ideas and learn together. ePals provides blogging software and a mail program, live classroom collaborations and discussions, best-practice example of classroom use, and tools for searching projects and connecting with classrooms and finding communities. ePals is being widely used as a language and cultural learning tool (retrieved from <http://www.epalscorp.com>).

IEARN is another similar set of tools, with the specific mission of improving life on the planet. It is a non-profit organization with over 20,000 schools and youth organizations in more than 115 countries. IEARN empowers teachers and young people to work together online using the internet and other new communication technologies. Each day, over 1,000,000 learners are engaged in collaborative project work worldwide (retrieved from <http://www.iearn.org/>).

ENO online is an environmental awareness. A global virtual school and network located in Finland have approximately 400 participating schools from 104 countries. ENO's learning activities include:

- (1) A youth forum for discussing sustainable development issues;
- (2) Using a global tree planting campaign among schools as a unifying motivator;
- (3) It applies a school "twinning model" where schools from different countries partner up to learn about specific themes or work on project together;
- (4) Its communication platform is based on Google's free suit of communication tools, Google groups, maps docs, e-mails and talk chat application (retrieved from <http://www.newsvine.com>).

System Thinking, Synergy and Flexibility

Interactive multimedia can be used to promote systems thinking through modeling, simulations and games. It has the following software programs:

- (1) Stella software;
- (2) Sim city;

- (3) Multi-player simulations;
- (4) Scenarios.

Stella software is one of the top modeling software programs designed to develop systems thinking of learners. It help learners to create models of local or global situations, think about variables and communicate to others on how a particular system works—What goes into the system, how the system might be impacted and what the different outcomes might be. The program can be further used for:

- (1) Simulating a system over time;
- (2) Learners explore by asking “what if” and watching what happens next;
- (3) Learners explore the real world;
- (4) It explores ingenuity in learners;
- (5) Enhancing learners’ relationship;
- (6) Learners are able to see the inputs and outputs.

The software moves learners beyond the traditional knowledge acquisition process into the processes for thinking and communication, both through their individual use of the software and group interaction on the models and their implications.

Sim city promotes analytical and systemic thinking skills and understanding of what is involved in building and managing a complex organization.

Multi-player simulations offer an opportunity for students to understand how the actions of others impact outcomes in a large scale, e.g., the author Adobe and Adobo (retrieved from <http://www.learningvillage.com/html/simcity4html>).

Scenarios are another learning strategy used to promote systems thinking. Scenarios can help learners to appreciate the challenges of sustainable development. There is a mini-online course designed for adults that introduces learners to the building of scenarios and provides specific applications of scenarios to aid learners’ understanding.

In consequence, the institution should recognize the potentials benefits of e-learning as a means to archive a more learner centered and personalized approach to learning. It helps learners gain greater levels of control in the management of their own learning.

To facilitate the continued integration of e-learning within the curriculum, the institution should explore ways to promote and encourage innovation in e-learning, e-assessment, e-support and e-feedback and facilitate the dissemination of good practice in these areas. If e-learning is integrated into the curriculum, new learning approaches and pedagogy will emerge.

The author deems that it is wise to state the pedagogy of e-learning for the digital age.

Pedagogy of E-learning

There are basic issues to be noted in the pedagogy of e-learning. In reality, different ICTs-based technologies can support different pedagogic approaches. For instance:

(1) NOUN (National Open University of Nigeria) provides LRC (learning resource centers) with a school-based training system for all the study centers in the six regions. Sets of equipment compliments the learning resource centers, e.g., printers, CD (compact disc)-players and writer, data storage items (hard disks and CD-ROM (compact disc read only memory), television, satellite dish and receiving software, digital camera, video use in micro-teaching, set of an audio and video CDS, prints and guides). NOUN has a radio

station where student listens and receives their lectures;

(2) NOUN engages in the configuration of equipment, this is by getting and storing current information on the new curriculum and teaching methods. It is also by observing and discussing lessons taught by other teachers via technology, either on CD-ROM or in real-time via satellite television and learning to use computers;

(3) NOUN finds and creates educational resources to use in teaching, preparing lesson plan with colleagues, interacting with other teachers and trainers either online or in meetings and workshops. The teaching learning resources are adequately managed by efficient and effective planning, coordination and monitoring;

(4) There are the technical and support trained staff to maintained equipment, solve technical problems, assist to use the equipment and manage the educational resources, and learning support teachers who provided pedagogical leadership and assistance;

(5) NOUN concentrated much on human resource development. Emphasis was on the soft technology of people's skill, knowledge and understanding rather than on the hard technology of equipment. As a practical response to the growing demand for training and research, RETRIDAL (regional training and research institute for open and distance learning) was established in collaboration with the COL (commonwealth of learning) to ensure the success of ODL (open and distance learning) system and fully maximize the benefits of distance education in the West Africa sub-region, much of the project's success was due to this;

(6) The mandate is to spent some percent of its budget on equipment and training of different kinds (e.g., new curriculum, teaching methods, training of trainers, materials development, preparation of computer-mediated, online (Web-based) and CD-ROM based distance learning materials, management of learning resource centers and the use of e-learning and its integration into teaching and learning);

(7) In dedicated distance education institutions in Nigeria, there has been a drive to get students online to support teaching, learning and administration. The Internet provides various means to remedy the lack of interpersonal communications that has been "the Achilles heel of distance education";

(8) E-learning is pedagogically integrated into the course design and adapted for the current environment, which enable and support enhanced forms of learning. NOUN students are made to work in small groups on a collaborative task, where they use the internet to find information resource. Conferencing or e-mail is used to communicate and construct a joint project which is assessed, then using e-learning as a clear pedagogic role;

(9) With the computer networks, learners are encouraged to take an active part in the learning process and construct their knowledge by interacting with learning materials and their peers. There is an online learning discussion forum as social interactive learning environments, for constructivist learning theories. The constructive principles provide a set of guidelines for creating learner-centered, collaborative environments that support reflective and experiential processes.

Problems and Issues in E-learning

The under listed are the problems and issues facing the institutions, policy makers, researchers, developers and practitioners.

Accessibility to Hardware and Networks

Infrastructure has remained a major teething problem for many schools and education providers. Studies have revealed large variations in the number of computers per students in different countries and subject areas. For many institutions, technical support is one of the major problems.

Interoperability and Redundancy

Much investment has been made in platforms and software, and much effort made in producing learning materials, the speed rate of change has rendered much of the expense and effort redundant. The attention now is on how to ensure interoperability between different learning systems and platforms and ensuring migration of applications and learning materials between systems.

Lack of Skills on the Teachers and Trainers

Teachers' and trainers' attitudes are often a barrier to the implementation of e-learning, both of which lack the skills to apply to e-learning and are hostile to the use of ICTs for learning. Teachers and trainers have to implement effective learning and pedagogies, as to suit the blended learning concepts invoke. The questions that should be asked are: (1) What should be the role of teachers and trainers in the e-learning; and (2) How could they be supported in these new roles?

New Models of Teaching and Learning

E-learning offers great potential for extending access to learning. But, how can this potential be best harvested within public education and training systems and within small and medium enterprises is far more questionable. Literature suggested the need for new institutional roles and models for the delivery of e-learning, including partnerships and networks. This is a challenge to traditional forms of education.

Managing Change

Change management processes are always difficult to come by, e-learning hope for potential will involve very widespread and on-going processes of change at every level of education and training systems and institutional level. The management of these change processes requires a policy and strategic approach to e-learning. Many institutions presently lack the knowledge and expertise to develop such a strategic approach.

Pedagogy of E-learning

Issue of pedagogy is critical to e-learning. E-learning cannot replace or replicate traditional classroom learning but put in place, new challenges on how learning can be effectively facilitated and managed. There is an on-going debate as to what constitute effective, how pedagogies approaches can cater for the needs of particular subjects, different learners and varying context or situations for learning.

Production of E-learning Materials

Most e-learning materials are text based. As such, they do not provide a compelling learning environment and are often dull and inappropriate for learners. The production of learning materials is both a technical and pedagogic issue.

Writing in the lifelong learning journal line in 1998, Matti Sinka said:

If we expect implementing ICT to bring about profound change, then we are still struggling in the wide chasm between early adopters, and an early majority, a chasm which is always. The most difficult of the discontinuities on the innovation Adoption curve to overcome. (p. 15)

Can nothing be done? Should we watch and see some institutions and individual allowing this potential benefit to learning collapse?

We can together examine and proffer some rethinking that can at least support learning in the digital age. This is the bone of contention for this paper.

E-learning Strategies for the Digital Age

The following strategies can be adopted by the institution managing ODL programmes.

Open Source

Develop and adopt strategies of implementing open and source software. There are very good open source programmes available for most applications in education and training. Open source not only offers major cost savings, but can also provide higher quality and reliability.

Of course, institutions cannot change overnight. Firstly, when new software is required, open source applications should be considered first. Secondly, institutions should develop strategies to migrate from proprietary to open source software. Larger institutions may consider forming partnerships to the many open source companies providing support and consultancy services.

Establish Data Repositories or Contribute to Collective Repositories

Larger institutions should consider establishing their own materials repository or a distributed repository across the institution. Smaller schools may consider the technology too advanced and demanding of resources and should consider partnerships and networks to contribute to a shared repository. In all cases, it is important that as far as possible, repositories are open and do not impose proprietary standards.

Look at What Resources Are Available

There are many free resources available on the Web, and collections and repositories of free learning resources are growing fast. The biggest barrier to using these free materials may be the lack of awareness of teachers that they exist and the lack of skills and knowledge on how to search for free materials. Searching for and using free materials should be an integral part of any training for teachers and trainers in e-learning.

Encourage Staff to Share Resources

Teachers and trainers have the skills to produce learning resources and materials. What is commonly lacking is a culture of sharing those materials. This requires an organization culture change and a redefinition of profiles. The creation of materials should become an accepted part of teachers' and trainers' every day work. This does not mean merely adding an extra burden of work, and institutions should review their policies to include materials' development as a part of the everyday activities of their staff. At the time, teachers and trainers should be encouraged to share materials through institutional and shared repositories.

Develop Partnerships and Networks

Institutions should actively seek to develop partnerships and networks for e-learning. These partnerships and networks may take many different forms, dependent on need and include the sharing of resources and resources development and the delivery of courses and programmes.

The effective use of collaboration and groupware can enhance the operation of such partnerships. Institutions should also consider forming partnerships with software companies and materials developers which go beyond customers'/suppliers' relationships to iteratively and actively co-develop e-learning applications.

Integrate ICT With the Whole Curriculum

Institutions should adopt a whole-curriculum approach to e-learning. Rather than see e-learning as a separate activity, appropriate only to individual targets groups or courses, they should look at how e-learning can be used to enhance present learning provision.

This does not mean that all courses should be delivered through e-learning. It means an understanding that there are many different e-learning applications which could be integrated in the organizations as a part of e-learning and teaching strategy, including for example, access to resources, the use of games or the provision of portfolios for students following traditional learning programme.

Evaluate E-learning Practice

We are still at a stage of experimentation in e-learning. It is important that institutions know what works and what does not. This means developing a rigorous strategy which not only focuses on the technology but on learning. Formative evaluation should be an integral part of all plans and projects for e-learning with the results of the evaluation informing further development and the review of strategic plans and future directions.

Conclusions

However, ODL institutions recognize that learning can be supported through information and communication technologies. They should continue to develop simple and effective means to direct learners to support systems (both on-line and face-to-face) and ensure that learners with specific learning needs can have some of those addressed through assistive technologies. Institutional goal is to ensure that its e-support is simple, accessible and coherent. The institution commits to ensure that it is pro-active addressing learners differing abilities to access technologies, either because of location, special needs or the cost of the technology needed to access the materials. There is also a potential strategic opportunity to enhance support for our research-lead learning agenda. Technologists, library staff and academic staff should work collaboratively in support of this goal.

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