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**Theme:** Balancing Quality and Quantity: The Global Challenge for Tertiary Education

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## Abstract

The impact of emerging Information Communication Technologies on libraries has been explosive and dynamic over the years, and academic libraries have been at the very center of this deluge. The increased demand for quality higher education by diverse groups poses a challenge for tertiary institutions. The library being the “heart” of the institution is expected to meet the needs of its varied clientele. Essentially, academic Libraries exist on a university campus for the main purpose of supporting the research, teaching and instruction agenda of the institution. Today’s academic library cannot survive in a competitive information environment without e-learning resources and e-technology. The dilemma facing academic libraries, especially those in developing countries, is the provision of adequate high-quality e-resources and e-technology without their overwhelming strain on the budgets of libraries. The challenge is, how best to take advantage of opportunities to acquire e-resources and to implement e-technology without driving your library, and ultimately, your tertiary institution into bankruptcy.

Northern Caribbean University stands as one of the oldest Liberal Arts University in Jamaica, and continues to serve the intellectual needs of the people of Jamaica, the Caribbean and other regions around the world. The university strives to ensure that the library is equipped to support its mission of providing “quality Christ-centered education, achieved through academic excellence...”

This paper therefore presents the experience of the Hiram S. Walters Resource Centre at Northern Caribbean University and the challenges encountered in its bid to offer quality e-learning resources. It also explores the impact of ITCs on providing e-resources, the impact on library usage by faculty and students, selecting quality, value added e-resources, and the opportunities that are available for increased usage of e-resources. Finally the paper will inform

how the various tools have impacted student learning outcomes and show how the learning environment at Northern Caribbean University has been enhanced while contributing to the provision of adequate and quality tertiary education in Jamaica.

## **Introduction**

If an institution of higher learning is to deliver high quality education to its students, its educational product must be supplemented by diverse resources both print and electronic. Its faculty and support staff should be fully equipped with the necessary tools to positively impact the student's learning outcome. The library therefore is required to be proactive in enabling this type of excellence in teacher performance. The Hiram S. Walters Resource Centre at Northern Caribbean University encourages collaboration with the teaching faculty in identifying quality e-learning resources. The Centre is not necessarily considered to be a digital library; however it possesses a plethora of e-resources that are relevant to all the programmes offered by the university.

### **A Peak through the Hiram S. Walters Resource Centre Window**

The Hiram S. Walters Resource Centre was established and moved to its present location in 1992, and has grown exponentially since then to include in its collection, several electronic databases, e-books, multimedia projectors, DVD players, video recorders, and educational videos.

The library oversees operations on the main campus and also three extension sites, Halfway Tree in Kingston, Salem/Runaway Bay in St. Ann and Montego Bay in St. James Jamaica. Librarians liaise with respective colleges and schools within the university through its liaison librarian programme to provide relevant information and services for learning, teaching and research (Nfila, 2007). In an effort to adhere to its mandate the library has sought to integrate into the university's curricula, e-learning resources. As the information hub of the university, the library is committed to providing access to relevant information as is supported by its mission statement “. . . providing its clientele with current, relevant information, thereby supporting the

larger mission of Northern Caribbean University with is to stimulate academic excellence and spiritual development.”

The university has recently undertaken expansion and restructuring of various colleges and schools which has had significant implications for the library. For every programme and new department that is added to these colleges and schools, the requisite e-learning resources must be in place to augment the programme to ensure that they are academically sound and simultaneously meet accreditation standards. It is also imperative that the quality of delivery and substance of the courses be maintained. The hallmark to be reached is not so much the quantity of e-resources being provided but the quality of these e-resources.

The Hiram S. Walters Resource Centre (Library) comprises the following framework:

- Resources (reference resources, electronic databases, e-journals, knowledge and archival repositories)
- Product and Services (e-library services e.g. WebVoyage (OPAC), current awareness, document delivery, membership, community information – displays, distance learning)
- E-business processes (receipt of invoices for payment of databases, in-house printing, downloading of key resources)

## **Definitions**

E-libraries, e-learning and distance education are all terms that are used within academia. Sometimes the phrases are used interchangeably, however for the purpose of this paper, each term will be examined separately to see what meaning each conveys and its pertinence to a better understanding of the discourse.

## **E-libraries**

There are several other terms used to describe e-libraries, such as, 'virtual library', 'digital library and 'library without walls'. However, Gap (as cited in Johnson, Trabelis and Tin 2004) defines the virtual library as a concept of remote access to the contents and services of libraries and other information resources, combining an on-site collection of current and heavily used materials in both print and electronic form, with an electronic network which provides access to, and delivery from, external worldwide library and commercial information and knowledge sources. This definition is very comprehensive and outlines not only what these libraries are but what they represent and how they operate.

The literature shows that there is no dichotomy between digital libraries and e-learning, in fact, they are linked. The author asserts that, "digital libraries provide technology based information and services to enable learners to access relevant information and services anywhere, anytime, as well as enable individuals for greater innovativeness and to become lifelong learners (Nfila 2007).

## **E-learning**

Jay Cross (2004) has normally been credited with coining the term eLearning in 1998. However, the term seems to have been in use as far back as 1997 when Aldo Morri wrote an article for Telephony Online, *A bright future for distance learning: One Touch/Hughes alliance promotes interactive 'e-learning' service*: "The market for corporate interactive distance learning-now known as "e-learning"-has boomed along with the growth in the Internet and corporate intranets." Since then, it has generally taken four forms of definitions, Internet, Eccentric, Electronic, and Framework.

It is clear from research that "E-learning covers a wide set of applications and processes

such as web-based learning, computer-based learning, virtual classrooms and digital collaboration. It includes the delivery of content via the Internet, intranet/extranet, audio and videotape, satellite broadcast, interactive TV and CD-ROM,” ASTD (American Society for Training & Development). In most universities, e-learning is used to define a specific mode to attend a course or programme of study. It is also defined as “term used to describe all types of technologically-enhanced learning (TEL).

Marc Rosenberg (2001) confines e-learning to the Internet: the use of internet technologies to deliver a broad array of solutions that enhance knowledge and performance. He says it is based upon three fundamental criteria:

- networked
- delivered to the end-user via a computer using standard internet technology
- focuses on the broadest view of learning

Essentially then, e-learning is an essential component of education where technology supports the learning process.

### **Goals and Benefits of E-learning**

E-learning lessons are generally designed to guide students through information or to help students perform in specific tasks. It also offers individualized instruction, which print media, cannot provide, and instructor-led courses allow clumsily and at great cost. Wikipedia, the e-encyclopedia outlines three significant benefits of e-learning:

1. Reduces environmental impact – with the reduction in travel it minimizes the emission of carbon output in the air, because students can learn in a virtual environment. Trees are spared because it reduces paper usage. Virtual notes replace paper notes and online assessments replace paper assessments.

2. Quality education made affordable – The fact that academics of the highest educational standards are able to impart their knowledge, defying geographic borders and boundaries, allowing students to attend courses without being hindered by physical, political and economic boundaries. Recognized vendors are able to make information available internationally to anyone interested, usually at very low cost. This has definitely reduced the cost of higher education (Wikipedia 2009). By just the simple employ of an Internet connection, a computer and a projector would allow an entire classroom at a university in a developing country to benefit from the knowledge of the presenter.
3. Convenience and flexibility - Learners can learn at their own pace and within their own time frame, within the confines of their comfort zone.

### **Why does E-learning Matters**

As the industrial era gave way to the information era, more frequently referred to as, “The Information Superhighway” individuals are compelled to acquire critical thinking skills to identify process improvements, make more informed decisions and operate more efficiently. The need to learn new information (in its broadest sense) is unlikely to decrease.

The literature is replete with examples of universities that are using e-learning and e-learning resources in their delivery. The University of Botswana is just one example, according to Mutula (2002) of universities using ITCs to enable electronic access to their libraries by long distance learners. He particularly highlights the fact that web-based OPACS are being used as gateways to access remote information resources.

## **Information Communication Technologies**

For the academic library to achieve its mandate of providing quality e-learning resources in all its new and varied formats, it must consciously utilize the appropriate tools. ICTs, undoubtedly have a major impact on the quality delivery of information in a library, especially an academic library. It is said that being electronic and electronically driven means, that the library has to be online delivering resources to faculty, staff and students, remotely in a manner conducive to learning, research and publishing. Ogunsola (2005) posits, that “Information Communication Technology is basically an electronic based system of information transmission, reception, processing and retrieval.” This e-system, Ogunsola (2005) says, “has drastically transformed the way we think, the way we live and how we treat the environment in which we live.”

### ***ICTs Impact on providing E-resources***

It is observed from the literature that in order for academic libraries to provide the best quality to a large number of geographically distributed users, they need to apply appropriate information communication technologies to provide support to e-learning and e-research (Nfila 2007). Anything you can do in a library with walls, ICTs can provide access online 24/7 --- e-books, e-audio, online reference, online full-text magazines, newspapers, digital collections, online discussions, blogs, wikis, book reviews, online programs and displays, community services database, online tours, podcasting of story times and other programs, etc.”

Information Communication Technology has everything to do with e-learning and distance education. Without the use of ICTs e-learning would be nonexistent. The significant impact that these products have on student learning, research and publishing cannot be underestimated. ICT through its communication facility enables students and faculty to interact

more. Students are able to be far more creative with the tools that add value to their work. They can communicate with other students internationally thereby soliciting feedback at anytime, from any place as long as there is availability of the requisite technology. The three major areas of impact are; access to information, motivation and communication.

The 'e'-methods used by individuals to access information nowadays has replaced the traditional trek to the library physically. With a computer connected to the Internet one can access information from all over the world. The challenge though is that students need to be information literate to be able to skim and scan texts in order to find those resources that are relevant and reliable.

### ***Distance Education***

The term “distance education” and “distributed education” are sometimes used simultaneously. However, distance education is used particularly in relation to courses or services received away from campus. There are several strategies that universities employ in trying to fulfill the massive demand for higher education. One such strategy is offering courses through distance learning. Buikma & Ward (as cited in Discenza, Howard and Schenk, 2002), say an institution of higher learning also reaps benefits from offering distance education. It increases the enrollment, attracts more qualified students, increases retention and graduation rates, and increases institutional prestige. Matthews (cited by Discenza, Howard & Schenk 2002) explains that, in addition, “offering distance education attracts new teaching staff, (at least those interested in distance learning), allows instructors freedom to be more creative in the classroom, reduces the need to build and maintain university campuses and buildings, offers a new level of communication with students, requires the university to keep abreast of new technology, and signals to the public that the institution is forward thinking and technologically

advanced.”

Farrell (2001) says, “The development of Information and Communication Technology (ICT) and its application to education and distance education, more specifically, has increasingly allowed institutions to deliver learning in a variety of venues.” There has been the view in the past that online programs and courses by their very nature are more effective and flexible for learners. Research is now proving that there is need for institutions of higher learning to proactively pursue issues such as maintaining quality within this distance delivery environment (Biggs, 2001). As a result of the tremendous increase in the popularity of distance education, many are concerned about the erosion of academic quality (Farrell 2001). It is believed that in the typical classroom setting quality can be assured by managing the qualifications of the teacher. The application of learning technologies has certainly served to decrease this assurance.

Kofi Annan (as cited by Ogunsola 2005), puts it this way, “the Internet hold the greatest promise humanity has known – distance learning and universal access to quality education... It offers the best chance yet for developing countries to take their rightful place in the global economy... And so our mission must be to ensure access as widely as possible. If we do not, the gulf between the haves and the have-nots will be the gulf between the technology-rich and the technology-poor”.

### **NCUs’ Distance Education Programme**

Northern Caribbean University has in its offering some online courses , and will this Fall semester add several others. In ensuring that quality is maintained in the delivery of the courses, Northern Caribbean University has sought to use its own software and e-learning resources.

The individuals responsible for developing the software were four former students of the

University. They were members of the Microsoft Imagine Cup Competition 2007. Representing the Western Hemisphere in the competition with their software entitled Computer Aided Distance Instruction (CADI) programme, these students were third place runners up to Thailand and South Korea, respectively. Highly competent and knowledgeable about distance education they maintain the programme and train the faculty and staff, who will be utilizing the technology.

According to Niccardo Rhoden, Director of University Information Systems Services (UNISS), “the types of technology available to NCU which may be used in the distance education programme are divided into two groups, synchronous and asynchronous.” He further elaborate that, “synchronous technology is a mode of online delivery where all participants are present at the same time. The process may be facilitated through the use of video conferencing devices at select locations.” He says, though, that this kind of setup requires proper timetable management and organization. On the other hand the asynchronous mode of online delivery is where participants access course material on their own schedule; students are not required to be together at the same time which results in more flexibility for working students. The University is aware of the vast number of persons waiting to access these courses and is doing everything possible to ensure no one is left behind.

The University already has the technology in place to offer both methods of distance education. For the synchronous method there is video conferencing equipment for all campuses and the Computer Aided Distance Instruction (CADI) software which will be used for online discussion and collaboration. This software has features such as, white boards, presentation sharing, co-browsing and language translation.

Rhoden further asserts that, “NCU is poised to benefit from distance education in a significant way.” He outlines these benefits as:

- Increasing services and offerings to existing and prospective students.
- High potential for increasing enrollment.
- Reducing operating cost involved with offering certain courses.
- High potential for increasing cash flow.
- Increasing access to learning.
- Promoting lifelong learning.
- Better marketability.
- Capitalizing on new learning/teaching methods
- Maintaining a competitive advantage.

Although the prospects are great for NCU in offering courses online, there are attendant challenges. Rhoden says it is very costly and the technology can be complex for some individuals. It also requires careful planning both for the instructors and students involved.

### **Impact on Library Usage**

As for student response to the provision of and use of e-resources, the library has seen a significant increase in the usage of the online databases which contain a vast array of scholarly journal articles. During the month of November 2008 the Hiram S. Walters Resource Centre administered a library survey to administrators, faculty staff and students, to ascertain the level of awareness and use of the resources, mainly those that are electronically accessible. Of the 700 survey distributed 572 was returned and deemed usable. The survey also look at comparative responses from faculty and staff as well as undergraduate and postgraduate students as it relates to the level of usage, adequacy of resources and services.

Students, faculty and staff visit the audiovisual department where they make use of the audiovisual equipment for presentations. The teaching faculty integrates electronic aides in their class delivery. The user education program or orientation to library resources has had a major impact on the increase in use. Our librarians spend a considerable amount of time out of their regular schedule in the preparation of PowerPoint presentations for these programs.

Training is also given at this time in the use of the Online Public Access Catalogues (OPAC), which guides the user in finding the holdings of the library.

### **Criteria for Selection**

As a library it is important to provide access to journals that are peer-reviewed because such materials deliver substantive scholarly information that is not easily accessible on Google or other popular search engines. The library should be that place where authentic information is readily available. It is also imperative that the library keeps abreast of the trends and issues relating to the provision of e-learning resources.

The selection of all e-resources is done in tandem with the collection development policy of the library. This process essentially guides individuals, such as the acquisition librarian, library director and relevant library representatives from the various schools and colleges of the university, in the what, how and why a particular material should be added to the collection. Even though it would be ideal to acquire as many e-resources, as is thought to be needed by students and the teachers, certain basic criteria must be met. These include:

- Intellectual content of the electronic resource
- Will provide sufficient added value over other formats
- The search interface must be powerful, flexible, user-friendly and well-indexed with numerous points of access

- Cost of the resource must be within the budget allocated for e-resources
- Ideally, whenever possible, access to the electronic resource must meet these goals:
  - ✓ Support remote users of the library
  - ✓ Deliver reliable remote access
  - ✓ Be available 24/7
  - ✓ Utilize a unified and intuitive interface
  - ✓ Be available for an unlimited number of simultaneous users

### **Challenges in Providing Quality E-resources and Distance Education**

The challenges faced by universities the world over are the same as experienced by Northern Caribbean University. Banwell (2004) speaks dismally about the unpredictability of the library budget and how this poses a major challenge in providing quality e-resources.

When providing e-learning and e-learning resources of a high standard several things must be considered (Mutula 2002). He mentioned such things as the need for additional classrooms, smart laboratories, and the issue of bandwidth. In addition to the physical infrastructure, students will have to be motivated and the attitude of staff changed. Niccardo Rhoden of Northern Caribbean University readily agrees with Mutula's position.

Karim and Dih (2000) attest to the fact that the challenges faced by learners pursuing knowledge within the new e-learning environment will not be on how to access some good or enough information, but more so how to effectively use and manage resources. They further reiterate that "to facilitate the process of transforming data and information into mastery of a shared body knowledge is the real challenge to learners and a continuous one".

Funding is listed as one of the major challenge in providing quality e-learning resources. Due to the increased functionality and remote access in e-resources, universities are experiencing

myriad challenges, especially in the reference area. E-resources are very popular. Geffert says, managing the budget in the digital age has brought on new administrative challenges, “it gets very tedious”. He further laments that often, money has to be taken out of an institution’s operating fund for electronic serials whereas previously that spending would be taken from the capital fund.

Basic challenges that are experienced within the academic library domain are:

1. Embargo from publishers of academic e-journals
2. Prohibitive subscription cost – with limited foreign exchange
3. Duplication in services rendered
4. Need for more computers and software
5. Training facilities/limited technical staff

The literature seems to suggest that only as universities participate in offering distance education will they survive the harsh economic realities that the world over is experiencing. Distance education is changing the very landscape of how thousands, if not millions are now accessing education. The global market has changed and continues to change and so educational institutions are recognizing that there needs to be substantive reform to their education delivery strategies.

The dilemma (Farrell, 2001) says, in all of this though, this great rush to engage in distance education, is how to maintain certain standards and ensure quality. The forces driving the growth and demand for what is called “alternative education market includes:

1. The global economy, with an increasing demand for standardized products, services and technical infrastructure.
2. The emergence of a post-industrial information age and the explosive growth and

distributed nature of new knowledge.

3. The demands for greater access to tertiary education, precipitated by rapid changes in the economy. The need to upgrade skill for the market, and employment agencies' demand for graduates who are multifaceted and ready for the workplace.
4. The ever growing reticence on the part of most governments to fund the increasing demand for higher education.

### **Opportunities for Increased Usage and Positive Student Learning Outcomes**

With e-learning being enabled and driven by the Internet and World Wide Web, there is an increased opportunity for e-resources to be utilized. Neuman wrote that, "There are few doubts about the potential of the digital library for providing unprecedented access to information and ideas. Web-based OPAC are being used as gateways to access remote information resources. Course materials, evaluations and assessment are being affected through the Web. E-learning platforms such as WebCT are being used to tap into the potential of campus intranets, online databases and other learning resources.

Additionally there are federated search solutions that are being marketed and utilized by libraries worldwide. The MetaLib search tool from Ex Libris is one such example. A case study from Vienna University Library in Austria, where the student population is 72, 000, reveals that this solution is able to provide access using a single entry point to over a 1000 e-resource databases. Similarly, the Hiram S. Walters Resource at Northern Caribbean University uses the ExLibris Voyager Integrated System for all it's processing of resources including e-resources and will in 2010 install MetaLib and SFX. MetaLib enables users to quickly and easily find the resource they need, whether from an e-journal or a database. Library usage statistics from Vienna University illustrate that e-resources available through MetaLib are accessed 50 to 110

percent more frequently.

In as much as the technology enables and empowers the learner, there is the human touch and application that is necessary to guarantee certain positive outcomes. The Hiram S. Walters Resource Centre has had feedback and positive testimonials from faculty and students alike on the impact of the ongoing library orientation and information literacy exercises. Students continue to ask for and make use of the online databases of the library while faculty cite the improved writing and comprehension skill sets in their students who attend library and information literacy offerings from the Centre. As they become more confident and adept at using the library's e-resources, students are able to infuse their course work and term papers with a depth and quality that illustrates that they are reading more widely and understanding the information gleaned. Some of the tools employed by the librarians at the Centre to enhance student learning outcomes include; introduction to the various citation formats, presenting alternatives to print information, so as educational DVDs, CDs, audiofiles and cassettes and maintaining a reference desk that provides a human face to the processes of the library. These strategies combine to give the learner a platform to ask questions, while giving the librarians a chance to interact with their clientele.

### **Maintaining Quality Standards**

Universities like many other institutions are currently grappling with the challenges associated with the use of technology in teaching and learning and providing e-resources. However, the real dilemma or issue facing universities is how to maintain quality. According to Oliver (2001), "Providing the best possible forms of online learning is a critical component of the quality assurance process."

It is very important to establish and maintain standards for e-learning technology.

Haugen & Behling (2006) commenting on the importance of maintaining quality standards in the delivery of e-learning says:

Education is experiencing a technological revolution as institutions seek new ways to deliver educational opportunities. To meet these challenges, colleges and universities are turning to the Internet and World Wide Web. By establishing and maintaining standards institutions can more effectively reengineer their learning programme to deliver high quality online education. (p.161-173)

### **Conclusion – (The Way Forward)**

As consideration is given to the reality of e-resources and the advantages they offer to the learner both distance and otherwise, it can be obviously seen that technology is here to stay and that access will be that more increased as the ICTs morph and innovate. All universities, both in the developed and developing world have incorporated e-learning characteristics into the curriculum and in all instances the academic library has led the way in the provision of these crucial resources. As the collaboration continues in the academic campus between faculty, libraries, students and administrators, all these stakeholders recognize, (though some more than others), the myriad challenges attending the provision and delivery of the e-resource. Budget constraints, vendor quality and reliability, availability of supporting infrastructure, quality assurance standards and changing the perceptions of both faculty and students toward e-delivery are just a few of the challenges which reside in the e-environment.

Distance education at this juncture in the 21<sup>st</sup> century is by far not a new concept any longer, but its 'reach' and utilization has increased to a measure that it has become standard and common-place even in the poorest of countries. Maintaining the often precarious balance between quality and ensuring adequate quantity remains a bugbear for Northern Caribbean

University as it is for the average university around the world. As the University seeks to strengthen its distance education component, the library also is positioning itself to be the access point of choice, delivering on-time, all the time information that is credible and reliable.

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