When Wishes Come True

Colleges and the Convergence of Access, Lifelong Learning, and Technology

By Kenneth C. Green

Ours is an era marked by the convergence of two traditional Chinese greetings: *May you live in interesting times* and *Be careful what you wish for*. These wishes (or curses) are very real for those of us who live in the academy. Without question, these are interesting times. And, indeed, many of the things long wished for by campuses are now coming true.

As a result, colleges and universities across the globe confront the "convergence of conference themes." All around us we see the evidence that the wishful, if often ephemeral, themes of academic conferences of the past two decades are now, unexpectedly, part of our new reality—structural components of the emerging new world of postsecondary education. Academe's wish list, as drawn from these conference themes, is represented by the convergence of three key issues:

• *Increased access*. In both developed and developing nations, we see growing demand for access to higher education. In the United States, the proportion of recent high school graduates entering college has risen from just over half in 1980 to 67 percent today. Rising demand—coupled with rising expectations—is pushed by an escalating set of demographic, social, and economic factors. (Clifford Adelman's January/February 1999 *Change* article, "Crosscurrents and Riptides," offers a complete and compelling review of the consequences of rising access. See also Carol Frances, *Higher Education: Enrollment Trends and Staff Needs*, published by TIAA-CREF in 1998.)

• *Lifelong learning*. We, and our students, confront a future of not one job or career, but many. Growing numbers of adults—many with college degrees, many without—are coming to colleges and other postsecondary providers for new rounds of education and certification. Individuals and employers alike have come to recognize that a bachelor's degree is not the end of the educational journey but just another milestone.

• *Information technology*. Information technology is now ubiquitous, across and beyond higher education. It's not just computers, the Internet, or the Web; it's the *aggregated presence* of technologies in virtually all facets of daily life that has made the difference. Higher education's clientele—students from ages 17 to 67—now come to college expecting to learn *about* technology and also to learn *with* technology.

For the campus community, in both the United States and across the globe, *these are the things we have wished for*; now they are very much part of the new realities for higher education. *Now what do we do?*

Truth be told, despite an endless number of conference sessions, journal articles, policy documents, and strategic plans, the evidence suggests that, as an "enterprise," higher education remains mostly unprepared for the consequences of this coming convergence. We *know* we confront more younger students, more adult learners, and more technology. Yet to date, much (if not most) of the writing and planning addressing these issues seems conventional, piecemeal, even dated. Like the old generals, much of academic leadership seems to be planning for the last war, not the current one.

Academics are good at discussing issues and writing about them. But in the end, as I was told years ago on Day One of a graduate school class in public policy, implementation is the movement of cup to lip. That distance—from cup to lip—is large given the convergence issues ahead for colleges and universities.

Technology and the Organization of Academic Work

For most individuals in most academic organizations, the responsibility for addressing the *institutional* challenges of access and lifelong learning will be delegated tasks, a step removed. Some *other* office, some *other* administrator, some *other* part of the institution will ultimately be assigned to develop a strategy to address these issues.

In contrast, technology is a black box; it represents the largest unknown of the three convergence factors cited above. Moreover, for faculty, technology is clearly the most *personal*

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Illustration by Theo Rudnak

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of these issues—the one that involves us, indeed engages us, directly and individually. Technology also poses a significant challenge to the professional identities of professors—identities that we as academics and professionals have worked long and hard to develop and to sustain for our colleagues, for our students, and for ourselves.

Why the personal challenge? Technology forces us to confront a set of issues that seem mutually exclusive: the "high-touch" (almost handcrafted) traditions that have long held an esteemed (if increasingly mythical) place in academic work versus a high-tech future likely laden with a rich array of IT resources. Some among us believe the high-tech future will save higher education; others are certain it will destroy, or at least undermine, traditional experiences and relationships. In between reside the vast majority of faculty and administrators who struggle to assess the appropriate role of technology in their scholarly work, classrooms, and in institutional priorities—struggling to move the technological cup to lip.

Admittedly, many faculty have already ceded key aspects of the technology competition to their often (but not always) younger, seemingly more wired students. Many undergraduates entering college today have an envied level of comfort with the keyboard, the computer, and the Internet. But what becomes truly challenging for faculty, what raises the level of faculty discomfort and Oedipal aggression in the classroom, is when students begin to confront professors on *content*—on *what we know*. Two examples illustrate this point:

• *BusinessWeek*. In business schools across the United States, Friday can be fear day for some faculty. Why? Because *BusinessWeek* goes online, on the Web and on America Online (AOL), on Thursday evening. This means that students have access to relevant content days before faculty members receive the magazine in the mail. Given the case study method common to many B-school classes, the cover story in *BusinessWeek* might render the goal of an assigned case irrelevant—and the faculty member who teaches it embarrassingly short on current information about the company, product, or issue that is the focus of the case and seminar session.

• *E-mail*. Anecdotal stories from many campuses confirm that growing numbers of undergraduate and graduate students are using the Internet to make direct contact with the scholars whose work appears on their course syllabi. And in some instances, this means that students have approached their professors, copies of e-mail correspondence in hand, to report that "Professor Jones at Acme University says you, Professor Smith, completely misrepresented her research and the significance of her work in your summary discussion and comments in class last week."

Beyond these simple if increasingly common examples, there is the simmering concern among some faculty that technology may be a new administrative weapon that will be used against those who resist the path to the digital Grail of IT-enhanced instruction and online learning. However, IT-engaged faculty, particularly junior faculty, probably have as much to fear from their departmental colleagues as they do from hostile administrators. While few professors will enter a colleague's classroom, virtually all faculty—friend and foe alike—can review a syllabus, course materials, and research papers posted on a Web site.

Taken together, these examples confirm that technology remains a highly personal challenge for many in academe. We are increasingly encouraged (one might say cajoled) to learn about it, to use it, and to incorporate it into our instructional and scholarly portfolios. At the classroom and syllabus level, instructional integration is not a task that individual faculty can delegate to administrators or IT staff; rather, like scholarship and teaching, instructional integration ultimately begins with individual initiative and interest.

Great Aspirations

Any discussion of where academe seeks to go with technology must acknowledge the great hopes many in and around education have always had for new technologies. At the turn of the last century, Thomas Edison was certain that film would supplant books as the primary resource for instruction. Yet it was the experience of film as a propaganda and training tool during World War II—coupled with Sputnik and the subsequent New Math/New Science movement of the late 1950s—that ultimately brought film into American classrooms. Similarly, we can point to the sustained and often unfulfilled aspirations for educational television—from the first experiments in educational programming in the late 1950s to the controversial presence of Channel 1 in thousands of high schools across the United States today.

Parallel with the great expectations for the role of film and TV are the great aspirations we in education have long held for the potential role of computers. Indeed, on the basis of early experiments with what we today would describe as very primitive mainframe computers, early innovators such as Stanford's Patrick Suppes were making bold predictions about the future of computers and education:

> Both the processing and the uses of information are undergoing an unprecedented technological revolution. Not only are machines now able to deal with many kinds of information at high speed and in large quantities, but it is also possible to manipulate these quantities so as to benefit from them in new ways. This is perhaps nowhere truer than in the field of education. One can predict that in a few more years millions of schoolchildren will have access to what Philip of Macedon's son Alexander enjoyed as a royal prerogative: the services of a tutor as well-informed and as responsive as Aristotle.

With some minor editing to update the language, Suppes' assessment, offered in the pages of *Scientific American* in

October 1966—33 years ago—could easily serve as the introductory paragraph for countless conference speeches on information technology, or as the topic sentence for campus plans and position papers.

Today, fueled by more than four decades of aspirations and more than a dozen years of sustained (if often ad hoc) experimentation, information technology has finally emerged as a permanent, respected (or at least accepted), and increasingly essential component of the college experience. Walk any direction on almost college campus today and it is easy to see ample evidence of the presence of computers and information technology. Computing and information technology are finally (if slowly) moving into the mainstream of the instructional experience in many classes and on most campuses.

However, significant questions remain about the potential promise and probable limits of IT-based instruction. Faculty, administrators, technical support personnel, college trustees, state authorities, and the corporate patrons of higher education continue to wrestle with an array of questions about IT that cluster into three key issues:

- *Content.* How will information technology expand access to information and knowledge? What IT resources can or should be incorporated into teaching and curricula?
- *Delivery.* How might technology be used to enhance instruction in both traditional and nontraditional contexts, for both traditional and nontraditional learners?
- *Infrastructure.* What kind of infrastructure (hardware, software, networks, technical support, user support and training, financial planning) is required to make technology accessible, available, and effective in postsecondary education?

Moreover, against a backdrop of rising expectations and dynamic technologies, there remain significant questions about the potential (and appropriate) role of technology in collegiate instruction. Does the use of information technology bring a significant, cost-effective benefit to the educational experience and to learning outcomes? To date, the research evidence on this question is mixed.

Have we really witnessed a "computer revolution" or experienced a "technology transformation" of higher education? Clearly no! More accurately, we are participating in a steady process of evolution and change. It is still premature to talk about a technology-driven *transformation* of educational institutions because virtually all schools and colleges are still in the early stages of adopting and incorporating various kinds of IT resources into their instructional functions. And it is hyperbole to discuss a technological revolution in education, which implies a sudden and dramatic departure from past practices—practices that reflect, in part, academic traditions that are centuries old.

Yet technology, as a function and as a resource, has in fact entered the pedagogical mainstream in American colleges and universities. As of Fall 1998,

- more than two-fifths of college courses used e-mail, while fully a third of college courses drew on content from the Web;
- more than 40 percent of the nation's colleges had some sort of computer literacy or computer competency requirement;
- over 60 percent of public four-year institutions had a mandatory IT fee;
- more than three-fourths of the two- and four-year colleges had IT support centers to assist faculty with instructional integration; and
- almost half of the nation's colleges had a formal plan to use the Internet for marketing the institution to prospective students; more than half had some portion of the undergraduate application available to prospective students on the Web. (See K.C. Green, *Campus Computing,* 1998.)

These indicators notwithstanding, we need to acknowledge that information technology has yet to transform classrooms, the instructional activities of most faculty, or the learning experiences of most students. Moreover, while we know that technology changes the learning experience, we do not have hard, consistent evidence documenting that it enhances academic achievement and learning outcomes. Our willingness to learn (or admit) what we *don't* know about IT impacts and learning outcomes becomes increasingly important as technology emerges as a driving force in the discussions about campus and corporate (business) plans under development for serving lifelong learners via distance-learning programs. (See Ted Marchese, "Not-So-Distant Competitors: How New Providers Are Remaking the Postsecondary Marketplace," *AAHE Bulletin,* June 1998.)

Consequently, we can (and should) debate fundamental questions that focus on *application* (how we use the technology) and *impacts* (the difference it makes in what and how students learn). Yet this must be an *informed* debate. Unfortunately, too often this debate rages on without a historical understanding of the roads behind and of the paths ahead for higher education, and without an understanding of the coming convergence of access, lifelong learning, and technology.

The Roads Behind

American higher education is very much an organic enterprise. Its real beginning was that day more than 360 years ago when a small group of young men made their way across the Charles River from Boston to Cambridge to begin their studies at the college that would become Harvard.

Harvard soon begot other colleges, which began to dot the colonial landscape. Much like the evolution of specialized cells in an organism, the core cells split, then specialized; some even mutated in response to a changing American environment. And this growth model largely describes the American collegiate enterprise for the past 360 years. At each step along the way, new kinds of colleges, new or specialized institutions—specialized cells—have emerged as derivatives of the existing enterprise, expanding the definition, the mission, and the clientele of the educational and social institution known as the American College.

Why this abridged history lesson? Because as we approach the 21st century, we are again witnessing a significant *evolutionary* event in American higher education. This event is the emergence of *distance education* and *distributed learning*, a phenomenon fostered to a large degree by the three convergence issues cited earlier: increased access, lifelong learning, and information technology.

This is a significant event—as significant as the 19th-century birth of the land-grant colleges and the early 20th-century emergence and subsequent postwar expansion and success of community colleges.

THE INSTRUCTIONAL MISSION OF HIGHER EDUCATION

Content	Context	Certification
• Data	• Time & Place	• Course
• Information	• Campus	• Sequencing
• Knowledge	• Learning Environment	• Program
• Structure	• Resources	• Degree
• Value	• Relationships	• Skills
• Application	• Socialization	• Licensing
• Skills		• Outcomes

Land-grant institutions and community colleges were educational organizations born of new needs in a changing American society. To some degree, the land-grant institutions were accidents and experiments—a hybrid of the 18th-century English college and an American derivative of the 19th-century German research university. Similarly, community colleges were also clearly a response to specific education and training needs that emerged in American society in the middle of the present century. They were endorsed by many educational leaders and public officials at the time of their birth, similar to the official sponsorship of entities such as today's Western Governors University and California Virtual University. Yet these new forms of college each had their critics who raised questions about their quality and integrity. Does this sound familiar?

Distance learning is not new to the American college experience. Agricultural extension programs that began some 130 years ago in the early days of the American land-grant movement are the programmatic precursors of today's distance-education initiatives. Just as much of the pedagogy in today's college classrooms has changed little from the instructional practices common a century or even three centuries ago, individuals responsible for coordinating many distance-education and agricultural extension efforts 50 years ago would no doubt see much that is familiar in many of today's practices and programs. However, technology changes the instructional methodologies as well as the content, costs, and delivery of distance education.

THE INSTRUCTIONAL MISSION

Asked about the mission of higher education, college presidents often (unknowingly) cite the wisdom of Howard Bowen, an economist and true scholar of higher education and also a former college president. The mission they cite involves research and scholarship, teaching and learning, and public service. Focus on the *instructional* mission of higher education (see box, above) and three primary functions emerge: *content* (what is taught), *context* (the environment that fosters or supports instruction and learning), and *certification* (documenting outcomes).

Content, of course, is the most traditional of the instructional functions: courses and curricula expose learners to new information, to the structure and validity of knowledge in specific disciplines and fields, to methodologies linked to the generation of knowledge, and to the application of knowledge in specific settings. Traditional assessment models focus on the mastery of content: faculty routinely test students on their knowledge of accounting, chemistry, literature, or psychology.

Context reflects the instructional and experiential variables that give individual colleges and universities their distinctive character. It also includes the experiential, non-classroom aspects of college that have a profound impact on student development and outcomes. Context can be defined in many ways: the time and place of the learning experience, interactions between and among students and faculty, access to campus resources (such as libraries and computer networks) that support instruction and learning, and so on.

Context can also reflect the special mission of an institution (for example: technical, church-affiliated, single-sex). Indeed, decades of research about the impacts of college on student outcomes documents the critical impact of *contextual variables* on a wide range of outcome measures, including learning, intellectual and social development, satisfaction with the college experience, and retention and degree completion. (See, for example, Alexander W. Astin, *Four Critical Years* and *What Matters in College* [Jossey-Bass, 1978 and 1993, respectively].)

The third key instructional function, *certification*, is critical to both students and society. The structured learning sequence reflected in a course syllabus or a degree program has a certain market value based on content (engineering versus English), assessment (grades and licensing tests), and program or institutional reputations. The certification function currently remains with colleges and other credible education providers, although not without growing challenges from a new set of for-profit contenders and for-profit organizations. (See Alice Irby's article in this issue.)

Higher education typically has addressed these three instructional functions concurrently: the classroom focuses on content, the campus fosters a learning environment, and the institution certifies educational and professional accomplishment. What's so very significant today is that technology makes porous the boundaries that traditionally separated content, context, and certification. Technology brings new, rich resources to the learning of content; creates new contexts for interaction between and among instructors and learners; and can fundamentally change the way students and institutions approach assessment and certification.

All parties would do well to view distance, distributed, and online learning as a new, fourth sector of higher education, residing alongside (and not behind) research universities, residential colleges, and commuter institutions.

A careful look at the growing population of largely part-time adult learners who drive the current distance-learning market suggests that most are primarily interested in *content* and *certification*. Moreover, these (lifelong) learners want specific content, not a comprehensive offering: they need a course or two to acquire new knowledge and up-to-date skills, but not to obtain a degree (or yet another degree!).

Indeed, in distance learning we see that *convenience* has replaced *context* as a component of the educational experience. (This is clearly the mantra of the University of Phoenix.) Context, as traditionally offered as part of the college experience, has little priority in the educational aspirations or self-assessed educational needs of most adult learners.

Phoenix and Jones International (via Mind Extension University, now the College Connection), as the first national "brands" in this arena, have understood these issues better than most traditional institutions. Moreover, the for-profit companies coming into the distance- or distributed-learning market certainly understand this difference. These new, for-profit providers also understand the market disadvantages (and higher operating costs) of focusing on all three traditional instructional functions. And they recognize that there is significant money to be made in unbundled educational services like content (only) or certification (only).

Fear and Trembling vs. Market Segmentation

What lies ahead for higher education? An extreme view of our future is offered by management sage Peter Drucker, who believes that "universities won't survive...higher education is in deep crisis. Already we are beginning to deliver more lectures and classes off-campus via satellite or two-way video at a fraction of the cost [of traditional courses]. The college won't survive as a residential institution. Today's [campus] buildings are hopelessly unsuited and totally unneeded" ("Still the Youngest Mind: An Interview with Peter Drucker," *Forbes*, March 10, 1997).

Just as Mark Twain once announced that reports of his death were premature, so too is it premature—even for Peter Drucker—to announce the coming demise of residential colleges, let alone of "traditional" higher education, as entities about to be swept under by the *tsunami* of online learning.

The recent history of American higher education is littered with similar predictions. At the beginning of the 1980s, there was fear and trembling across the land that the coming decline in the size of the traditional college-age population—the baby bust—would cause an enrollment crisis for most institutions and force several hundred to close. Yet campuses adapted to change. Between 1980 and 1996, the college matriculation rate for high school graduates rose from just over half to almost two-thirds of the graduating class. College enrollments, fueled in part by rising adult enrollments, grew from 12 to 15 million during this period. The number of accredited colleges and universities rose from 3,000 in 1980 to more than 3,500 by 1996.

The history of American colleges and universities—especially over the past 20 years—tells us that the growing demand for higher education has contributed to further *segmentation* in the system of higher education. Yet even with the growth and segmentation, it is somewhat striking that many in the campus community assume that traditional higher education should "own" the market as it continues to expand.

The college aspirations and educational expectations of 18-year-old high school graduates clearly are *not* the same as those of the rising numbers of older students—lifelong learners—who have other identities linked to their full-time roles as parents and providers, as adults and employees (or employers). Some segments of the educational enterprise, such as community colleges, have served this segment of our clientele very well. But no segment of higher education—public or private, non-profit or proprietary—should assume entitlement in the market. Moreover, those who throw stones at new entrants by raising questions about quality, rigor, and integrity would do well to examine their own programs and practices before judging others.

Indeed, all parties would do well to view distance, distributed, and online learning as a new, fourth sector of higher education, residing alongside (and not behind) research universities, residential colleges, and commuter institutions. The boundaries that separate the sectors and their respective clientele are increasingly porous. Growing numbers of institutions firmly planted in one sector now serve (and indeed recruit!) students from other sectors: universities pursue part-time adult learners, while community colleges develop honors programs to serve the growing numbers of middle- and upper-ability, middle- and upper-income students who matriculate directly from high school.

With perfect hindsight, Howard Bowen's 1974 projections anticipating some 20 million college students by 2010—once summarily dismissed by most of the academic community—now seem right on target. (See.H.R. Bowen, "Higher Education: A Growth Industry?" *Educational Record*, Summer 1974.) Increased access, lifelong learning, and information technology are converging on American colleges and universities in ways that go well beyond the aspirations articulated in hundreds of conference speeches over the past three decades. The American postsecondary enterprise continues to evolve, changing slowly at the traditional center and faster on the perimeter.

As American higher education enters the 21st century, we who work in and around academe should remember that we do live in interesting times. And we should indeed be careful about what we wish for, as such things sometimes come to pass, ultimately confronting us with the question, Now what do we do?

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