Developing an E-Learning Strategy for Public Universities in Ghana

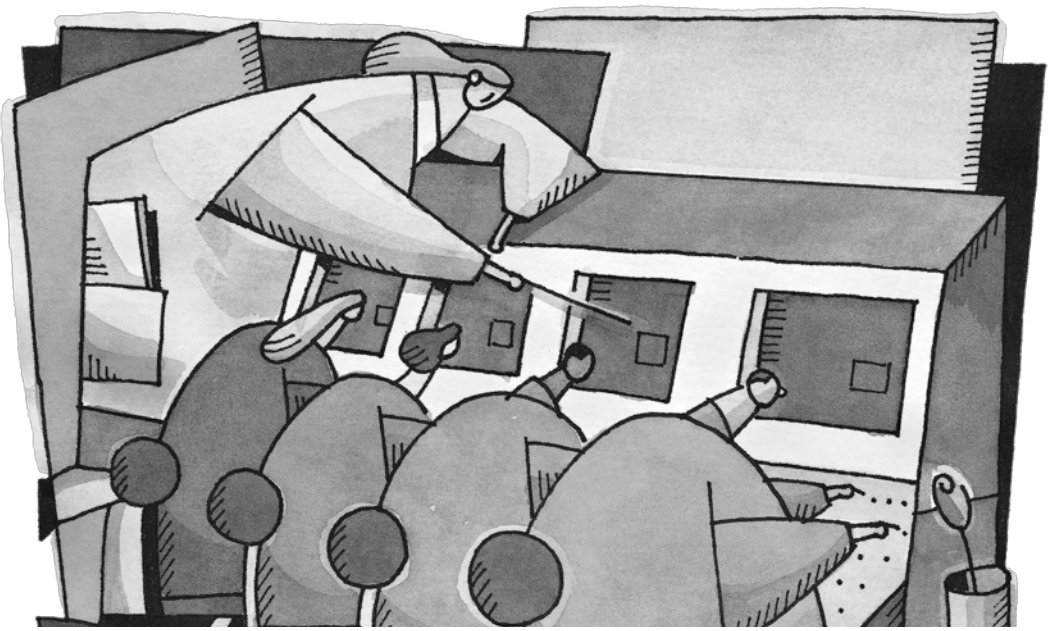
Introducing pedagogy-supporting technology in higher education in Ghana requires rethinking institutional policies and lining up stakeholder support

By **Isaiah T. Awidi**

While technology has enabled online education in many countries, the same cannot be said for African public universities. Universities in Ghana have made some progress in building networking infrastructure and acquiring computers, but integrating technology into the teaching and learning process has been a challenge. Instructional delivery remains largely instructor-led, with limited or no electronic collaboration between students and lecturers. To meet their objective of increasing enrollment through distance education programs, universities must establish appropriate e-learning policies and get the implementation of e-learning systems right the first time, establishing a record of success to build upon.[1]

Key challenges faced by Ghanaian public universities[2] include:

- Overburdened teaching, learning, and residential facilities in the face of socioeconomic pressures to make education accessible to all.
- Low teacher/student ratios and an aging teaching staff.
- Increasing industry demand for a market-led curriculum.



These challenges, though a source of worry, seem at least partly amenable to technological solutions. For instance, technology could be used to deliver training outside the university, compensate for teacher/student ratios, widen access to teachers across the globe, control or lower costs of higher education, and support a market-driven curriculum by creating a flexible learning environment.

Getting Advice from Stakeholders

To study these issues and obtain the vital perspectives of the stakeholders, I organized workshops at the University of Ghana (UG), Kwame Nkrumah University of Science and Technology (KNUST), and the University of Cape Coast (UCC) between May 24 and June 3, 2006.[3] A major objective was to explore issues around technology applications in teaching and learning in the public universities in Ghana. Participants included instructors, students, administrators/management, and IT support/technical staff of the target universities.

Workshop participants indicated their universities provided no or minimal support for technology in teaching and learning. Where it does exist, it is mostly in the form of PowerPoint presentations. None of the universities provided computers and projectors mounted in lecture rooms for lectur-

ers to upload their teaching material and teach. Traditional face-to-face classroom lectures are the approved instructional delivery approach.

Problems Preparing Learning Materials

In addition to the lack of technology for teaching, most lecturers had no formal training in instructional methods. Workshop participants agreed that lecturers should be trained in pedagogy immediately after recruitment. If instructional technology became more widely available, lecturers would also need training in using it to achieve specific pedagogical goals.

Traditional lecture preparation and delivery already face several problems. With the increase in student numbers, for example, lecturers use public address systems to make sure all the students can hear them. When the system fails, about two-thirds of the students cannot hear anything the lecturer says in class. Assessing students has also become very difficult, as most lecturers do not give assignments, and those who do cannot provide students with much feedback. Feedback provided to students is normally grades without comments.[4]

Pedagogy as a Technology Driver

The survey question "How can institutions move from a focus on technology equipment to pedagogy based on technology?" prompted participants to suggest that the question should be "In what ways can technology be used to drive pedagogy effectively in the universities?"

Over 65 percent of students entering the universities in Ghana are not computer literate, which points to the immediate need to include computer literacy in the curriculum. Faculty should organize IT training for all lecturers with a focus on using the Internet for research and technology for instruction. Templates could be provided to support instructors in selecting appropriate instructional methods, choosing course materials, creating course materials, describing the course's structure in terms of the content and objectives, determining midterm assessment methods and grading, and establishing the competencies students should acquire during a course.

The universities' libraries are better equipped with technological infrastructure than are the different faculties. Though the libraries have limited numbers of computers for use, they offer many e-library resources (particularly free online journals). Librarians at the workshops lamented that neither students nor lecturers use the resources, however. They complained that efforts to expose lecturers to online resources have been frustrated by their lack of interest. Other workshop participants attributed the negative response to lack of Internet connections in the departments, with poor connectivity even where there is access. They indicated that they would prefer to browse through digital instructional resources in the comfort of their offices or homes instead of traveling to the library or to an Internet café where connection might take all day.

Implementing E-Learning Systems on Campus

The culture of Ghanaian public universities was identified as a major barrier to adopting e-learning systems. By policy, a student's physical presence determines the number of credit hours earned in a discipline and counted toward a degree. The regulation states that all students shall attend all lectures, seminars, workshop sessions, and practical classes prescribed for the courses for which they registered as a precondition for taking the final examinations. Any student who is absent from lectures, tutorials, and practical classes without proper permission for a total of 14 days or more in any semester shall be deemed not to have satisfied the attendance requirements for the semester and shall not be allowed to take part in the end-of-semester examinations.

Technology weaknesses were identified as another barrier to implementing e-learning systems. Although the universities' networks, websites, and limited numbers of computers hamper adoption of a campus-wide e-learning program, they nonetheless could support pilots of such systems. Based on workshop participants' recommendations, however, e-learning systems must have a university—not faculty or departmental—identity if widely adopted.

Successful implementation of e-learning systems depends on good policies. The following suggestions came from university stakeholders:

- Policies regarding students' physical presence at lectures to qualify for graduation must be reviewed, as they are contrary to the concepts of e-learning.
- Blended learning would be more appropriate than completely online learning because real-time online interaction is not realistic at this early stage.[5]
- Proper planning is needed to ensure distribution to students of easily implemented technologies like lectures prerecorded on CDs or uploaded on faculty websites.
- Intellectual property should be adequately protected and the copyright holders appropriately compensated.
- Universities must decide whether they want to supplement their current teaching systems, or encourage fewer resident students and more distance learners. The two options should be clearly distinguished, or the end result might not be what was intended.
- Working models can serve as demonstrations of the new teaching/learning paradigm; many faculty have never used instructional technology and have no idea how effective it can be.

Providing adequate capacity and resources to develop e-learning systems is hampered by the universities' inability to retain highly trained and motivated staff. Technical staffs are discouraged by a high staff turnover rate, low pay rates, and insecurity about their career development

paths, as they are considered part of the university administrative structure. Some IT heads become frustrated by a lack of support from management to recruit more qualified, experienced, and dedicated staff and see outsourcing of key functions as the best solution. With these staff issues unresolved, developing, implementing, and sustaining an e-learning system would be a problem.

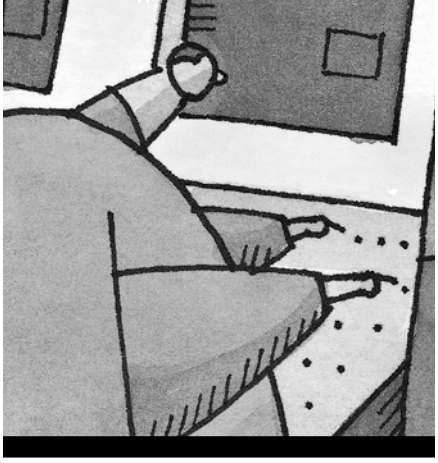
Workshop participants proposed that the universities collaborate to build a flexible learning environment that fits their cultural context. By pooling resources and taking advantage of each other's expertise, the universities could build adequate capacity and reduce costs.

Participants believed that having the right leadership is vital. Leaders need a clear vision in order to mobilize resources to achieve an e-learning environment. E-learning initiatives must not be limited to acquiring computers and running computer literacy programs.

Threats to Address

Internal threats to the adoption and integration of new teaching and learning systems are usually institutionally based and rooted in the organizational culture. Some instructors and educational managers prefer the old to the new methods of instruction, for example, and seek to find fault with any new system proposed. Add to this the frequently inadequate technical staff support and aging equipment on campuses, and the result is a strong disincentive to effective integration of a new e-learning system.

Faculty attitudes toward a proposed system must be watched closely, as they might perceive a threat in the system's influence on educational delivery. Instructors confident in their pedagogical skills and the effectiveness of their teaching might doubt the relevance of a new approach and have a problem switching. Others might lack confidence in their ability to use a complex system without embarrassing themselves in front of their students. Those faculty who already have had negative experiences using computers will avoid using the new system.



Training is key in overcoming these barriers to successful adoption of an e-learning system, including training in pedagogical methods that take advantage of the new technology. Because finding the time for training might be a problem for faculty, it is important to plan the training schedule to accommodate them and to have necessary support easily available.

Recommendations

The public universities in Ghana have built infrastructure that can support e-learning at a lower scale. Postgraduate programs with fewer students could be used for pilots of e-learning systems—after e-learning policies have been instituted, that is.

Human resources are critical. Initiators of an e-learning implementation must ensure positive attitudes among the stakeholders and strong motivations to succeed. Effective training will provide a steady stream of educated and experienced personnel capable of guiding future activities involving the system. Technical staff must be well motivated and adequately supported to sustain an effective e-learning environment.

Developing an e-learning environment that is trusted and sustainable for higher education requires pursuing a blended approach to educational delivery, at least initially. Instructors like to meet and get to know their students and vice versa. Lack of widespread computer literacy among students and discomfort with technology-based pedagogy among faculty also argue in favor of blended learning as public universities in Ghana begin to adopt e-learning systems.

To increase the likelihood of a successful e-learning system implementation, institutions could go into partnership with private Internet service providers to support students off campus. A major consideration is the partners' ability to provide electricity when the main power supply cuts off. Bandwidth management and use, management support of the initiative, and change management strategies can also affect the new system's sustainability. All must be addressed for successful implementation.

Strategies for Success

A systems approach would be most appropriate to an e-learning system implementation. By involving all stakeholders, especially instructional design experts, the project leaders can clearly define—and achieve—effective plans for e-learning resources and goals for the system's implementation. The systems approach also promotes control and coordination of the instructional process, as each group knows exactly which role it must play. Content developers and delivery experts would evaluate the processes and delivery, thus ensuring quality control.

First and foremost, the universities must have clearly defined strategic plans that spell out e-learning policies and implementation strategies. Having an informed, university-wide committee in charge of the implementation is very important. Committee members must be visionaries with enthusiasm for innovation in educational delivery. Colleges, faculties, and departments must also have strategic plans that fit into the university-wide strategic plan, which would guide their e-learning adoption and implementation.

The institutional plan must address funding for content development, development and support of technical staff, student enrollment, and change management. Workload issues must be considered, and intellectual property rights must not be overlooked.

Students' and instructors' needs and concerns must be carefully considered in the institutional plan. The implementation process can flounder if stakeholders' needs are not met. The strategy must clearly identify how e-learning will address emerging issues, gathering information from

pioneering implementers or e-learning experts. Management must openly support the e-learning strategy, and the e-learning application adopted must support the universities' established pedagogy. Deficiencies in support for the universities' curriculum and instructional methods would frustrate the implementation process.

The strategic plan for e-learning adoption and implementation must have objectives indicating the schedule and phases of implementation and integration into the entire university's programs. The plan also must clearly identify the various sources of funding, whether from within the university or from the national government.

With an appropriate strategic plan and policies in place, careful consideration of the stakeholder's needs and concerns, and adequate funding, the public universities in Ghana will have set the stage for successful adoption of e-learning instructional methods and implementation of appropriate supporting technologies. This groundwork can facilitate the national goal of offering higher education for everyone in Ghana who wants it.

Finally, it takes the right leadership at both the national and institutional levels to recognize and treat ICT as one of the top priorities in developing a successful e-learning environment. Senior executives must appreciate the value of ICT and commit to its use, including featuring technology prominently in their budgets. Leaders must see ICT as a technological resource that can improve delivery of higher education both nationally and around the world. *e*

Endnotes

1. In an earlier *EQ* article, I described the factors critical to choosing an appropriate course management system. The recommendations provided here arose from the same research reported in that article. See Isaiah T. Awidi, "Critical Factors in Selecting a Course Management System for Higher Education in Ghana," *EDUCAUSE Quarterly*, vol. 1, no. 2 (2008), pp. 24–32, http://connect.educause.edu/Library/EDUCAUSE+Quarterly/CriticalFactorsinSelectin/46028.
2. This list was culled from the basic statistics and annual reports provided by the vice chancellors of public universities in Ghana from 2000–2007.
3. Awidi, "Critical Factors."
4. Some courses have up to 600 students, and instructors must grade assignments and tests in the absence of technology tools to support the process.
5. At this point, most stakeholders are not sufficiently online themselves to work comfortably with a completely online educational system. Couple this with an unstable power supply, insufficient technical support, and inadequate infrastructure, and e-learning is just not a viable option yet.

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