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Recurring Issues Encountered by Distance Educators in Developing and Emerging Nations

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Abstract

This article explores a number of challenges faced by e-learning or distance educators in developing and emerging countries, provides a context for many of the challenges, and outlines some measures devised to overcome them. These educators must determine a sound rationale for adopting online learning, recognize that technology is only part of the educational transformation process, address the lack of infrastructure and the cost of internet bandwidth and equipment, counter the cultural imperialism of courseware from Western nations, deal with limited educational resources, place a greater emphasis on quality assurance systems and change negative perceptions of distance education, respond to the needs and demands of both students and faculty, access or develop up-to-date educational resources, and consider the implementation of mobile learning. The extent to which issues covered in this article are addressed will depend on the extent to which issues covered in this article are addressed as they bear on the quality of the learning experience provided to students.

Keywords: distance education, online learning, e-learning, technology, developing countries, emerging countries

Introduction

Education can be the difference between a life of grinding poverty and the potential for a full and secure one; between a child dying from preventable disease, and families raised in healthy environments; between orphans growing up in isolation and the community having the means to protect them; between countries ripped apart by poverty and conflict, and access to secure and sustainable development. (Mandela & Machel, 2002, p. A15)

Leaders in developing and emerging nations promote education as a means to improve their peoples and countries. “There are many reasons for the growth of distance education but none is as compelling as the hunger for learning felt by those who have been denied it for generations” (Dhamraj, 2001, p.61).

A number of recurring issues seem to emerge when developing countries attempt to implement a technological form of distance education or its many variations – e-learning, distributed learning, or online learning. This article provides an overview of key issues faced
by distance education in developing countries, describes some of their successful practices, and outlines salutary measures that these educators could consider or amplify, improving Note that many of these issues are not new (Mulder & Elshoff, 2001; L. B. Dunn, 2001; Lagattu & Peraire, 1988). They tend to be entwined with various significant, developmental, or paradigm shifts in the educational system. Also note that developing and emerging nations are not homogeneous. As each country displays different attributes pertaining to population, culture, language, social structure, politics, economics, development, resources, the use of technology, and so forth, the issues described below do not apply equally to every developing or emerging nation.

The Issues

Developing a sound rationale and vision for the distance education initiative.

Government and institutional personnel in developing countries often decide to employ learning of online learning without fully realizing what is means for their students and their institutions. If students are still reading by candles and kerosene lamps, expecting them to learn online may not be realistic. Online learning is attractive to institutions that want to be perceived as being progressive; however, establishing online programs may not be the wisest use of scarce resources. It may be better to use the limited funds to encourage greater student attendance, ensure students are well fed, and/or hire more tutors. Effectiveness, where they invest students face-to-face or via a videoconferencing system or prepare online course material, are still the key ingredients in any educational system. According to Wagner et al. (2002), "...the last decade provides strong evidence that misguided policies and funding for Internet communication technology (ICT) in education may fail to have the desired educational outcomes...while costing more than other educational interventions" (p. 12). Technology may not be the appropriate or only solution to an educational problem. (Weis & Weis, 2007).

Some institutions and government documents are attracted to online learning because they think it will save them a significant amount of money and human resources. They frequently imply that distance education and technology are panaceas for all their educational system. Cost savings continue if a large number of students are involved (Hine, Carra, & Bidar, 2002) and if fewer education facilities are used, but instructors, tutors, course production teams, technical support personnel, and other human resources are still required, and they make up a substantial portion of the educational budget. According to unctt, president of Thomas Edison College, "One of the biggest myths about online education is that it's cheap. To produce high-quality distance education courses, it's very expensive" (Silverstein, 2007). Distance learning should be about access, equity, and the distribution of quality products to a wide audience; cost savings are just one of the potential benefits.

There are numerous, legitimate reasons why governments and institutions should introduce technologies into distance education, such as "greater information access; greater communication via electronic facilities; the introduction of asynchronous and synchronous learning; increased cooperation and collaboration; cost effectiveness," etc. by reducing different student populations and geographic numbers, and pedagogical improvement through simulations, virtual experiences, and graphic representations (Silverstein, 2007). While the opportunity to offer those who are working full-time or have household commitments "a second chance to improve their skills and further their education regardless of age, gender, ethnicity, or social background" (Ihe, 2007). Distance education may also be used to bridge the digital divide, to reduce the "brain drain" or individuals who

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leave to study abroad, to broaden access to individuals who have had limited opportunity, and to spur social and economic development. Many distance education initiatives have been established to assist those who are poor and those who live in rural areas. However, despite the growth in Information and Communication Technologies, inequalities between rich and poor, urban and rural, and male and female continue to exist (ILO, 2008).

Educators in developing countries have employed distance education successfully to provide: accreditation to teaching and health professionals, to improve agricultural production; and to increase literacy. More recently, distance education has been used to facilitate an interest in user participation and to introduce a governance. For many students, distance education provides a path to a better life, the more educated they are, the better jobs they will obtain, and the better they will be able to meet the needs of their families.

Recognizing that technology is only one component of the educational transformation, while shiny new technology appeals to politicians and educators alike, it should not be adopted unthinkingly or without careful planning. Wright (2002) identifies necessary conditions for the effective use of technology in distance education settings:

- Decision-makers must identify the problem, the technologies will address or the benefits that the technology will bring to education and administrative processes.
- Educational and governmental bodies must be committed to the goals toward which the technology will be applied; ensure that issues regarding accessibility and equity are addressed, develop measurable objectives and realistic timelines, assign specific responsibilities to individuals and groups who will facilitate the change process, and provide the necessary resources.
- Key individuals, in collaboration with other stakeholders, must develop a plan to guide the implementation.
- The selected technology must be effective for its intended use and meet the needs of potential users.
- The curriculum should be adjusted to make the best use of existing and possible future technologies and development; the technology should promote meaningful interaction between the learners and the learning material, instructors, tutors, other learners, and the community.
- Instructors must receive hands-on training on the use of the technology and its potential benefits to learning and instruction. They must learn to provide effective student support, and to conduct simple troubleshooting.
- Incentives should be provided to encourage instructors to get involved with this new method of delivery; the time and effort required to develop and support online courses must be recognized.
- Copyright policies should be adjusted, if necessary, to enable the conversion of existing materials into electronic media.
- The technology must be maintained, supported, and secured.
- Organizational policies and management structures must be adjusted to cope with flexible delivery methods, provide for learning assessment, support independent study students, and address issues such as security, plagiarism, ethical online behavior, and assist students with no access to computer experience with the technology.
- Consideration must be given to how the technology and software will be updated in the future.
- Procedures for continuous assessment should be established.
- Educational administrators must be willing to review technological implementation plans regularly and revise them as necessary.
Planning is an important art as there will be unforeseen developments and challenges. Nevertheless, the pivotal nature of planning and management does not diminish the need for deliberate strategies to implement effective technology-based teaching (Malen, 2000, p. 27-28). The extent to which an institution adjusts its premises and processes greatly affects the success of technological implementations. In one institution in Southeast Asia, calculators were installed in two years and staff received training; by then, the equipment was outdated, new software was required, and those who selected the equipment had moved on to other positions. As computer performance improves, every 10 months (Strong, 2007) and new software is developed, it is necessary to take advantage of this increased performance; equipment specifications and implementation plans must be revised on a regular basis.

When distance education is being implemented, especially when it has a technological component, there's a need for leaders who are flexible, open to new ideas, and willing to make decisions. In many developing countries, the decision-making process is flawed because of the lack of involvement of decision-makers who have limited or no experience with technology, the need education, and change management. Those who will be making significant decisions about technology should use it on a daily basis. They should have some experience with specific equipment or programs they are selecting. Be aware of the potential impact of the technology upon learning, instruction, and administrative systems; and keep abreast of emerging trends.

Institutions must put in place a clear, detailed plan for implementing technology in distance education. They must involve stakeholders such as the department or ministry of telecommunications, if they imply that teachers will lose their jobs when courses are placed online. The plan must be updated continually to accommodate new information and communication technologies, the dynamic and flexible leaders must continuously invest in training for all constituents. Success is highly dependent on the ability of the institution to fully utilize emerging technology successfully in a distance education setting.

Despite the emphasis on the use of educational technology in this article, it must be recognized that developing countries continue to have success with paper-based and broadcast media forms of distance education as these are reliable and sustainable (Library & Information, 2006).

Addressing the lack of infrastructure and the cost of bandwidth

The lack of a sustainable and accessible electrical and telecommunications infrastructure inhibits not only economic growth (Hafstein, 2005, Fay & Morris, 2007), but also growth in the educational sector. In June 2007, Kenya's education minister, Professor George Saitoti, stated that approximately 80% of the primary schools and 35% of secondary schools were not connected to the power grid (Njoro, 2007). Introducing e-learning to those schools will be a challenge. Alternative power sources such as solar and wind must be considered as well as equipment that uses minimal power or includes a built-in generating capacity. In Namibia, solar panels and wind turbines are being used to generate electricity to support internet service, computer and servers in rural areas. This type of infrastructure has, in particular, begun to be introduced in some schools to provide computers, training, and support. More than 200 schools with a significantly improved internet infrastructure would drastically enhance the adoption of online learning.
In eastern and southern Africa, the cost of internet access can be 20 (or 40) times the cost in North America, as 80 per cent of the internet traffic is routed through such fora (World Bank, 2006; World Bank, 2007a). Satellites over Africa and the South Pacific provide slower transatlantic rates than optical cable primarily due to signal delays and narrow bandwidths. In fact, many of the satellites supplying signals to Africa and the South Pacific were launched more than 20 years ago and are aging. A terrestrial infrastructure backbone, recently approved by the World Bank to serve eastern Africa, would substantially reduce costs (World Bank, 2007a). In addition, O3b Networks, Google, AGW Global, and the HSBC Bank plan to launch a high-speed, low-cost network of 16 satellites which will enable the growth of learning content and e-learning, thereby encouraging social and economic growth in the developing world (IBBC News, 2009). Once a robust backbone is established, it would be possible to develop a network of telecommunication or internet hubs, and implement an Africa-wide system of telecommunication or internet hubs. In 2007, about 80 per cent of all mail and telephone messages between African countries are routed through Britain, or the United States (Nkor, 2007). It is expensive to communicate and use services such as Web 2.0 tools (e.g., wikis, podcasts, blogs, user-generated content) that require large bandwidths. A very basic service line in Rwanda costs US$96 per month, and wireless internet service is US$263 per month. The average household income in Rwanda is AU$222 per month (2007). The high costs of internet access primarily explains why only 1.6 per cent of internet users in Africa, and 4 per cent of the Latin American population, had access to the internet in 2006 (Mahar, 2007). Even if the infrastructure is somehow present, the existing cost has ensured that the internet remains out of reach for the bottom of the pyramid. Politicians, enacting communication monopolies and policies that limit competition, have sustained the status quo of this communication even in the areas which are advancing in relative terms (Nkor, 2007, p. 37). The cost of bandwidth is relatively expensive for most people living in developing countries, but at least they potentially have access to it. This is definitely progress, because in 1996 only five countries in Africa were connected to the internet and now all are connected (Sanchez, 2008).

Once the telecommunications backbone is established, wireless systems could be added to deliver services locally and in rural areas in which many marginalized and under-served people live. The developing countries have the advantage of learning from the experiences of other countries and are not saddled with the various statuses of development. For example, instead of implementing hardware-like terrestrial systems, developing countries can employ wireless technology. An accessible and reasonably priced electrical and telecommunications infrastructure is essential if e-learning is to spread beyond large urban areas.

According to Gross (2006), "The challenge in Africa from a governmental and regulatory perspective is what can and should be done to encourage investment, both domestic and foreign, in the private sector" in the telecommunications industry. Perhaps governments should realize that no one company has a monopoly for this service and that a healthy competition among wireless providers is nurtured. Governments need to manage regulatory barriers that prevent the establishment of a healthy competitive environment and encourage investment (Thompson, 2008). This is a more socialist view and ensures that all citizens have access to the internet at a price they can afford. Countries such as Tanzania have eliminated taxes on computer equipment and reduced the cumbersome payable by telecommunication companies. Liberia intends to follow Tanzania's policies by "acquiring custom duties on imported ICT in used equipment so as to enable Liberians to have more access to them" (Bullying Act Now, Update, 2008). By connecting learning centres to the internet, Sri Lankan officials can introduce the web to local communities. Once the internet connection to learning centres has been made, private manufacturers can provide learning connection from the learning centres into local communities. These connections may
establish internet cafes which are "booming in developing countries such as Peru where "more than 83 percent of Internet users connect from collective places," such as cyber cafes (Fernández-Maldonado, 2004). The money generated by the private contractors can be used to partially cover the cost of delivering the internet to the learning centers. By providing an internet connection to a learning center, the virtual link will provide the opportunity to link to the connection, the contractors are able to provide a service that might have been unaffordable if they had to bear the entire cost of bringing the Internet to the community. This type of government-private partnership is beneficial to all.

Bandwidth is not the only issue in the development of network infrastructure: ease of installation, susceptibility to interference, coverage, data security, and costs are also relevant. Muhoozi University in Kenya considered using copper wire, optical fiber, wireless networks, and/or satellite signals to provide the connectivity it required. The National Ocean University of Nigeria decided to use Nigeria's Communications Satellite (NIGCOMSAT) to link its main campus with its videoconference facilities located in a study center across the country. Each institution had to carefully assess its infrastructure and learning needs, then determine a solution that took into account environmental constraints.

The infrastructure challenges in Africa are similar but not identical to those in Latin America and the Caribbean, where the infrastructure was already limited in quality, reliability, and coverage. However, governments must act to regulate the Internet infrastructure, increase Internet spending, and spend funds wisely on initiatives that will foster access. Massy, 2002). Hypothesis of the type of Internet infrastructure that is implemented almost be designed to accommodate the year of the distance education program (Massy, 2002).

Obtaining equipment when funds are limited

When compared to the average wage, the cost of equipment can be expensive in many developing countries. Consider that 850 million of India's 1.1 billion people, still earn two dollars a day in lower (World Bank, 2000). But the Internet has raised the status of an economic powerhouse. Personal ownership of computers has begun for many telecenters, and even for small schools. The problem is that even a simple computer can be very expensive. Even if a school has the funds, the computers may not be compatible or will be outdated. While the Intel-based PC (http://www.intel.com), once the standard, is now obsolete, the IBM-based PC (http://www.ibm.com) is still used. The lack of affordable, adaptable options makes the task more difficult. The need for affordable, adaptable options is urgent, especially in countries where low-cost equipment must be available. The low-cost personal computer, a Canadian company, Inklade Canada, has produced a US$300 Linux-based laptop, the developing world, and others have caught on. The IBM Thinkpadhaven produced a US$499 computer for businesses. However, the price of a US$198 computer is still beyond reach for many people, even in China (McDaid, 2002). This sounds like a good deal until you realize that the average wage in rural China in 2006 was US$260, although it is increasing at a rate of 10% each year. Currently, there are over fifty initiatives that involve the use of low-cost
computers to serve students in developing countries
(http://www.technovation.org/Publication/107.html). Despite recent
downsizing of the
management of the OLPC initiative, OLPC is credited with shining a light on the technology
issue of those students and illiteracy others to develop low-cost computers.
Rather than purchase new computers, some countries such as Kenya, Namibia, Trinidad and
Tobago, and Uganda fused the option of obtaining refurbished computers from non-
governmental agencies. Computers for Schools Kenya (http://www.cfsken.org) has provided
refurbished, 600,000 students in marginalized communities (Okono, 2007). This
organization receives donated computers from Canada, Great Britain, the Netherlands,
France, and the United States, then repairs them, restores data lost by previous owners, loads
appropriate software, and tests the equipment. This work is primarily completed by student interns
who volunteer to acquire ICT skills to train others to obtain gainful employment. However, a number
of challenges remain related to refurbishing computers, including dealing with the compatibility
problems associated with the wide variety of computers received, the potentially high maintenance
costs, and restrictions on software because old machines may not be able to run new programs (Ministry of

Educational institutions and governments must assess the true cost of the technology, not
just its initial purchase cost, which may be less than 20% of the actual cost of ownership
(Wray, 2004). Maintenance, software, and training costs must also be considered.
Whatever the cost of information and communication technologies ICTs, they are
impeding against food and health services for the limited funds of developing and emerging
countries.

Countering cultural imperialism and addressing cultural diversity
Western sources bring Western values (Emirzade, 2002). Many in developing countries,
particularly Africans, feel that they are losing their cultures as a result of Westernization when
they, too, have followed the path to westernization developed locally.

There are at least 6,912 living languages in the world, of which about 3,474 have more than
one million speakers (Gordon, 2005). In Africa, where several countries have more than 20
languages or dialects, it may not be “feasible to develop print materials and coursework in a
variety of languages.” If the courseware is produced in one language, which should it be?
Oftentimes, the language selected is not from colonial times but complaints of cultural
imperialism abound. Further, a variety of cultural groups have a total tradition that is best
supported by lectures and group discussions. Other cultural groups are uncomfortable with
the concept of critical thinking caused by many distance educators, as they use it to attack
the tradition of their elders. For example, in an article describing the development of an
of ‘critical thinking’ so highly regarded of Western academics” is anathema to the traditional
Buddhist educational system, and this actively works against the idea of student-centered
learning that values curiosity, rationality, and creative approaches to learning” [p. 3]. A
telemedicine project in Thailand failed not only because of the high satellite communication
costs, but also because medical personnel in urban areas were reluctant to consult with those
in rural areas. The technology was unable to bridge social barriers. The
implementation of technology does not mean that cultures and societal barriers disappear,
sometimes the silences are magnified. Overcoming cultural and religious perceptions
related to technology and its use can be more difficult than actually implementing
technology.

in an effort to maintain an indigenous culture and to reach those who live in “rural areas of on
the street,” presenting courses in local languages makes sense. However, if equipment
manuscripts for vocational courses are available only in a foreign language or business is conducted in a language such as Mandarin and English. It might be beneficial to expose students to these languages, if the need to have resources in a local language environment groups of ten or more educators could establish a language-specific version of the Wikiiversity (http://www.wikiversity.org) that was founded by the Wikimedia Foundation to create and host free learning materials and activities. They also need to consider using Jurl (http://jurl.org), which is easy to set up and does not require students to have an e-mail account in order to access the information on a wiki established by instructors.

**Dealing with limited resources**

Educators in developing countries are aware that external funding from international development agencies and corporations may not always be available; projects may not be sustained once the external funding has ended. Thus, educators need to collaborate across borders, especially regarding the development and delivery of courses. (Nalukala, 2007) and should consider the use of open-source course management and delivery software (Wright, 2006) such as Moodle (http://moodle.org) and Sakai (http://sakaiproject.org). Open source software offers the potential to reduce the cost of the software while providing an environment greater control over its destiny (Soppeta, 2006).

Educators can easily minimize the duplication of effort required to develop materials. The Commonwealth of Learning (COL), for example, works with the eight countries of the Southern African Development Community (SADC, http://www.sadc.int) to develop training modules and materials to enable teachers to enhance their professional skills through distance and open learning. Teams of writers from Botswana, Namibia, South Africa, Zambia, and Zimbabwe developed the modules. Throughout the writing process, content issues and the review of the resources remain the responsibility of all participating countries. Once the core modules were developed, each country was able to adapt them to meet the needs of its people. The COL has also initiated:

* An Online Distance Learning (ODL) and Tools of Learning: A Collaborative Initiative for Distance Learning and Open Learning and Distance Education. (Buzech, 2007)

* The Virtual University for Small States of the Commonwealth (VUSSC, http://www. vf.unima.ac.za), a collaborative initiative to create and share courseware (Buzech, 2007), and

* The WikiEducator (http://wiki.educator.org) - a collaborative initiative to develop and make available large scale open educational resources by 2015.

By collaborating, the cost of a particular initiative to any one institution, agency, or country is minimized and the quality of the finished product can be higher than if only one institution or country undertook the development of the learning materials.

Developing and emerging nations could establish national or regional learning repositories that contain the learning objects of digified learning activities that meet their specific needs as well as complement the contents of existing open source learning repositories such as the Multimedia Educational Resources for Learning and Online Teaching (MERLOT, http://www.merlot.org). If educators develop their own learning objects or online activities, they should ensure these are more than just electronic page-turners. According to Wright (2007), the online learning activities should:

* be engaging and motivate the learners by including online games, role-plays, and simulations;

* demand that learners interact with the online material, with their peers, and their community by using the various socialization tools that are available on the web;

* encourage critical thinking, creativity, and problem solving;

* provide opportunities for online practice and a new edge transfer;

* offer timely, constructive, relevant, and frequent feedback; and

* provide links to resources beyond the content and the learners' communities.
Regional learning repositories are to be successful, educators must be willing to contribute some of their own funds and energy. They cannot rely solely on external funding from organizations such as the William and Mary Pewett Foundation (http://www.pewett.org/) that support open educational resources initiatives designed to equalize access to knowledge and educational opportunities. The Teacher Education in Sub-Saharan Africa (TESSA), http://www.teassafrica.net/) in Namibia is an example of a successful collaborative effort that develops open educational resources and provides guidance to teachers. This initiative involves 8 international organizations and educational institutions, the African Virtual Open Initiative and Resources (AVOIR), http://www.avoir.org.za/, comprising 9 African universities, focuses on developing free software that is user-friendly to African users.

Collaborating on course delivery and student support may be more difficult than collaborating on course development. However, the Association of African Distance Learning Centres (AADLC), http://www.aadlc.org/, part of the Global Development Learning Network (GDLN), http://www.gdln.org/, has enabled individuals and teams to share knowledge and learn how best to offer distance education. One of its priorities is the provision of effective, cost-effective support to distance learners. The partnership of 15 AADLC learning centres connects governmental, non-governmental and development agencies, and private sector individuals across countries via interactive video-conferencing and the Internet.

Distance educators in developing countries also need to explore the establishment of a cadre of tutors who could serve more than one institution. Companies in India and in many developing countries provide 24/7 on the tutoring and student support services. If there is a lack of specific content expertise, the number of students does not justify hiring full-time faculty at any institution, then institutions could consider collaborating on the provision of tutoring services. Collaborative efforts can address the challenge of limited resources and can be beneficial to all involved.

Working across borders can address the lack of educational resources and the need to introduce faculty to new instructional methods. Recently, the United Nations University (UNU) launched its whole program of the development of in over 150 developing countries. In addition, the U.S. Agency for International Development stated that it plans to establish a virtual network that would enable institutions in Africa to collaborate with their American counterparts (Lindley, 2008). Thus, the institutions will be able to partner on projects in education, economic development, food security, and health. According to Silas Luke Bamba, rector of the National University of Rwanda, the partnership will build Africa’s universities by “building the capacities of their graduate programs, introducing interactive teaching methods, providing training and mentorship opportunities for senior faculty members, and bringing more women into academic ranks” (Lindley, 2009).

Placing greater emphasis on quality assurance
Frequently, face-to-face interaction is associated with quality teaching even if the instruction is equally well developed in both suitable settings. Conversely, distance education has been viewed as second-rate education that focuses on reproduction rather than on problem-solving and is often a costly enterprise, especially when information and communication technologies are introduced. Pintouton (2007) expresses the view of distance education in the developing world: "Open and distance learning is regarded by students and members of the education system, as a second-rate system, used to offer a shadow of education while withholding its substance." It is an inefficient but cheap way of containing educational demand without meeting it (p. 207). This view of distance education is widespread not only in Southeast Asia and Africa, but also to a lesser degree in developed countries as "...as this was a common attitude in the West until about twenty years ago (and some may say is still prevalent in subject-specific areas)" (Rennie & Mason, 2007, p. 8). According to
Professor Dharapol, vice chancellor of Thailand Open University, said, "The mode of delivery, whether face-to-face or virtual, actually has little to do with the quality of education. What's more important are things like, is there a careful measurement of learning outcomes and is the university benchmarking its developments ... [5] whether the curriculum is aligned with the environment." (Ku, 2007). High-quality educational materials need to be relevant by people who have a positive attitude towards change and care about what they do and how they do it (Wright, 2007;)

Those who are likely to make key decisions about technology and distance education and those who are highly regarded as "people of influence" are generally in their lifetimes. Hence, the use of technology could be a fit solution for technology and quality assurance systems that continually measure the quality of instructional technology in the distance education system (Ku, 2007). Similarly, technology is not the issue, but rather how it is used and the culture people have about it. Education should not only be exposed to the literature about effective distance education programs, but must also see them in operation and speak to students whose lives have changed because they were able to access distance education courses. Increased awareness should improve attitudes towards the implementation of technologically-enhanced distance education.

One of the reasons why distance education is not respected in some countries is the lack of quality assurance systems that continually measure the quality of instructional technology in the distance education system. In some cases, staff who migrate from traditional systems to open and distance learning (ODL) institutions, often with protectionist policies that may not help the ODL institutions to achieve their overall goals, especially goals related to accessibility, flexibility, and equity. Staff in new ODL institutions in emerging nations must be introduced to attributes of ODL that differentiate it from traditional teaching.

Quality assurance systems should have a higher priority when resources are limited; they often receive little or no funding. Distance educators do not need to develop their own standards from scratch; they can obtain existing standards and modify them for their environment. In any event, they should utilize the standards they are using and ask external experts to review their progress in achieving these standards.

Recognizing those who are likely to succeed and addressing student needs
Educational opportunities should be available to everyone. People who live on the street and in rural areas, as well as those in affluent communities, have a right to an education. However, when new programs and existing established programs and funding agencies usually focus on completion of graduation rates in determining whether funding should be continued and programs expanded. Since distance education programs may suffer from low completion rates (Purely, 2007), it might be advantageous for project leaders to consider who will likely be successful with distance education courses and actually offer programs that will meet the needs of these types of students. The results should yield high.
Acquamation rates thus attracting further funding that can be used to develop programs for higher-risk students.

Successful online and e-learning students are likely to be highly-motivated, well-organized, self-disciplined, good time managers, supported by family and colleagues, able to tolerate ambiguity, flexible, goal-oriented, and interested in using technology (Wright, 2006a). Post-secondary level students are likely to be more successful with distance education than primary students (Perkins, 2007). This does not mean that only these types of students will succeed, but rather that they are more likely to complete a certificate, diploma or degree program.

Adult learners are particularly motivated if at the end of their studies they will obtain an accreditation, a salary increase, and or promotion, which will enable them to leave poverty behind and improve the lives of their families. Distance education seems to be ideally suited for those who have full-time jobs and family responsibilities, are geographically dispersed, or are far away from home—for example, military personnel, business staff, missionaries, international volunteers, and refugees. These individuals recognize the need for access to education that is not hindered by time and place. Distance education is also of interest to those who seek lifelong learning outside of formal education. If developing countries want to maximize their investment in distance education, they should take into account those students who are likely to make the best use of this form of educational delivery system and provide effective student support.

Students may need access to financial support, equipment and technology support, learning resources, and academic advising. A number of these student services may be provided in a virtual form (Brigham, 2001). In many cases, costs borne by the traditional institution such as printing, or passed on to students who can ill afford an additional financial burden. In collaboration with the Canadian International Development and Research Centre (CIDRC) countries such as Benin, Egypt, Kenya, South Africa, and Uganda have established a net of researchers to provide affordable access to information and to support students as well as to promote the use of ICTs for community development.

In addition to issues related to the cost of equipment, access to the internet, lack of familiarity with technological tools, limited access to up-to-date and engaging resources, and the need for quality assurance systems, there is an increased job market for student services. Students have ever more concerns that must be addressed. These concerns may contribute to attrition rates that can be 25% to 40% higher in distance education than for traditional face-to-face courses (Angeli, Williams, & Metzler, 2007). Human beings are social beings who rely heavily on face-to-face, verbal cues, immediate feedback, and frequent contact with others. If these social factors are not addressed, distance education may lead to the feeling of isolation (Hollman, 2002). Students may feel the need to be part of a community. A community of learners. If educational technologies available to them do not provide opportunities for interaction with other students, study groups, and the involvement of faculty and peers should be built into the program so learners do not feel isolated. It may be necessary to inform employees and family members about the long-term benefits of the education being sought and encourage them to support the learner. Students may want frequent contact with their instructor or tutor in order to obtain feedback that is timely, effective, and nurturing. The number of potential challenges facing students in developing countries is significant, but they can be overcome if careful thought is given to addressing their needs.

Dealing with faculty concerns

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Faculty may not support a learning system that is substantially different from the traditional, post-colonial face-to-face institutional environment in which they were trained. The implementation of distance education may be impeded by faculty who have limited or no experience with distance education (Quint, 2008). These faculty may also resist to a change in their teaching environment. If institutions wish to provide research and publications rather than the time and effort required to produce and support distance education courses, faculty may not have the support they need to make the transition to an electronic form of distance education (Anderson & Middleton, 2002; Levitt & Milheim, 2003). They may develop teaching anxiety associated with the lack of training with the new technology and instructional methods, the tension between allowing time to online course development and research, increased workload, and performance expectations in unfamiliar learning and instructional environment in which they are not used to and constructive approaches may be emphasized. These faculty concerns are especially in developing countries such as Botswana (Wright, 2007c), as well as in more economically advanced countries such as Brazil (Porto & Borges, 2005).

Technical support is often lacking in developing countries, as the few individuals with technical expertise focus on network infrastructure and security. Faculty must learn how to install and maintain computers and software and troubleshoot problems that they and their students encounter (Wright, 2007b). Instructors also need to learn a variety of online computing classes (Smith, 2003) especially how to facilitate learning (Moore, Finkle, & Waterson, 2007), build effective interaction in the courses (Fløttum, 2002), manage their time (Ly, 2003; Shi, Blk & Magdala, 2000), and write effectively (Thomas, 2000). Often overlooked is the need to inform instructors and students about copyright and ethical guidelines as well as to encourage them to question what they locate on the Web and to verify web content. Governments and institutions should be encouraged to establish laws and policies that support the free exchange of information for educational purposes.

One of the major challenges faced by faculty is that they do not have easy access to it. Since 2006 the National Open University of Nigeria has provided laptops with general packet radio service (GPRS) and internet-enabled wireless links in some communication among its staff, especially the study centre staff and instructors on the main campus. The computers are provided via a very flexible loan arrangement between the staff and the university management. Each Internet card has a monthly airtime credit of US$33. Students receive purchase large quantities of computers at reduced rates and provide their distance education instructors with the technology.

Students are a resource that is often overlooked when faculty training is being implemented. In general, young people tend to pick up technology skills quickly and can be used to assist instructors in learning computer skills and developing multimedia-based materials (Wright, 2007b). If this is to occur, faculty may need to overcome their resistance to learning from students, which may be accomplished more easily in some cultures than in others.

To provide faculty with current information and skills pertaining to distance learning institutions and governments in countries such as Bangladesh, Ghana, Brazil, and India have consulted with international agencies that are usually based in Australia, Canada, England, Germany, the Netherlands, Sweden, and the United States. For the consultants are not always available, they are not with their unfiltered Western views and provide one-way "information tours" rather than opportunities for participants to discuss how to accept what they have heard. For example, the learning mode in the West usually involves one instructor with a few students, this would be unacceptable in developing countries (Kittel & O'Rourke, 2004). Developing country hosts should insist that the learning sessions be interactive and allow time for reflection and the development of...
local solutions. Educators should be encouraged to obtain clearer views from reliable websites and blogs such as EDUCAUSE (http://www.educause.edu), Stephen's Web (http://www.down.ac.za), and ZA-Lean (http://za.lean.com.at). Educators should actively participate in organizations such as the MERLOT Africa Network (http://www.merlot.org), that focus on the scholarship of teaching and learning using electronic resources.

Accessing up-to-date educational resources
Open educational resources and digitized print resources can help alleviate situations arising from the paucity of up-to-date educational resources. Sources of open courseware include the OpenCourseWare Consortium (http://ocw.mit.edu), which provides access to university courses from Australia, China, Columbia, France, Japan, Korea, Mexico, the Netherlands, Saudi Arabia, the United Kingdom, the United States, and Vietnam. The Open Educational Resources Consortium (http://www.openedinresources.org) offers teaching and learning material at the basic, secondary, and college levels. It can be retrieved online and transferred to compact discs or memory USB keys for use across-the-internet accessibility and bandwidth limitations. In 2008 the South African Institute for Distance Learning (SANIDE) established Open Educational Resources (OER) Africa (http://www.oerafrica.org.za) to encourage the development of OER for higher education systems in Africa. The OER Africa Community, http://www.oerafrica.org.za, is a collaboration of higher education institutions that provides audio and video captures of lectures at leading universities. Most importantly, educators in developing countries need to overcome the "two-traditional hurdles" by reclaiming, localizing, and contextualizing material they obtain from other sources (Wright, 2009). If course material developed for local context is not available in an open-source format, they must obtain permission to use it and then simply forward it by adding their institution's name, logo, and contact information. The materials are no changed significantly and considerable time is saved. Educators may decide to localize material by preparing appropriate information, including local examples, or learning by course components. The OpenLearn Library, http://www.openlearn.org, managed by the British Open University, enables users to download individual course units. Distance educators may also contextualize the material for a local audience by changing its content and style. The African Virtual University (AVU), http://www.aovu.org, aims to provide world-class quality education and training programs in universities in Africa as well as undergraduate and graduate academic courses. One of the major challenges is to adopt course material developed in an efficient Western context to the educational environment in Africa.

According to Lou Shugard of Curt University of Technology in Australia, material that has been adopted successfully must balance Asian, international, and African perspectives. It must allow students to reflect on the knowledge in their own countries, yet enable them to draw on expertise and experience from other countries (Wright, 2007).

The Ordinary Digital Library (http://www.ordinarydl.org) of "The Internet in a Box" Initiative managed by the University of Iowa enables people in developing countries to access recent information without incurring internet charges or struggling with limited internet bandwidth (Jeffrey, 2007). The library comprises more than 65,000,000 pages including major digitized libraries of the Internet Archive (http://archive.org), Project Gutenberg (http://www.gutenberg.org) of classic literature collection, 40,000 videos, and 200 full-text journals. The material is spread on Windows and Linux servers costing as little as US$20 per month to plug into existing local networks. These servers provide access to information that can be up to 5,000 times faster than the satellite links that are used primarily in Africa and South Pacific. They are currently located in institutions in Africa, Bangladesh, Haiti, and India. Institutions are charged an annual fee of US$20 for twice
yearly updates. A search function is provided that allows users to search the content they add themselves. The OERuniversity, Digital Library, MITx, OpenCourseWare, and other similar open source initiatives have enabled learning such as OERuniversity in Nigeria to state "As a student in a developing African country, OER is helping me access knowledge, and information I never dreamed at getting. It's inspiring me to push harder and enjoy learning with the assurance that I'm getting the best" (Oliveira, 2008).
distance education courses continue in both the developed and developing worlds. The continued growth and success of distance education institutions will depend on the extent to which issues covered in this article are addressed, as they of affect the quality of the learning experience provided to students. For those in developing and emerging nations, distance education is thus a priority of a better life, and just an enhancement of existing educational offerings.

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