



Connecting to the World Beyond: Technology, Institutional Change and Community Outreach

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What business does a little-known commuter college have in making information technology a central element of, quite literally, everything it does? Does it make sense for such an institution to provide each of its 4,600 students with a powerful multimedia notebook computer and remote, "anywhere/anytime" access? Why is a non-residential college serving as a prototype for a "universal campus card?" And how do all of these relate to public service and community outreach?

Clayton College & State University is one of 34 institutions of the University System of Georgia. Begun as a two-year junior college in 1969, Clayton State became a senior undergraduate institution in 1986 and continues as a non-residential, commuter campus located in Atlanta's southern suburbs. Nearly 5,000 students enroll in career-oriented certificate, associate, and baccalaureate programs. Clayton State is distinctive within Georgia because it is the state's only four-year public institution that also houses a regional institute of the Department of Technical and Adult Education.

This is a tale of how a relatively obscure commuter institution is acting on some measured conjectures about what the near-term future holds for higher education in general and, more specifically, Clayton State. It is a story of how information technology is "transforming" the basic teaching, learning, and management functions of one college and, in the process, renewing and expanding public service and community outreach missions.

The Near-Term Future of Higher Education: Some Implications

Projections of what colleges and universities can expect during the next decade vary, but all scenarios include expectations of accelerated growth in knowledge and information, actual (in the case of states such as Arizona, California, Florida, Georgia, and Texas) or potentially larger enrollments, establishment of a "new majority" of students (25 and older, employed, and resigned or committed to lifelong learning), and increased competition for public funding.

Consider these in the context of how most colleges and universities now operate:

- Faculty-centered — What is taught, and how and when it is taught are driven primarily by the concerns and interests of professors.
- Information technology plays an increasing support role — Overhead projectors costing \$650 are being replaced by \$2,000 computers and \$4,000 data projectors, but classroom pedagogy continues to be dominated by the lecture.
- Assumptions about students — Most are enrolled full-time, live on or near campus, and are waiting to enter the workplace; they have abundant time and relatively flexible schedules, and need to congregate for effective learning to take place.
- Funding — Support comes almost exclusively from government and students.

Given how most of us operate at present, the implications of the near-term changes confronting higher education can be sketched out as follows:

- Colleges and universities will need to hire more faculty and staff and construct more facilities.
- More funds and time must be invested in technology and technological support.
- Institutions' financial dependence on government and/or students will increase.
- If the costs of attending college continue to increase more rapidly than most other sectors, viable alternatives to conventional higher education will emerge — indeed, are already flourishing.

Another way of operating is available to colleges and universities. Consider these alternatives:

- Learner-centered — Focusing more on and being more accountable for what is learned than what is taught, including the area of career preparation.
- Role of information technology — In light of the very substantial investments being called for, making information technology a central element of teaching and learning.
- Changing assumptions about students — Most are enrolled on a part-time basis, commute, and are already working, often full-time; their time is scarce and inflexible; and learning requires interaction, but this can take place from remote sites at different times.
- Funding — Will require sharing among government, students, and business and industry investing in higher education.

The implications of this other way for colleges and universities to operate include:

- changing teaching and learning in fundamental ways and, in the process, making higher education more accessible to the coming generations of lifelong learners;

- creating reasons and means (other than traditional philanthropy) for business and industry to invest in higher education, especially with respect to the rapidly growing needs of colleges and universities for information technology and telecommunications;
- developing some efficiencies as well as some revenue sources while reducing inequities among students in terms of access to essential learning tools; and
- forging enduring relationships with students/learners that go far beyond traditional alma mater-alumni ties and are rooted in the need for continuous, lifelong learning.

An Initiative: The Need for Institutional Change

In March 1997, the Board of Regents of the University System of Georgia approved a joint proposal from Clayton State and Floyd College to launch the Information Technology Project (ITP) as a possible prototype for how to use technology. ITP was launched with three general goals:

1. improve student learning in the following ways: increase learning productivity, enhance career readiness, better accommodate the needs and constraints of non-traditional students, and make lifelong learning a practical reality;
2. expand and improve services to all students on and off campus; and
3. reduce institutional reliance on state appropriations but nevertheless continuously improve the learning environment of students.

In the case of Clayton State, these goals reflected a careful consideration of a number of institutional weaknesses. In 1994, information technology was virtually non-existent within the campus — classrooms and laboratories had not been altered since they were constructed in the late 1960s and early 1970s, and services to students were very limited. This state of affairs was especially challenging in light of the student profile (non-traditional [average age of 28, 70 percent working, two-thirds female], strong career orientation, totally commuter); prospects of larger enrollments by both traditional and non-traditional students, and Georgia's and Atlanta's emergence as a center for "high-tech" industry in telecommunications and information technology.

Telephone surveys of 2,400 households revealed that Clayton State was not well-known even within its primary service area of the southern suburbs of Atlanta and, to the extent that the institution was known, its "image" and reputation for high-quality education were mixed.

Georgia and its University System enjoyed robust economies and budgets (especially as a result of the Helping Outstanding Pupils Educationally, HOPE, scholarship program, supported by the state lottery), but the experiences of other states' public higher-education institutions, as well as those of other sectors such as banking and

health care, portended inevitable and most likely adverse changes to "normal operations," especially with respect to state support.

Collectively, these conditions created both a window of opportunity and a sense of urgency for attempting to make strategic institutional changes. The strategy itself evolved from two principal considerations: one, the centrality of information technology, and two, the need to establish external partnerships with another public institution for its expertise and its investments. The initiative represented significant departures from established policy and practice, and it was necessary to demonstrate the viability and replicability of the approach to state government, and select business and industry partners.

In addition to strong state support for higher education, the window of opportunity was all the more inviting because of other initiatives within Georgia. The University System enjoys a comprehensive and reliable data/telecommunications network known as Peachnet which links all of its institutions and extends to a wide array of other public entities, including public schools, public libraries, and technical institutes. Peachnet, in turn, serves as the backbone for the state's digital library, GALILEO. In 1995, funding enabled the launch of Georgia Library Learning On-Line (GALILEO) as the means for libraries across Georgia to share data bases, implement universal borrowing, and effect virtually unlimited access to information resources. GALILEO capitalized on the emergence of the World Wide Web and created a compelling rationale for efforts to provide students with remote, "anywhere/anytime" access to information resources.

A University System initiative to create a common student data base also promoted efforts to advance the use of information technology to improve services to students, many of whom need to use several institutions' programs and services. Accommodating these students' needs and taking advantage of a common student information system created an opportunity to consider development of a card that facilitated access and privileges.

Developments beyond college campuses also encouraged new approaches. Passage of the Telecommunications Act of 1996 and the deregulation of that industry meant telecommunications providers would have to compete for customers. College students represent a very attractive market, especially if institutions borrow from their experience with campus vending and food services. In these latter instances, colleges and universities contract with service providers in return for a commission on sales to students. A similar approach could be used with telecommunications services, especially when, in the case of ITP, each student would be utilizing such services on a daily basis.

The advent of on-line banking and commerce creates additional opportunities. Vendors are eager to exploit the capabilities of the Internet and Web. Since each of Clayton State's (and Floyd College's) students would have personal use of a powerful and portable

notebook computer, (see following section), they represent a ready-made audience for on-line banking and other financial transactions and vendors are prepared to pay campuses commissions on sales.

One other development that augured well for a new approach was the recognition on the part of some public officials that leasing, as opposed to purchasing, information technology makes sense. Regular and frequent advances in the power, speed, and capacities of computers tend to render devices obsolete relatively quickly. Upgrading computers is a labor-intensive, expensive undertaking, so short-term leasing becomes a viable approach.

Finally, the leadership of the Board of Regents of the University System of Georgia — in particular, those regents with experience in business and industry — was encouraging. Discussions with individual regents revealed just how eager they were for changes to the ways colleges and universities operate and how open they were to alternative ideas.

The Information Technology Project (ITP)

ITP consists of three interrelated components:

1. UPITA™ (universal personal information technology access) refers to Clayton State and Floyd College leasing sufficient numbers of powerful multimedia notebook computers from a single vendor and then providing each student each academic term with personal use of a computer, remote Internet-access capability, basic software training and assistance, and repair and "loaner" services. The institutions' leases on the devices are for two to three years and enable them to renew technology at regular, planned intervals and thereby guarantee that students have access to up-to-date tools. The institutions (and students) are not burdened with equipment that quickly becomes obsolete, compatibility and connectivity are assured, and the problem of "haves" and "have-nots" among students is eliminated. This approach creates tremendous economies of scale and thus lowers costs for everything from the equipment to the software.

Faculty and staff also are provided notebook computers and extensive training and professional development in the use of information technology.¹ Campus networks have been redesigned and strengthened and classrooms are being renovated for daily use of notebook computers and Internet access.

2. A universal campus card is being developed and implemented for students. Magnetic-stripe "credit cards" are not new, and many campuses use these devices for purposes of identification and for on-campus information and financial transactions such as food services, vending, access and security, and the like. The card being developed by Clayton State and Floyd reflects their students: older, employed, and not living on or, in some cases, very near campus. It is designed for use off campus as a way of improving the processing of student financial aid; for ATM access; to facilitate access to and use of other

University System institutions' resources, programs, and services; as a check or credit card; and as a telecommunication services card.

3. All of the aforementioned will be budgeted as auxiliary services and the revenues associated with or generated from these activities are treated as auxiliary funds. The objective is to make the acquisition and support of the information technology and services of UPITA™ and the universal campus card self-sustaining within four years and therefore not dependent on state appropriations. Auxiliary funds can be accumulated (subject to Board of Regents oversight) over time and fiscal years and thus enable the institutions to "save" for needed investments in infrastructure. State appropriations granted by the regents are used to renovate and construct facilities needed for ITP and a state program known as Equipment, Technology, and Construction Trust (ETACT) generates funds annually (from the state lottery) for which the institutions then require a match from vendors who bid to supply the computers and telecommunication services called for by UPITA™; otherwise, the goal is self-sufficiency.

As generous as state funding is in Georgia at present, it is not sufficient to finance the leasing of 9,000 notebook computers or the needed infrastructure improvements to make ITP work. Students are required to share a greater portion of the cost for what are projected to be dramatic changes and improvements in their education. Each student pays a \$200-per-quarter fee for the personal use of a powerful notebook computer and remote access/communications capabilities. While substantial, the fee is significantly lower than the costs of acquiring a comparably equipped computer, Internet access, and training and support services that are included in the quarterly fee. Because costs are known at the outset and institutions have a way (via auxiliary funding) of generating revenues from commissions, the fee is not likely to increase for several years. Students are not required to purchase technology that will become obsolete within a very short period of time and the quarterly basis acknowledges that today's students may have their education interrupted and have to "stop out." Finally, since UPITA™ applies to all students, the issue of equity of resources among students is rendered moot.

Finding New Ties to the World Beyond

ITP is a major undertaking and its prospects for success are by no means assured. Some students resent the fee increase and will enroll at other institutions. Security on a commuter campus in a major metropolitan center is a real challenge. Most importantly, it remains to be seen whether the three major goals of ITP — improving student learning, expanding and improving student services, and reducing dependence on state appropriations — will be realized within the first three to four years of the project's life.

Faculty and staff recognition of the opportunities ITP presents for them, and their acceptance of their responsibilities stemming from ITP, have been gratifying and most encouraging. Learning

applications are being developed at a very fast pace, and subtle but powerful changes in thinking about teaching and learning are beginning to manifest themselves in new practices. Staff are already seeing new ways of doing tasks and better serving students.

Most profound, however, have been the uses and applications beyond campus that are being prompted by ITP: it is as if the electronic connections that are at the heart of this initiative have prompted individuals and groups of individuals on campus to imagine new or expanded connections to people and organizations off campus. Having begun to see what is possible using information technology on campus, we are increasingly aware of how we could make use of the technology in working with the world beyond campus.

We are interested in making connections with other colleges, universities, and educational organizations (e.g., museums) that are making learning available on-line. As a medium-sized institution, we are not always able to offer the courses students need to complete their degrees, but some of those courses are available from other colleges and universities and can be accessed by our students, thereby assisting them to make progress in their education.

We are planning to extend UPITA™ to selected area high schools and their students. During winter, spring, and summer quarters, we will have "excess" notebook computers and will sublease these to local school systems, provide the training and support to students and their teachers, and incorporate them into ITP. We already envision extending this into middle schools.

Interest among small and large businesses in mobile commuting was already strong, but ITP has prompted Clayton State's continuing-education division to begin offering an array of training and consulting services related to telecommuting and mobile computing. The 1996 Olympic Games caused Atlanta-area employers to experiment in providing employees with the means to work from home or other remote sites and the likelihood that Atlanta will not meet air quality standards of the Clean Air Act is fostering still more interest. Clayton State will offer not only technical advice and training for telecommuting but also will provide assistance to managers and supervisors who will have to acquire a new set of skills when employees work from home.

Powerful multimedia notebook computers have uses that extend beyond conventional academic instruction. Georgia is home to a concentration of military installations and is a major transportation center. Despite recent improvements, many military personnel continue to experience problems in making the transition back into the civilian workforce. The transportation industry (i.e., rail, trucking, air) is experiencing serious problems in recruiting and employing a

high-quality workforce but has developed high-quality training materials, many of which are in video form.

UPITA™ can create a convergence between the needs of military personnel departing the services and transportation employers eager for capable employees. Much of the industry's training material can be reformatted to CD and adapted for training using a notebook computer. Working with the transition assistance programs at each military installation, Clayton State can identify individuals interested in remaining in Georgia after separation and working in the transportation sector, provide both the means (the notebook computer and on-line training and support) and the content (industry training materials reformatted and adapted as CDs) needed to partially or completely pre-qualify individuals for specific employment openings in the transportation sector, and actually make direct contacts between the individuals and the employers.

Similarly, as we consider the impact from recent federal reforms to welfare, UPITA™ appears to have great potential for overcoming some of the obstacles posed by the lack of public transportation and child care. Equipped with a notebook computer, dial-in capabilities and some introductory training in their use, persons can acquire training in order to secure employment, including the valued skills of using computers.

These are only some of the connections we have begun to envision; still more will emerge as we gain greater facility with technology. For the moment, it suffices that we are moving beyond what we have done and what our resources are at present and considering learning opportunities from a much more expansive perspective. Would this have happened in the absence of so large an institutional commitment to the use of information technology? Probably. Would have happened as rapidly or with as much enthusiasm? I doubt it.

The law of the hammer suggests that means become ends, that capability becomes necessity. Give a small child a hammer and everything gets hammered. In the case of information technology, there is indeed a seductive power to the capacity to store, retrieve, and distribute vast amounts of information to equally vast numbers of people. Someone observed that the World Wide Web is a vast ocean of data only to have a wag respond that there are indeed shallow seas. When even a carefully crafted search of the Internet turns up more than one million "hits," capability has probably surpassed capacity and the law of the hammer becomes an axiom.

In the case of Clayton State, technology has enabled us to imagine new and different ways of doing what we are charged to do. It also has empowered us to look beyond the cozy confines of the campus to communities, organizations, and people other than and in addition to our students. By so doing, technology in this case has helped make us a better institution.

Notes

1 Under the auspices of the Board of Regents Distinguished Teaching Professor's program, both Clayton State and Floyd College entered into an agreement that used the expertise and experience of faculty from the Institute for Academic Technology (IAT) at the University of North Carolina, Chapel Hill, and Wake Forest University for faculty support and development. Training in basic software is being provided "internally" by both institutions' continuing-education computer specialists.

About the author

Richard A. Skinner, Ph.D., is president of Clayton College & State University, a post he has held since January 1994. His previous experience was as an administrator and faculty member at Lander University (1988-1993) and Old Dominion University (1975-1988). He holds the doctorate and master's degrees in government and international studies from the University of South Carolina and the baccalaureate in political science from Georgia Southern University. Georgia Southern's Alumni Association and the faculty of the College of Liberal Arts and Social Sciences, respectively, recognized Skinner as the outstanding alumnus for 1997.

Skinner helped organize the South Carolina Curriculum Congress, a 2,000-member statewide effort to reform K-12 public education on the basis of national and international standards for student achievement and, as a result, Lander University was presented the American Association of State Colleges and Universities (AASCU) 1991 Christa McAuliffe Award for support of the teaching profession. He chaired the steering committee of the University System of Georgia, which in 1995 launched the Georgia Library Learning On-Line (GALILEO) statewide digital library in less than 150 days and will soon be linked to every public school and public library within Georgia. Most recently, he has spoken and made presentations to the American Library Association, the Economic Development Network (Ed>NET) of the California community college system, and the New Jersey Information Network.