

Going Distance: A Proposed Model for Ghana

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Abstract: *This article is an excerpt from a previous research. The study was a qualitative case study and the purpose was to explore the effectiveness of interactive distance educational technology in the United States as a whole and to identify strategies for using best practices established in U.S.-base distance education programs as a basis for developing a model for Ghana.*

1. INTRODUCTION

The demand for an anytime anywhere form of education is on the rise as nations around the world prioritize education and equal access to education. Education may be a panacea in combating diseases and poverty, resulting in progress and the development of a nation. As a complement to the traditional form of educational delivery, distance education has assumed a prominent position in today's educational world. In view of this, the focus of the study was on identifying the ways in which distance education could help bridge the educational disparity between privileged and under-served communities in Ghana. In an attempt to find a solution to this problem, the researcher examined three United States-based distance education programs. One of the three programs no longer operates but was successful during its period of operation. These three perspectives provided insight into the elements that made each program successful, as well as the issues that have the potential to affect the sustainability of a functioning program. Of the three studied programs, two were private Christian institutions, and one was a public institution.

To identify issues relating to distance learning, a qualitative case study research methodology was used. Data were collected through observation, interviews, and review of applicable school records. Multiple participants were interviewed at each school, including administrators, instructors and technical directors. Themes emerged as a result of building a logical chain of evidence through identification of patterns related to the research questions. The four main focus areas of the study were media of delivery, assessment of program effectiveness, issues responsible for success, and issues to be considered in laying the groundwork for a distance learning program in Ghana.

2. GHANA'S READINESS FOR DISTANCE EDUCATION

In its effort to reach middle income status by the year 2020, the government of Ghana has recognized and prioritized the role of Internet and Communication Technology (ICT) as a contributor to the country's economy. The country's medium-term development plan and the Education Strategic Plan from 2003-2015 suggests the use of ICT to reach out to the poor (Mangesi, 2007). According to Mangesi, Ghana ICT policy has established the following priorities:

- Ensure that students have ICT literacy skills before coming out of each level of education
- Provide guidelines for integrating ICT tools in all levels of education
- Provide means of standardizing ICT resources for all schools
- Facilitate training of teachers and students in ICT

- Determine the type and level of ICT needed by schools for teaching and administrative purposes
- Promote ICT as a leading tool in the school curriculum at all levels (p. 4)

2.1. Research Indicators

Research indicates that Ghana's ICT infrastructure development is progressing at a rapid rate (0.4% in 1995 to 2.9% in 2000) compared to other low-income countries globally, and above the 1.1% average for Sub-Saharan Africa (Intsiful, Okyere & Osae, 2003; Murphy, Anzalone, Bosch, Jeanne & Moulton, 2002). In addition, several initiatives are underway, headed by the government of Ghana and other agencies, to develop the ICT infrastructure so as to bridge the digital divide between Ghana and the developed world. Prominent among these initiatives is the development of a national fiber optic network (Intsiful, Okyere & Osae, 2003). Existing Internet service providers (ISPs) and telecommunication companies have invested heavily in ICT infrastructure. In addition, the government of Ghana and other agencies has trained more than one thousand professionals in ICT and related areas to provide the necessary knowledge and skills to support ICT activities in the country (Intsiful, Okyere & Osae, 2003).

Currently, the New Partnership for Africa's Development (NEPAD) is developing a schools initiative for African countries to promote communication and educational technologies in all aspects of learning in six under-served high schools spanning six of Ghana's ten regions. The Ghana Internet and Communication Technology initiative is also aimed at training students and technology instructors to provide technological support. As of now, five major training centers exist across the country, and both students and technology instructors are being trained to handle the technical challenges that arise from classroom use of technology (Nyarko, 2007). The purpose of these efforts is to achieve the Ghanaian government's target to connect 400 schools to telephone facilities as soon as possible. This will provide the infrastructure for the e-schools initiative to stream content throughout the country (Nyarko, 2007).

2.2. Telecommunications Infrastructure in Ghana

Ghana telecommunications infrastructure is operated by Ghana Telecommunications Limited, or Ghana Telecom. Ghana Telecom currently operates a wide range of digital telecommunication infrastructures, providing cable, Internet, phone and cellular coverage to most of the country. This asset enables Ghana Telecom to offer a broad range of telecommunication services to customers with even the most stringent and extensive requirements. Ghana connects to the global highways using the SAT 3, a fiber optic technology utilizing cable and satellite. This SAT 3 submarine optical fiber cable linking West/South Africa and Europe to USA and Asia provides quality phone and high-speed Internet service. Currently, most people in Ghana rely on cellular phones with satellite Internet connection and wireless chips to access the Internet.

Though Ghana's infrastructure still has further to go, a strong foundation exists for making technology more ubiquitous. The government has established infrastructure improvements for technology as priority, which suggests that these improvements will continue.

3. PROPOSED MODEL FOR GHANA

The interviews that provided the data for this study offered rich insight into issues that promote success in secondary distance education, as well as issues that can threaten the expansion and sustainability of programs. This model is grounded in the findings of this research. It applies the derived principles/themes to the practical realities of infrastructure, funding, and politics in Ghana today. The proposed model serves as a basis for future educational planning with the hope that it can contribute to bridging the educational gap between privileged and under-served high schools in Ghana.

Despite Ghana's efforts to establish a competitive advantage in information technology, Internet accessibility is not a reality everywhere in Ghana. In light of this, the model proposed reflects the reality on the ground. A basic model for discussing development of a limited distance learning program is offered. At this time, Ghana does not have adequate technologies available outside of large metropolitan areas. Therefore, it is worth mentioning that some of the principles and themes

applied in the development of this model are based on issues pertinent to the Ghanaian system while some are not.

The proposed model is a centralized high-school curriculum delivered on televisions or computers screens through DVDs and/or flash drives and distributed to under-served schools around the country. The curriculum will be delivered by outstanding Ghanaian teachers following the core curriculum mandated by the Ghanaian government. On-site facilitators will be present in the classroom as lessons are delivered on the television or computer screen, depending on available resources. The government of Ghana, Non-Governmental Organizations (NGOs), and philanthropic organizations and individuals are expected to fund the program. This model is an exciting step forward in the effort to provide consistent, quality education for all Ghanaian children, providing a more level playing field for access to higher education and economic security.

What follows is an outline of the proposed distance education model for Ghana developed around the principles and themes derived from the study. The model is described in five core topic areas: program development, technology, sustainability, staffing and evaluation.

3.1. Program Development

Program development must start with a needs assessment. The identified needs are lack of infrastructures, lack of logistics, and lack of qualified teachers. As resources are limited and this is only the first step toward educational reform, this model will focus primarily on the lack of qualified teachers in many under-served areas of the country. Many secondary students in Ghana face considerable disparity in educational resources. Those students living in underserved areas do not have adequate resources needed to achieve academic success and go on to college. The provision of centralized educational curriculums, designed and taught by Ghana's brightest and best educators, represents significant progress toward the goal of equitable and quality education.

A team of well-qualified educators, administrators, instructors, superintendents of schools, and the Ghana government will be the stakeholders in the program development and operation. The Ghana Education Service (GES) operates under the Minister of Education, Science and Sports and provides oversight for elementary and high school education. Well qualified teachers in individual subject areas will be contacted and contracted through GES to build curricula that best leverages the capabilities of interactive distance education. These teachers would present lessons in their subject areas in line with the approved syllabi of the GES.

The lessons would be videotaped and burned onto DVDs and/or flash drives for distribution to schools in under-served environments. Students in these schools would have the ability to watch the lessons in class using a DVD player and television screen. The availability of electricity supply in cities and towns where high schools are located would make the viewing of the lessons through video player and television screens possible. This would give under-served schools the opportunity to enjoy quality lessons from well-qualified teachers.

The curricula would need to be in accordance with the approved syllabi of the Ghana Education Service. Collaboration with GES will help ensure that curricula meet the government content and quality standards for secondary education. In Ghana, secondary subject requirements include English, mathematics, science, agricultural and environmental studies, life skills, Ghanaian language, and physical education. Each student selects three subjects from a wide range of program options consisting of three subjects studied within five specialized programs of study. Agriculture, technical, business, vocational, and general (arts & science) constitute these programs (Ghana Education System, n. d.).

The results of this study reinforce the importance of interaction. For interaction such as questions and answers after watching the lesson or presentation, under-served schools would have on-site facilitators to help answer questions for students at the site, and challenging questions beyond the facilitator's knowledge would be referred to the educator or curriculum author through e-mail, text, telephone, or other available communication technology.

Another important consideration in any distance education program is the role of community and service learning. Formation of knowledge, according to social constructivist theory, depends on one's social environment and service learning. According to Caviness (2007, p. 27) the social

dimension of education —is a valuable part of holistic education. The proposed model will provide social opportunities for students by going on retreats and using electronic features such as chat, e-mail, blogs, wiki, and students clubs. They will render services to the community by caring for the aged in nursing homes and the sick in hospitals. They will also engage in service learning through collaborative assignments. Socialization and service learning is recommended in the curriculum to bridge the existing disparity between privileged and underserved schools in Ghana. Socialization and service learning programs, such as serving in public places like hospitals, museum, zoo, historical buildings, will be introduced.

3.2. Technology

Technology provides the backbone for distance education programs. With the widespread availability of communication media, students and teachers in different geographic locations can interact through technology. The Internet is the most common delivery medium for current-day distance education programs. Although the future of Ghanaian technology is promising, most areas, particularly those with lower incomes, do not have reliable Internet connections. Given this reality, a more common and readily available delivery medium is proposed. Most school-aged Ghanaian children have access to television sets with DVD players and many have access to personal computers with universal serial bus (USB) ports. The proposed distance education model would use these as delivery media. Curricula would be disseminated on DVDs or flash drives for playback on televisions or computer. Interaction between instructors and students would occur via telephone, e-mail, text messaging, or other available technology. Each classroom participating in the distance education would require the following equipment for curriculum delivery: television monitors, DVD players or USB ports, and telephone lines or cables.

The production and development of the course materials would take place either in a production studio or regular classroom. On the way to achieving the model state of technology diffusion, an intermediate model could provide a studio for recording content—lessons prepared by qualified teachers in their subject areas with particular attention to interactivity and with the fully leveraged benefits of distance education. These lessons could be videotaped and uploaded onto a site accessible by schools in under-served environments. Students in these schools could have access to recordings—CDs or otherwise—containing the lessons along with availability of equipment to project onto a television and to interact with the lessons. This would, as mentioned before, provide under-served schools with opportunity to enjoy quality lessons from well qualified teachers. With the current state of Ghana's technology system, this is a possibility for future programming. The focus of this study has been a more realistic proposal for more immediate initiation. As a result, more realistic and basic forms of recording in regular classrooms is proposed to meet the immediate educational needs of underserved areas.

To provide delivery of the content to the students, this basic model would require computers, telephone lines or cables, camcorders for recording of classes, and the ability to distribute courses and content. Contents would be prepared in advance to ensure that schools received the materials in a timely manner. Distributions to sites without Internet capability for downloading would be made through regular mail or could be available for pick up at educational offices within the district.

Since this study will not rely on the Internet as its initial delivery medium, a full technical team will not be need. However, technical personnel would be trained to support teachers to develop the content. Their job would be ensuring quality production through proper recordings, editing the content, posting the content on the web, burning content on DVDs and flash drives, and providing technical support for on-site facilitators. Technical support for students would be provided by the individual schools. Students will receive basic training to operate the television set with the DVD player.

Program developers should pursue collaborative partnerships with existing educational organizations such as the New Partnership for Africa Development (NEPAD). NEPAD is currently establishing science centers throughout Ghana and may be able to provide some educational content and classes for the distance learning program. Partnerships such as this can greatly enhance the educational experience.

3.3. Sustainability

Programs cannot be sustainable without securing initial and ongoing funding. Private School B ultimately closed because they lacked ongoing funding. Initial planning must include all anticipated start-up and ongoing costs and expenses. The recommendations provided do not include financial support for costs related to infrastructure, teacher salaries, or curriculum development—which will be considerable.

The government of Ghana, non-governmental organizations (NGOs), and philanthropic organizations and individuals are expected to provide the majority of start-up funding. A proposal built on this study will be sent to the Ghana government and relevant NGOs and philanthropists in pursuit of grants and other funding to begin operations. Some of the considered NGOs are Volunteer Partnership for West Africa, Savannah Education Trust Fund, PAAJAF Foundation, and the Cheerful Heart Foundation. However, these resources must be considered temporary. Start-up monies must be replaced by more sustainable and reliable sources of funding, such as tuition. Other possible sources of revenue might include selling the curriculum materials to students. Beside the above, program developers will pursue partnerships with universities and colleges who might have the resources—both human and financial—to develop the curriculum and present the lessons on DVDs and flash drives. Universities are often resource rich and able to provide support for all aspects of a project such as the proposed model.

3.4. Staffing

Well-qualified educators are key to any successful distance learning program. Recruitment, hiring, and retention of well-qualified educators is essential to the proposed model. These educators will provide instruction and consultation to site facilitators and students alike.

Additionally, distance learning programs rely on competent and qualified site facilitators. This unique role is designed to be intellectual, social, managerial, and technical. The facilitator of the class will help students with questions and answers while referring difficult questions to the content developer through telephone, text, e-mail and other means of communication available to the facilitator or class.

The Ghana Education Service (GES) is the institution that provides educational services to the nation's educational institutions. Recruitment efforts will include contacting the GES for recommendations and announcements to all qualified educators regarding open positions. Once the program director identifies a group of qualified candidates, the selection committee would interview and select candidates. Qualified candidates will have exemplified excellence in their courses through effective instruction resulting into national academic excellence.

Professional development will be an important part of the proposed model. Efforts will be made to provide relevant and current trainings for all levels of staff from doctoral-level educators to paraprofessionals providing administrative support. In concert with incentive programs, these professional development seminars will be part of the retention efforts.

3.5. Site Facilitator

Site facilitators were noted throughout this study as being crucial to the success of distance learning. Site facilitators function in four main areas—intellectual, social, managerial, and technical. As the class facilitator, they help students with questions and answers. As previously noted, any questions beyond their scope of knowledge are referred to the content developer through telephone or other available means of communication.

As this is a new role, site facilitators likely will require on-the-job training. Like the content developers, a resource person will provide training to site facilitators. Both site facilitators and students will receive training to trouble shoot any technical issues that arise.

3.6. Evaluation

The purpose of this study was to improve the quality of education for under-served schools. In order to ensure quality instruction is being offered and learning being enhanced, progressive data will be kept on instruction and learning via computer. The main data stored will be students test scores to determine any effect as a result of the program. Both students and parents will assess the

effectiveness of instruction at the end of every school term via evaluation forms presented at the end of every school term to evaluate the program. This will give them the opportunity to evaluate the program and express their level of satisfaction. Improvement measures will be taken as data determine an area of weakness.

4. SUMMARY AND CONCLUSION

Ghana, like many other nations in recent years, has made education a top priority for national development. Despite newly developed policies, however, there remains a significant quality gap between privileged and under-served secondary schools due largely to an inequitable ratio of governmental educational spending by geographic area. While urban schools flourish with better funding and more resources, many rural schools are substandard for the following reasons: (a) funding inequity; (b) inadequate infrastructure; and (c) lack of logistical support, material input, and qualified teachers. These problems call for attention and resolution—perhaps through distance education solutions.

Distance learning is uniquely suited to meet the needs of under-served schools in Ghana. The proposed model, developed from the principles and themes of this research, if implemented, could assist in addressing the existing educational disparity between privileged and under-served schools in Ghana and beyond. Having quality education will better prepare students for gaining entrance to college/university, acquiring a degree, becoming an asset to society through service, and contributing to the development and prosperity of the nation. This will lead to improved standard of living for the students, their families, and their communities. This, in turn, can impact the development of the nation.

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