A Paradigm Competences and Library Services For E-Learning: A Proposal for Librarians in Developing Countries

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Abstract:

Education has metamorphosed from the traditional physical environment to virtual platforms. The later is designed to provide the learner with learning opportunities in synchronous or asynchronous forms. Both opportunities involve little or no physical contact. All activities are performed within the comfort zone of the learner. Though developing countries have not fully embraced this mode of learning , it is gradually taking roots especially in universities. The consequence of e-learning is that community of teachers and learners are virtually connected. Thus, there is a gradual decline in the communities call for learning resources in physical forms. For them, the walls of physical libraries should be collapsed for cable or wireless networks through which information resources could be relayed to users' comfort zones. Accordingly, physical libraries and services provided therein will tend to be less relevant as e-learning advances in developing countries except if a paradigm shift is made from the traditional library services to those which will support elearning. Hence a conceptual frame of library services is proposed to act as a pedestal service to support e-learning in developing countries. The framework is based on observations and experience on what e-learning platform represents, the basic competencies required to work on the platform and the mode of information resources as well as services needed by university community in developing countries. The paper locates, describes and present the place, nature and content of the library which can be made available for elearning, the characteristics and competences required of the librarian who qualifies to serve as the e-librarian. It also provides explanation for a diagrammatic model of the library services platform which will support e-learning. The model shows relationships or interdependency of the learner's environment with the various services

provided for elearning . These services include infogateway and infoeducation which may be visualised as direct and indirect pointers to Programme/subject librarian(instant messaging/chats), full text or abstract of print and electronic resources (General), Course Guides , Reference(General and course specific, Lecture Notes, Indi- Resources (Past question papers, research reports, seminar papers , lectures etc) Assignments/Project support . Social media links etc. The position will assist continuing education programme developers, Information technologist, library educators as well as professional librarians who are employees of academic institutions in developing countries. Continuing education programme developers will be privy to the needs of librarians to justifiably take their place in the world of elearning. With such they will design continuing professional development programme that will enhance librarians' competences. Information technologists will design e-learning platforms that will accommodate librarians and library services. Librarians employed in academic institution will be abreast of the changing library services expectations and work towards it while library educators will review their curriculum to adapt to the library needs of education stakeholders.

Preamble

Learning, a major constituent of formal education has always been the primary focus for change in behaviour from the traditional era. Learning though facilitated by instructor or educator becomes more apparent through the learner's independent effort which is not always directed by the instructor. Learning in the university environment, is centrally supported by the library. Global boom in the desire for university education accompanied with the advent of information and communication technologies redefined pedagogical approach to teaching and learning. Education metamorphosed from the traditional physical environment to virtual platforms commonly known as e-learning. The later is designed to provide the learner with opportunities in synchronous or asynchronous forms.

Though developing countries are yet to fully embrace these mode of learning, it is gradually taking roots especially in private universities. E-learning provides opportunity for teachers or facilitators and learners to be partially or fully connected virtually. Hence, there is a global decline in communities' call for learning resources in physical forms. Many institutions are de-emphasizing print while collapsing the walls of physical libraries for cable or wireless networks through which information resources are relayed to users in bibliographic or full text forms.

Consequently physical libraries and services become less relevant as advancement is made towards e-learning. However transformation in libraries is much more than the use of ICT to provide more effective print services rather than change on the demand to match rapid development in technologies for learning and increase range of Internet driven resources (Secker 2004). For university libraries to match the prevailing educational transformation there is the need for a paradigm shift in services as well as competences. This will be possible if the place of the library and librarian in the e-learning environment is identified. A conceptual

frame of the role and position of the library and librarian in e-learning environment, the characteristics and basic competences required of the e-librarian, the services the library can inject into the e-learning platform as well as diagrammatic model of library services for e-learning is provided. The frame is based on observations and experience on what e-learning platform represents.

Elements of E-learning Platform

'E' represents electronic, hence E-learning involves learning facilitated electronically. Views differ on what constitute e-learning. To Sen (2009) it is an aspect of e-education which is Internet enabled. It is "Information and communication technology enhanced learning in which learning contents and activities are delivered via Internet, Internet/extranet, audio/video, satellite, broadcast, interactive TV and C-D ROM" (Wang & Hwang 2004). CARL (2005) posited that e-learning is teaching, learning and research enabled by digital environment where the learner can access online courses with its materials, instructors' notes, topics and discussion environment. One salient aspect of these definitions is elucidated by Sharifabadi (2006) that the instructor and the learner are separated in space and the learner uses technology to interact with the instructor and other learners. Consequently e-learning could be described as learning that is driven by technology, facilitated by the teacher while the learner is located at the centre. Though learning takes place in asynchronous or synchronous mode, minimal activities are carried out in physical environment. Arising from the descriptions and definitions of e-learning is that e-learning can operate with the availability of some basics including technology, human and other material infrastructure. Depending on the level of deployment, e-learning technology includes content/learning management system, Intranet and Internet technologies, and communication technology platforms as listed by Hanover Research Council (2009). The Human element includes the learner as the hub, the course instructor, instructional technologist, graphic designer, technical typist and production specialist as practiced at Penn State Whold Campus (2000). Important elements of e-learning are the course instructor who develops the course and other support services staff depending on the capacity of the course instructor.

Interestingly, majority of the e-learning platforms observed and experienced did not provide a place for libraries and librarians. This is very significant in view of the supportive role the university library plays to ensure effective, efficient and life-long learning. A typical elearning management system deployed by the American University of Nigeria made provision for the following modules: Course, Grade, Calendar, Announcement, Assignment, Discussion, People, and File. In such design where the place of the library is restricted to file, course reserve or e-reserve, the focus of university education as the citadel of learning is undermined and being relegated to instructor directed learning. Without prejudice to any elearning platform, it is necessary to emphasise that library's support for learning is more apt now than the traditional print mediated learning. The overwhelming e-resources which increases geometrically demands that libraries should support learners to sift the grain from the chaff. Hence CARL (2005) emphasized that effective e-learning is possible where platform is provided for faculty to find relevant resources and services which could be integrated into the specific courses. This is possible where a collaborative environment that brings together faculty, students, information technology, educational technology and library is available. The library and librarian will not be seen as independent subsystems expecting input rather than as interwoven systems ready to inject meaning and service to make a difference in speedy evolving education platforms. The mindset of the later will result in paradigm shift in resources provided, services rendered and competences needed for the services.

Library and Librarian's Role in e-Learning

Research has shown that users' interest on print resources as well as print services has continued to dwindle. Anunobi and Ogbonna (2014) found in their study that faculty and students in a traditional education environment preferred hybrid library resources (electronic and print) and innovative social media driven library services than the traditional print services. The lesson is that the use of print driven services will continue to dwindle with evolving technology and the availability of enormous resources virtually provided with increased connectivity. Libraries and librarians need to revaluate and revisit the means and manner of resources and services provided to maintain their central role as a hub for lifelong learning. Sen (2009) posited that requirements for e-learning support by academic library are of two types.

- Technical and fundamental requirement and -
Technical and cultural requirements.

Technical and fundamental requirement involves provision of information window as part of e-learning platform, aggregation of access to resources, provision of bibliographic tools, and provision of access to tools that assist users to present the content in preferred format as well as integration of software needed to evaluate status of resources.

Technical and cultural requirement includes integrating library resources into course management system, integrating third party commercial information services, customizing the e-learning environment for storing personally preferred resources, providing virtual reference services and provision of training modules needed for effective information service and use.

At the library front, resources take precedence over services therefore library resources for effective eLearning must be identified first before the services. Considering that e-learning could be supported with blended/hybrid resources and in view of the consolidated print resources available in many university libraries which copyright license is not held, university libraries support for e-learning in developing countries cannot be completely eresources based. The resources will consist of both digital and print libraries contents. The resources should contain though not restricted to Online Public Access Catalogue (OPAC), licensed databases and E-books, selected Internet resources, selected course dependent resources, In-resources or Repository, and other libraries resources. OPAC makes available bibliographic or full text information of print resources, which can be delivered to user through physical means or scanned for email delivery. License must be sought for scanned resources. It also provides links to full text electronic resources owned or subscribed to by the university library. Licensed databases of books, journals etc. are made available for elearners. The library can also avail e-learners with resources which are selected, evaluated and considered suitable for university education from the gamut of Internet resources.

The library provides course dependant resources for students of a particular programme. This is achieved in collaboration with the course facilitator and subject librarian; a very important role of a library in any e-learning environment. In some platforms the latter is called Course Guide. The In-resources of the e-learning platform consists of indigenous resources of the university that have been digitized and links provided to its host from the e-learning platform. They include but not limited to question papers, thesis, dissertations, addresses, proceeding, journals, lectures etc.

The library can also provide tutorials, software as well as other research support resources such as citation, plagiarism, simulations, video clips, and reference materials.

The provided resources must be accompanied by effective services else the findings of Sharifabadi (2006) holds, that the unawareness of the existence and how best to use the resources with the accompanying integration process will undermine the efforts in providing the resources. Services in the e-learning environment are as crucial as awareness of and the provision of the resources. It has been observed that 50% of services provided by university libraries in the traditional print environment are not utilized. The reason for under utilization may not be far from unawareness and lack of competences to use them. Therefore, collaborating with the e-learning stakeholders to identify the place for library and providing the resources is a basic step but rendering services to ensure effective use and support for elearning is a major step.

Two broad services could be rendered by university libraries for effective e-learning. They include infogateway and infoeducation services. Infogateway services involves sourcing, acquiring, processing and making available as well as creating un-intimidating, sharp cutting edge gateway to resources needed for e-learning. The ingenuity in this service includes one click to resources gateway. To ensure that core resources especially course related resources are made available in full test, copyright licenses must be sought for the print format which is subsequently digitalized. Continuous searching, downloading and evaluation of free Internet resources including audio and video should be made. Communities of stakeholders for particular courses should be built. Members of the community will include instructors, students and subject/course librarians. Infogateway services could be achieved through interdependency among faculty, course instructors, learners, librarians and resource platforms. At any level or module, stakeholders will be able to access and communicate with the required information resources without prejudice. Diagrammatic model of the Infogateway service is provided in Figure 1.

Another broad service that could be provided by university libraries and librarians for elearning is infoeducation. In e-learning environment, the librarian acts as infoeducator to faculty, instructor and students (learners). The library provides all education in the e-learning environment relating to the what, where and how of information resources. The library/librarian's role in infoeducation includes information literacy, other tutorials, and communication. The library should have the responsibility of developing the infoeducation module on the learning management platform. Fully developed information literacy course will be housed in the infoeducation module in addition to tutorials and communication services. Following the module of e-learning, the infoeducation module facilitated by librarian is expected to have provision for announcement, assignment, grading, calendar, discussion, course materials or files and the library. Within course materials the librarian should be able to provide lecture notes (Shodes and Prose), different media of tutorials, and question papers.

Communication service of infoeducation should be provided for every course developed as well as part of the library. Communication service can be visualized as library marketing services. Majority of them are Web 2.0/ Social Media driven. They include virtual synchronous presence as embedded subject librarian during classes, where the later provides instant information to assist learning and facilitation; e-reference services employing chat, instant message and e-mail technologies; providing and aggregating information on "how to do" question which in some content management systems is described as frequently asked questions(FAQ). Communication service also provides the e-learner and facilitator the

opportunity to place-hold, borrow and request for return of any print resources using the platform.

Creation and provision of e-resources, with the attending e-services and relationship with epeople cannot be effective without the human element in the library. In effect Johnson, Trabalsi & Tin (2008) emphasized that the success of library and librarians in e-services is determined by human factors. The librarian provides the resources, services and collaborates with faculty, researchers, scholarly societies and publishers to develop and manage all activities revolving around infogateways and infoeducation. His role is transformed from providing library resources to providing continuous support as needed by facilitators and learners. Therefore the librarian must be a focal point to the success or failure of library support to e-learning.

Characteristics and Competences of e-Librarian

A change in the role of library implies a change in the character and competences of the role player. The position of the librarian as a gatekeeper must change to gateway provider with the advancement in e-learning. Both the skills and overall outlook of the librarian must change.

Characteristically, the e-librarian must be diligent, zealous, energetic and technophilic. The e-librarian must be proactive, creative and innovative. Diligence zealousness, and proactive behaviour will spur the e-librarian to persevere in challenges that will result from deployment of new technology and enable him resist any detractor or inhibiting reactions of other stakeholders. Technophic tendency will enable him embrace new technologies which may facilitate the achievement of the mission of the library. Innovative and creative traits will enable the e-librarian think out of the box and push out of the envelope. This is necessary as the instructor and the platform developer may depend on the e-librarian for customization and deployment of enabling environment for library e-resources and eservices. The e-librarian needs a collaborative trait to work with a wide range of e-learning stakeholders.

Apart from the biological and environmental modified traits, the e-librarian must acquire and develop competences needed to work as information specialist in e-learning platforms. The knowledge, skill and attitude required by the e-librarian could be classified as library and information science based competences, technical competences and project management competences.

Library and information science competences are derived from the traditional as well as hybrid library operations and services. The technical competences are technology based while the project management competences derived from management. Some of these competencies are found in job announcements posted by some universities including the University of California Blankley advertisement for e-librarians. The advertisement stated that the e-librarian must be competent in teaching and learning, application deployment in university, creation of instructional and information materials and have the capacity for analytical, interpersonal and effective communications. Other competences include management of complex project, taking initiative, flexibility and collaborative capacity. The e-librarian must also demonstrate the ability to learn and apply new technologies as well as the capacity to provide training to users. ALA (2009) lists technological core competences which include:

- Information, communication, assistive, and related technologies as they affect the resources, service delivery, and use of libraries and other information agencies.

- The application of information, communication, assistive, and related technology and tools consistent with professional ethics and prevailing service norms and applications.

- The methods of assessing and evaluating the specifications, efficacy, and cost efficiency of technology-based products and services.

- The principles and techniques necessary to identify and analyze emerging technologies and innovations in order to recognize and implement relevant technological improvements.

Choi & Rasmussen (2009) informed that effectiveness in the creation of digital content requires the knowledge of the following technologies: digital library architecture and software, technical and quality standards, HTML coding, general computer skills and computer literacy, database development and management, web mark-up languages such as SGML and XML and web development and design.

Emphasizing on the importance of other skills outside the traditional library competences, Fernandez & Buenrostro (2015) noted that notwithstanding the traditional skills like written and verbal communication, there is need to develop capacity to create and nurture partnerships, develop innovative new programs and market the services to the user community.

The bottom line is that the e-librarian will bring to bear the librarian traditional competences and inject technology based competences into it in other to plan, direct and actualize infogateway and infoeducation as required in the new paradigm learning platform.

Diagrammatical Model of Library Services for E-Learning

The diagrammatical model of library services for e-library is presented in Figure 1.

It shows the typical elements or windows available in a learning management system which could be customized using the observed 'CANVAS' – a Learning Management System deployed by American University of Nigeria as sample.

The library as a hub of education must have its rightful position at the main /home page of the system as indicated (1). The diagram indicates that information literacy (2), a major infoeducation responsibility of library in e-learning environment is domiciled as a course on the platform. The infogateway and infoeducation services though independent are interrelated. This informs the gridline delimiting infogateway (3) from infoeducation (4).

From the window on Assignment, Discussion, Course, People, File/Course reserves, the library could be accessed. The Subject Librarian is expected to be a member of e-people (people) (5). This will provide him the opportunity to be embedded in the course, discussion and assignment. While the infogateway (3) is "a do it yourself" platform, the infoeducation
(4) is all about participatory support. At the infogateway there are resources which are continuously updated, evaluated and expanded. Available in the infogateway window as shown in the diagram are. (6) Course Reserve Materials: Print and electronic materials which the instructor in collaboration with the subject librarian provides as compulsory/necessary read

materials for the course. (7) Other Materials: Including databases, search windows for print holdings, Indi-Resources (indigenous resource/repository) and other aggregated LAN and Internet based resources. Access to the later can also be provided through the search window. Infoeducation platform (4) of the library provides opportunity for librarians to act as infoeducator where all types of advice, teaching, support are provided for effective eeducation. On this window is housed the 'HOW TO' – (8), the subject librarian (9) who is central in the provision of infogateway and infoeducation services. The subject librarian ,a member of e-people in the platform is embedded to audit the course and the learners discussion, assists in the provision of resources for assignments, and plays a leadership role in sourcing, collecting, evaluating resources for a particular course. He therefore plays significant role in the development of other materials (7) as well as provides guide on "HOW TO' (8). To connect with learners, the infoeducator uses phones, chats, email, instant message technologies.
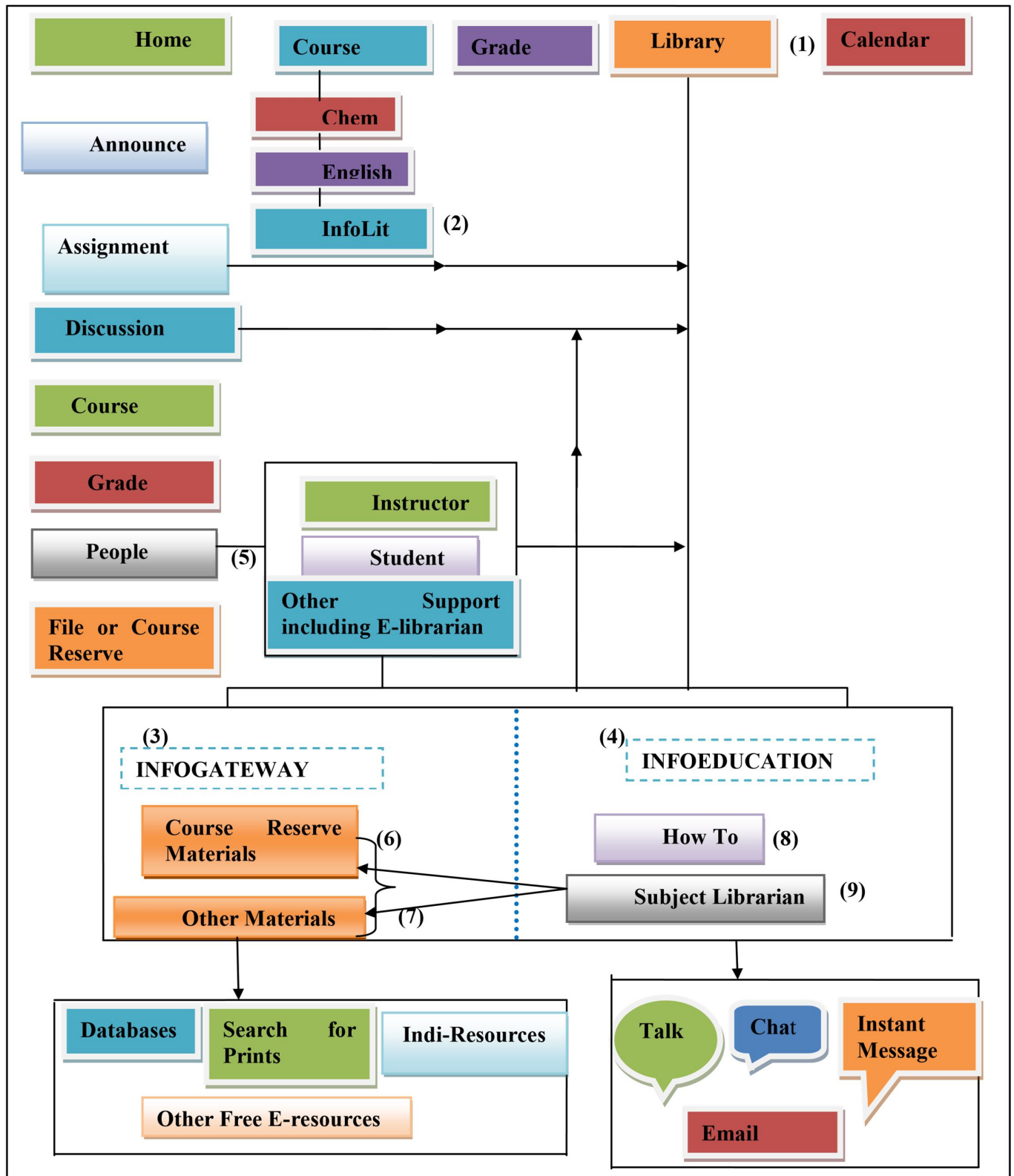
Figure 1: Diagrammatical model of library services for e-learning For Developing Countries

Conclusion

Pedagogical changes in learning results in a consequential change in the ways and manners of the support. Though librarians in the university environment have been accustomed to the well established print for service initiative, research has shown a turn around by stakeholders in university education. Effectiveness of the librarian in rendering support services is a factor of convincing evidence of the library's relevance. The evidence is visible in the paradigm shift from the traditional role to e-librarian role which revolves around infogateway and infoeducation. Infogateway involves a shift from information gatekeeper to acting as a pointer to where the right information could be found. A major step to the right information is infoeducation which rests on the shoulder of the infoeducator in the library. The Infoeducactor can effectively perform the new role when competence evolution ensues. This involves the marriage of library and information science competences with technical and project management competences.

Acknowledgments

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