

# OF ICEBERGS, SHIPS, & ARROGANT CAPTAINS

By Peter Smith



**T**hose of us in American higher education are quick to label ourselves “the best ever.” And in many ways, our achievements to date are just that: consider the community college movement, the research power in our land-grant and major private institutions, and the continuing commitment to access and quality that we all support. But the hard truth is that while we are sailing on what appears to be smooth waters, we aren’t noticing the icebergs dead ahead. The current record of higher education simply is not good enough for the world we live in today. We need to be more successful with more students to create the middle class of America’s future.

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Information technology lies at the heart of this challenge. Arguments that question the value of IT to the academy or that lowball the opportunity costs of failing to harness technology to its full potential in higher education both reflect and fuel an arrogant, confident complacency that ignores the underlying dangers. The United States is headed for social, civic, and economic disaster if we are not successful in graduating a far higher percentage of our population (from high schools as well as colleges/universities) while bringing working Americans back to finish their degrees. We are failing to educate large numbers of students (of all ages) successfully because we are employing an out-of-date educational model that ignores the available knowledge and IT resources. The historic “industrial model” simply won’t make the grade in the twenty-first century.

Consider the following three issues:

1. *Current “success” rates are confusing, misleading, and misunderstood.* Race and income are still directly linked to success in higher education. Despite efforts to level the playing field while maintaining standards, American higher education continues to work disproportionately well for people who are Anglo and in the upper one-

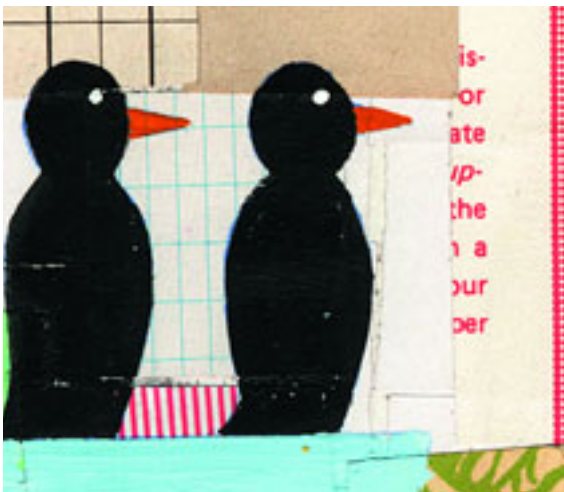
third of the country’s income distribution. This is not news, but as a policy matter, it needs repeating. If a family is not in the upper 40 percent of income distribution and is a family of color (other than Asian-American), prospects for success in college to the BA level are severely limited. In fact, fewer than 20 percent of ninth-graders earn their associate’s or bachelor’s degrees within ten years.<sup>1</sup> Plus, over 80 percent of school population growth is projected to occur in the very income and ethnic sectors in which we are falling short.<sup>2</sup> As a result of the current distribution of ethnicity and income, the United States will continue to have slightly improving success rates nationally for several more years as a greater number of Anglo students from the top 40 percent of the U.S. economic structure succeed in school. But if we fail to reach and succeed with the students from the lower 60 percent, we will be sowing the seeds for a larger failure within the reported success. Like icebergs hiding under the water’s surface, our failure within the success will rip away our social, civic, and economic infrastructure.

2. *Schools stifle learning.* The U.S. higher education establishment largely ignores existing knowledge about how people learn best. We continue to substitute the traditional model of education for an informed, professionally based educational process. Our actions say that we are committed to a specific version of how to do business—a version that is uninformed, structurally and professionally, by current research. As a result, millions of people (of *all* incomes and races) fail to thrive in schools, not be-

cause they lack the capacity to learn but because colleges and universities lack the capacity to educate. We ignore the science of learning, asking students and workers to “tough it out”—to succeed or fail—based on their sheer will and effort. This attitude is as outrageous as it is unnecessary.

3. *Technology is part of the solution.* Technology is transforming the capacity to support high-level learning anywhere, anytime, and for anyone. The traditional academic model is based on outdated assumptions about the use of time, space, and responsibility. Technology changes all that, permitting radically different uses of time and space and different allocations of responsibility, allowing for deeper and better learning for many more people. Technology can change not only the way we “instruct” but also the way we manage and support teaching and learning.

Different higher education institutions recruit different students, serve different audiences, and teach different programs, but they generally do so through the same basic model: with a scholar-professor standing in front of the students, isolated from the world, organizing classes into standard blocks of time with a central text or syllabus that will fill a three-credit course with papers, exams, and grades. The sameness of teaching methods from one campus to another is staggering. We expect the same thing from all students: to come as they are, to be ready to learn, to absorb the teaching, to prove they learned it, and to go on to a higher level for more of the same. Although technology has certainly modified many course structures, the course design continues to treat all students largely the same when it comes to teaching. The cost of technology is treated as an “add-on,” not as an investment in transformation.



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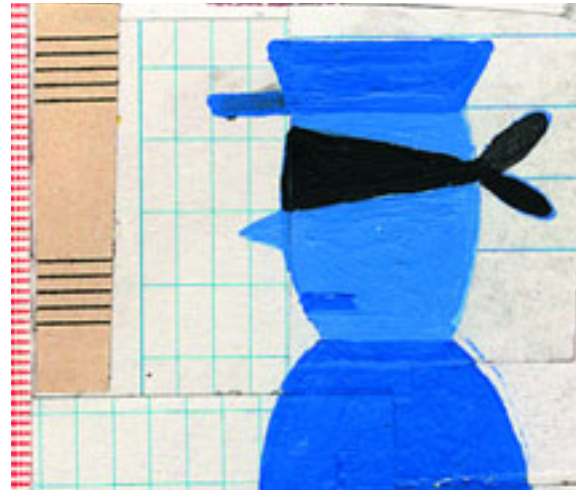
This sameness would have as a parallel hundreds of restaurants, each claiming to be unique but all serving one dish: white rice. Some might serve fried white rice; some might offer steamed white rice with saffron; and some might even cook white rice as part of a fricassee dish. But it's all white rice. Similarly, no matter where you go, which campus you visit, which students you interview, the assumptions behind teaching and learning are unchanged. At Yale and in Yakima, backpack-wearing students absorb information from someone wiser, regurgitate that information to the wiser person's satisfaction, receive grades, and move on to sit in more classes and again absorb information from someone wiser. Colleges and universities have frequently proven Peter Drucker's claim that these institutions are "designed for continuity" and are, therefore, resistant to change. "Change for the traditional institution is, to speak, a contradiction in terms."<sup>3</sup>

Historically, higher education has controlled its world by controlling its workforce, its curriculum content, and its certification/reward structure. But this de facto structural monopoly of authority and responsibility has been shattered as new types of institutions hire new kinds of faculty, offer new academic models and degree programs in the workplace and on personal time, and harness new technologies to supplement and support learning anytime, anyplace.

Technology is transforming how we communicate and think. Our younger generations are growing up immersed in a visual experience that is changing how they think and how they experience the world. They have grown up reading computer screens, searching the Web through hot links, playing computer games, and learning how to think visually, logically, and analytically. These generations have a different sense of themselves, their power, and their ability to interact with each other and the world.

We have the capacity to "can" the traditional curriculum, to be sure. But technology also gives us the tools to let students with similar academic or curricular interests converse with and learn from each other as they do their work. And heretofore unimagined design flexibility allows both institutions and learners to break through to improved teaching and learning through better alignment of learning style, intelligence, and pedagogy. We have the capacity, today, to redefine our use of time, space, and responsibility in a world in which anyone can learn anytime and anyplace.

We begin this effort, however, with a relative disadvantage. The much-discussed digital divide is sectoral as well as social and economic. And colleges and universities are, all too often, on the far side of the divide. For example, Professional Golf Association (PGA) tournaments give scorers on the course a hand-held device (a PDA) to transmit players' scores, hole by hole, to an electronic master on the tournament Web site. As a result, golf fans from the Philippines to Phoenix simultaneously know the status and position of every player. Meanwhile, college and university teachers don't know the latest information about the students sitting in front of them. They suffocate under paperwork burdens, ranging from students' records to evaluations and special reports, all supported by manual filing systems "just down the hall." Researching new curriculum ideas or accessing new teaching techniques is almost always put off to another day. And the students, who could easily make the PDAs work at the PGA golf tournaments, all too often learn in ways that Arnold



Palmer did when he was in college more than fifty years ago.

Imagine if teachers could save thousands of hours in record-keeping time and could devote those hours instead to learning activities. Technology has already made this possible. Imagine if every learner in a school was assessed to determine how she or he learns best and if the results—a "learning profile"—traveled with the learner so that each teacher could match pedagogy and curriculum to the learner. Technology has already made this possible. Imagine if teachers and students alike could dive deep into the Internet through multiple hotlinks to find instantaneous, vital information and to make real-life, constant applications of learning. Technology has already made this possible.

An example is California State University, Monterey Bay (CSUMB), which operates in a wireless environment, requiring technological literacy in its General Education program (<http://www.csUMB.edu/ge>). With an outcomes-based curriculum, learners have to demonstrate that they not only can use information technology but also understand how and why the technology works, before proceeding to upper-division work in their major area of study. As part of the University Learning Requirements—the

outcomes for the General Education program—every lower-division student has to demonstrate technological literacy before advancing to the upper-division program. The key component to this requirement is either an assessment course, which allows students to successfully demonstrate their capacity without taking the course, or a core course, Tech Tools, which is available online or in a class-based/laboratory format. Why is technological literacy a requirement? Because CSUMB believes that not having that capability will be equivalent to not knowing how to read and write.

In the learning age, successful colleges and universities will be those that are effective at partnering with other, community-based institutions, including employers. The workplace will be seen as an important laboratory for learning, with actual, paid-for work at the core of the curriculum. In this conception, the community itself is a learning center—filled with authentic learning assets from which students take lessons in every imaginable field including sociology, economics, communication, and criminal justice. Colleges and universities will increasingly draw on their learners' knowledge and experience as assets. And the Web will serve as a tool available to support learning 24/7/365, enabling hi-tech, hi-teach, life-long learning.

California State University (CSU) recently entered just such a partnership. Over 15 percent of California's teachers are "provisionally" certified. In plain terms, this means they are teaching without a certificate and are not qualified for this most important of all professions. Still, they are in the schools, usually with the highest-need students, and are teaching every day. Since part of the CSU mission is to assist in the improvement of K-12 education, CSU analyzed this situation and decided several things:

- The problem was not going away. De-

spite all that was being done to train new teachers, the state would not be able, using traditional methods, to staff its classrooms with a fully qualified teacher for every child.

- These marginally prepared teachers were not coming to the available programs for further professional training and development as the law required.
- These teachers were becoming a permanent fixture in California's classrooms.
- Each of these teachers, though not fully trained, had made a commitment to the children and the profession: they were in the classrooms already.

Unlike some corporate employers, CSU could not solve the problem with visas, lobbyists, or imported resources. There was neither the time nor the money to remove people from the workplace and "send them back to school" in the traditional ways. These teachers could not afford to leave work for school. So CSU created a technologically supported teaching-credential program that uses their workplace and work experience as the core of the curriculum. The program, CalStateTEACH, is a customized training program that has moved away from the traditional "one size fits all" model for teacher preparation (<http://www.calstateteach.net>).

Each teacher's daily work organizer—the lesson plan—became the reference point for the curriculum. Enrolled teacher-students were asked to link their ongoing lesson planning and teaching to the state standards that their students needed to meet and also to the best-known teaching practices. With technological support, the program created access to

the necessary information and also put the students in touch with each other to discuss problems and issues through chat rooms. At the same time, teachers have electronic access to an expert mentor, and they receive regular observation in their classrooms. Learning is individualized and is directly connected to the work that they do every day.

CalStateTEACH is built on individual learners' needs matched to resources present in the community. The program itself emerged because learners and employers, policy-makers, and business and political leaders demanded that "their" colleges become learner-friendly, use existing technologies, and focus less on traditional teaching methodology and more on effective learning strategies. Learning standards were certainly not lowered; most likely, they were raised. And again, this was done by leaving behind the "one size fits all" pedagogical concept. The teacher-students were not herded into a lecture hall to have information dispensed to them. On the contrary, what the teacher-students already knew and were doing served as the basis for continued learning. CalStateTEACH is a workplace-based, Web-supported, professional education program that converts time and work into learning. It has higher-quality



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ratings than do campus-based, traditional programs. The major complaint is that the program is too rigorous.<sup>4</sup>

CalStateTEACH reflects a willingness to “unbundle” the traditional functions of the teaching and learning process and reform them into new patterns of delivery. For a moment, think of teaching and learning as a bundle of tasks that teachers have traditionally performed. Teachers prepare the curriculum and deliver it. They keep attendance. They review, assess, grade, and report on students’ work. They talk with learners, more often than not in groups (in classes); they ask how students are doing. They perform research, develop new knowledge, and integrate their findings into their teaching.

Technology turns this model inside out. Successful technologically supported models take the elements of teaching and learning and “rebundle” them, organizing them differently. A curriculum is still provided, but it is not housed solely in books and a syllabus. Information is still delivered to the learner, but it does not all come from one person,

one voice, in one place, and at the same time every week. Learning is frequently initiated by the learners, who are seeking knowledge about what’s happening around them; and the information that learners seek is immediately applied to their situation. Evaluations are still done—but more thoroughly, because computing power is greater than grading power. Reporting is still done—but more completely, because computing makes possible faster, deeper, more individualized accountability. The work of guided, higher-level learning is being done because the key elements of learning have been rebundled in ways that capitalize on a greater knowledge of how people learn and on a greater use of computing power.

A good example of a primary resource for teachers and learners who want to rebundle the curriculum and gain the support of technology is MERLOT, the Multimedia Educational Resource for Learning and Online Teaching (<http://www.merlot.org>). Created initially by educators who wanted to collaborate in order to evaluate and disseminate online

curricula, MERLOT is a dynamic repository of curricular materials, complete with evaluations and comments by those who have used it. Available to any faculty member or learner who wants to become a member, MERLOT has evolved into an internationally accepted online resource.

The users of MERLOT write the descriptions of the learning materials, the learning assignments, the peer reviews, and the member profiles, following Web-based forms. To contribute materials to the MERLOT collection, the user must become a MERLOT member, which is free and easy to do. MERLOT has also created discipline-based editorial boards whose responsibility includes expanding, organizing, reviewing, and generally managing the collection of learning materials and support resources. Each year, the MERLOT project plans to add editorial boards in new discipline areas.

MERLOT conducts peer review of online learning materials, a process that will help ensure that learning materials within the MERLOT collection address significant theoretical or research issues

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and are contextually accurate, pedagogically sound, and technically easy to use. MERLOT has modeled its peer reviews on the discipline-based peer review of scholarship and research. MERLOT's peer-review process also provides a mechanism for professional recognition for faculty who are developing and using instructional technology. MERLOT has a second, parallel review process that complements the formal peer reviews: individual MERLOT members can provide their observations and evaluations on the learning materials within MERLOT.

MERLOT has also created Discipline Communities as subsets of the MERLOT collection. Searching and browsing within these communities will return results relating only to that discipline. These communities represent the subject areas in which the MERLOT editorial boards conduct peer review of materials. MERLOT has also recently created Special Interest Communities, such as CATS (Community of Academic Technology Staff). CATS focuses on sharing tools, methods, and expertise among academic computing support staff.

The rapidly expanding technological capacity allows higher education, today, to do an infinitely more individualized job of educating. It gives educators far greater

control, with significantly increased flexibility, to interpret traditional uses of time, space, and responsibility in order to deliver learning services more effectively to new populations while employing new knowledge about learning. But tapping into this new capacity will require a rethinking of the enterprise of higher education, including the economics and the structure of college and universities.

Combining the extraordinary capacity of technology with the convergence of demographic forces and the new knowledge about learning creates uncommon synergy. Even as we discuss and analyze the impact, these forces are transforming the U.S. educational landscape by creating a new learning ethos. Our continuing error, however, has been to consider them separately, ignoring their synergy. These are not autonomous issues. We cannot separate a student's cultural background, intelligence profile, and aspirations from the value of technology or from how the student learns because those elements do not operate independently in people's lives. Taken together, the strands make up a thread woven through our society, redefining the ethos of learning and higher education in the United States.

*Synergy*, a biological term, is defined as "the action of two or more substances, organs, or organisms, to achieve an effect of which each is individually incapable." By itself, technology cannot save us. Considered in a vacuum, new learning models for organizations and individuals might not dramatically improve the impact of higher education. But if we understand and anticipate the synergy of the social, technological, economic, and political forces at work around us, *employing them*

*together*, we will be able to achieve what cannot be done by employing any of these forces alone.

As we look ahead to the year 2020, those of us in higher education must get over the conceit that traditional institutions, organizational structures, and services will continue to control the future development of higher education. The synergy generated by the emerging forces is not controlled by institutions—it is embedded in the surrounding communities, outside the institutional walls. In twenty years, the educational mainstream is going to look very different from the way it looks today. Programs, practices, and services that operate on the margins of higher education today—or that have not even been invented—will migrate to the center. The new mainstream will redefine the current scope of responsibility and authority in higher education, including other locations like the workplace, the home, the learning cooperative, and the community as equal partners in the learning society of the future. And the new mainstream will no longer allocate the sole authority and responsibility for teaching and learning to campuses. Learning, its validation, and its support will be shared far beyond today's conception of the campus.

By 2025, we will have invented, tested, and proven the organizational and educational effectiveness of myriad new practices and services. And quality assurance will have moved beyond the accreditation practices of the 1990s, found to be so out-of-sync with the emerging field of practice. The new mainstream will be populated with an innovative array of institutional services. Learners will be moving around, in and out of college courses and in and out of work situations, gaining experience, knowledge, and skills from life, from courses, and from work. But they will need to collect that learning, have it assessed and valued, and put it to work. They will need to create the

coherence that, historically, the college/university provided and then reported on in its transcript. They will need an assessment-based “mobile transcript,” a learning passport that travels with the student and reflects the learning done. Like the turtle with its house on its back, each learner/worker will carry a mobile transcript, which will validate experience, knowledge, skills, ability, and competence—for employers as well as for colleges and universities.

Consider the *Titanic* as a metaphor. It’s a dramatic image, maybe a little much, but I think it fits. What is the greatest single problem associated with the *Titanic*? An arrogant captain? The iceberg? A longer view suggests that even if the *Titanic* had survived its maiden voyage, the ship was doomed. The iceberg, the captain, and the disaster only confused the situation. The real problem facing the greatest cruise ship ever built was the airplane. The seeds of destruction for the ocean-travel industry had been sown nearly a decade earlier, in Kitty Hawk. Cruise ships could not compete, and at-

tempts to make them competitive ultimately failed.

As a college president, perhaps I face the risks of an arrogant captain. We in the United States have the greatest higher education system ever developed. People travel from around the world to attend our colleges and universities. And the annual scramble to get into our top institutions is becoming ever more contentious. Economic and social icebergs challenge our course. We must anticipate them, and we must navigate dexterously to survive. But the icebergs we face aren’t our long-term problem. The greater risk is that the potential of our ships, because of their basic design, is limited and therefore fundamentally outmoded. Our colleges and universities are being eclipsed by new need, new knowledge, and new capacity. *e*

#### Notes

1. Tom Mortenson, ACT Institutional Survey, NCES-IPEDS Graduation Rate Survey, (2000) <<http://www.higheredinfo.org/dbrowser/index.php?measure=72>> (accessed March 15, 2004).
2. Anthony Carnevale and Richard Fry, *The Demo-*

*graphic Window of Opportunity* (Washington, D.C.: Advisory Committee on Student Financial Assistance, 2003).

3. Peter F. Drucker, *Management Challenges for the 21st Century* (New York: Harper Business, 1999).
4. California State University, “Systemwide Evaluation of Teacher Education Programs,” Long Beach, Calif., October 2002 <[http://www.calstate.edu/TeacherEd/ExecutiveSummary\\_EvaluationPt2.pdf](http://www.calstate.edu/TeacherEd/ExecutiveSummary_EvaluationPt2.pdf)> (accessed March 15, 2004).

## RELATED RESOURCE



To help institutions benchmark, plan for, and make decisions about information technology, the EDUCAUSE Core Data Service (<http://www.educause.edu/coredata/>) supplies comparison data about campus IT environments. Providing more details, the EDUCAUSE Effective Practices and Solutions database (<http://www.educause.edu/ep/>) is a dynamically searchable repository of IT practices and solutions that are in place and working on campuses throughout the world.