JOSÉ ANTONIO BOWEN

TEACHING NAKED

How **Moving Technology** Out of Your College Classroom Will **Improve Student Learning**

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Preface

The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, so we must think anew and act anew. We must disenthrall ourselves, and then we shall save our country.

Abraham Lincoln

The future of higher education is deeply intertwined with new technologies. Technology has changed students and professors, how we access knowledge, the nature of community, the habits of learning, our understanding of patience, and virtually everything about education. It has also created an expanding global market for online learning that will continue to increase in quality, efficiency, and flexibility. Considering these changes, the value of a bricks-and-mortar university will remain in its face-to-face (i.e., naked) interaction between faculty and students. As the traditional model of college is challenged by changes in demographics and college preparation, for-profit institutions, hybrid class schedules with night and weekend meetings, free online learning, and even free certificates from the best traditional brands, it is widely predicted that there will be fewer students enrolled in expensive, inflexible, full-time, four-year degrees (Van Der Werf & Sabatier,

2009). If we want campus education to survive, then we need to focus on the experience of direct physical interaction in higher education and make it worth the extra money it will always cost to deliver.

We know from Alexander Astin's *What Matters in College: Four Critical Years Revisited* (1993) that student engagement and faculty–student interaction matter most in student learning. At the heart of *Teaching Naked* is the seeming paradox that technology can be harnessed to enhance the widely desired goals of increased student engagement and faculty–student interaction but that it is most powerfully used *outside* of class as a way to increase naked, nontechnological interaction with students *inside* the classroom. This book addresses the why and how of this paradox and provides specific guidance for faculty and administrators on how to leverage both technology and face-to-face classes to improve student learning and ensure the survival of the bricks-and-mortar university. Thus, the aim of this book is to connect the practical questions of immediate interest to professors with the larger managerial and policy challenges facing administrators.

The Tyranny of Common Sense

Abraham Lincoln argued against the tyranny of common sense, the invisible belief system that limits our imagination by mandating obvious and singular ways to do things. It is their "commonness" that makes these assumptions and attitudes transparent and therefore so dangerous.

Common sense tells academics that our students are learning *because* of what we do in the classroom. But it is a common misconception that *everything* that successful people do contributes to their success. A teacher might be successful because he is excellent at explaining complex problems in a simple manner, but after a few teaching awards it is easy to start believing that the soft

voice and the no-late-work policy also contribute to his success, when in fact changing both of those tactics might make him even better. Since common sense tells him that he deserves his success, it is hard to convince him to change. Similarly, American education has been incredibly successful, but not everything we do has contributed to that success.

We were all taught with lectures, and we all give them despite a mountain of evidence showing that they are poor transmitters of content and even worse tools for learning. When our students learn, we attribute their learning to our current methods. We persist because common sense tells us that lecturing is working. But any analysis of how we might improve student learning has to start with the dissection of everything we currently do.

In America, for example, there is a deeply held assumption about modularity in the liberal arts. We believe that the order in which students take courses is only slightly important. We encourage students to take a majority of their general education courses in the first two years, but in reality we routinely mix seniors and freshmen in the same course and then do not expect more from the seniors in our grading. For the British, and most other academics around the world, this "common-sense" approach is nonsense that can only be justified by some economic necessity. A sequential curriculum is routine in most other countries: first-year students must master rudimentary skills before they move on to higher levels of thinking and analysis. Americans can see the logic of Bloom's taxonomy (Bloom, 1956, rev. Anderson & Krathwohl, 2001) that progresses from remembering and understanding to applying, analyzing, evaluating, and creating; even so, most American general education curricula are structured around content and continue to allow students to acquire that content in almost any order. Most college major curricula contain a modicum of progression, with "gateway" and "capstone" courses. However, few American institutions expect or assess integration of learning outcomes between general education and the major, so

we have no idea if our modular curriculum structure is working or is just an old form of "common sense."

We believe that a liberal arts education works, but there is little evidence to support this contention and lots of evidence that we could be doing better. In *Academically Adrift*, Arum and Roksa (2011) conclude that the first three semesters of a college education have "a barely noticeable impact on students' skills in critical thinking, complex reasoning and writing" (p. 35). Of 2,300 students at 24 institutions, 45% showed no statistically significant improvement in these skills during the first year and a half of college. The Wabash National Study of Liberal Arts Education led by Charles Blaich confirms that while a majority of students show moderate improvement in some thinking skills, more than a third demonstrate a *decline* in these same areas. The majority of seniors actually graduate with *less* academic motivation and openness to diversity than when they started (Blaich & Wise, 2011).

We won't really know what works and how to do better until we embrace a culture of integrated assessment. Everyone in higher education is aware of the pressures for assessment. Like all human beings, faculty do not like being told what to do, especially by people from other professions who do not really understand the nuances of what faculty do. Nevertheless, until we embrace a culture of assessment, we will not know if anything we are doing is working.

Improving student learning requires articulating learning outcomes, collecting data, and embracing a feedback loop that uses results to inform change. Blaich and Wise (2011) also found that of the 19 institutions that participated in the initial 2006 Wabash study, nearly 40% had not communicated the findings to their campuses by 2011 and only 25% had tried to make any improvements as a result. Another characteristic of common sense (and a difficulty implicit in any significant learning) is that, when we are confronted with new data or ideas that might fundamentally challenge

our core beliefs, if we can make no sense of them, we ignore them; if we have only round holes, we simply abandon the square pegs.

One challenge to common sense is to reconsider how and where to best use technology. I've chosen to focus on technology for four reasons. First, it is obvious and unstoppable. Our students arrive with laptops and iPads and want to know how they will be used in their education. No one would move to Spain and expect to teach only in English; we need to understand the language, habits, and assumptions of our students. Second, technology is driving the new global market; higher education's competition is now a flat screen. Third, technology has radically altered the availability of knowledge and thus changes the content delivery part of what universities were created to do. Our response should be to focus on core liberal arts skills—critical thinking, complex reasoning, and writing—but we need to understand how the importance and application of these skills are enhanced by changes in technology. Fourth, technology has shifted the nature of the classroom. Learning now happens in more mobile, customized, and varied ways. We need to consider how we can advance student learning by thinking equally about learning environments inside and outside the classroom.

Dual Audiences

This book is written for dual audiences—higher education faculty and administrators—with the dual purpose of illuminating both the why and the how of our technological and pedagogical future. It is crucial that both teachers and the administrators who support them understand the changes that technology is bringing and what practical steps are necessary to prepare.

Faculty need strategies for integrating technology. Therefore, this book contains practical resources and ideas for motivating students to engage with course content outside of class, thereby expanding the quantity and quality of interaction in class. Faculty

will find many examples of "implementation," from expanding your repertoire of technological tools with Twitter and podcasts to using technology to facilitate more traditional pedagogies such as writing and active learning and even to make office hours easier.

Technology, however, is a means to an end. *Technology is a technique, not a strategy*. Strategies for learning have been the subject of exhaustive research, and new technology will not (at least not immediately) alter the way brains function and human beings learn. My goal, therefore, is to show how new technologies can support and enhance best practices in pedagogy. The principles of course design will not change, but technology creates many new ways to motivate student interaction with content and gives both students and faculty more control over the sequence of interactions.

Administrators who support faculty will find discussions of policy and administrative challenges resulting from the increasing quality and decreasing cost of online education. Increasing the value of bricks-and-mortar education will require more investment in student and faculty technology, different schedules and sizes of rooms, alternative pricing structures, new classroom furniture, and perhaps different definitions of faculty work and even different sorts of teachers.

Faculty are a heterogeneous group with a wide variety of talents; using this variety requires a flexible administration. Faculty who are comfortable with technology will find ideas for moving that technology out of the classroom or using it to increase interaction with students. Other faculty have been teaching naked all along but perhaps without knowing how to use technology to help students engage with content outside of the classroom. For both sets of faculty, this book will provide new ways to enhance current strategies. Not every faculty member will willingly embrace technology, but adopting such a position will make engaging 21st-century students increasing difficult. There are also many easy points of entry to this new world.

A wide array of new technology is available—some of it easy for faculty and cheap for administrators but others requiring more time, expertise, and money. I will emphasize the easiest and cheapest options for engaging students through technology first, but the point of this book is to make faculty and administrators aware of the range of available choices so they can select a practical mix that is appropriate for their situation, always keeping in mind that the goal is to enhance learning. Both faculty and administrators need to understand the arguments for and against using new technologies and the practical implications of going ahead or doing nothing.

Outline and Structure

Part One describes the new digital landscape in three chapters outlining the major changes—in technology and in students—with significant implications for education. Chapter One describes how the explosion of e-learning options is altering the marketplace for higher education. In Chapter Two, it becomes clear that today's college students consider physical proximity unnecessary for social networking, enjoyment (even sex), and, most importantly for our purposes, learning. Chapter Three describes how, with their ability to customize the challenge for the user, games have become the model learning environment and can teach us a great deal about the importance of customization in course design.

Part Two, the pedagogical heart of the book, contains five chapters that guide faculty through the design of courses that use technology outside of class to prepare students for face-to-face classroom interaction. Our most precious (and expensive) asset is student-faculty interaction, and "naked" pedagogy is an attempt to use technology in a new way to maximize deep learning. Chapter Four summarizes current research in the brain, learning, and course design and demonstrates that the courses with

the most long-term effect create a sequence of learning experiences, involving both technology and classroom interaction, that changes the way students think. Chapter Five suggests practical ways to use the multiple formats and vast knowledge available on the Internet to replace the lecture as a point of first contact with course material. Chapter Six then discusses how to use e-communication and social networks to engage students with new assignments and constant learning. Chapter Seven makes the case that rethinking the processes and nature of assessment not only frees up class time but also motivates preparation for more transformative learning in class. With prepared students, Chapter Eight demonstrates how we can make our naked classrooms into interactive exploration spaces. The focus of Part Two is on practical advice for making both the online and live classroom experiences richer and better for all students.

Part Three turns to the institutional changes necessary to support these new course designs and to ensure that there is enough learning at our physical institutions to guarantee their survival against newer and more innovative competition. In Chapter Nine, the lessons of other intellectual property industries (music, books, and journalism) provide a framework for thinking about how technology may change not only the delivery of your product but also its very nature. The focus in Chapter Ten is on faculty, curriculum, and how we can motivate more innovation and more learning. Chapter Eleven considers the campus infrastructure: What is the difference between the product and the packaging for a university? How can face-to-face education be made worth its additional cost? What are the implications of naked teaching for the design and allocation of space and schedules?

Our product is learning, but its context has changed. Before the Internet, when knowledge was both rare and localized, universities could change lives simply by opening the doors of knowledge. Now that information is free and always available on students' phones, they need thinking and analytical skills more

than ever. To survive in the digital world, universities will need to convince students and parents of three things: (1) learning takes place when students and faculty interact in classrooms; (2) this learning is different from the learning that happens when you learn on your phone; and (3) this learning is worth the massive expense of a face-to-face education. Technology makes it possible to improve learning in classrooms, but it is most effective when it is designed into out-of-class experiences and *removed* from classrooms. This book presents a new way to think about the relationships among higher education, learning, and technology.

Acknowledgments

Like most faculty, I have not been trained in pedagogy. I am, therefore, extremely grateful to all of my friends and colleagues who have supported my learning curve in a new field. Within my discipline, I've received tremendous support from the Musicology Pedagogy Study Group of the American Musicology Society (AMS), which has finally brought pedagogy to the table in our national society. Matt Baumer, Matthew Balensuela, Jocylen Neal, Jessie Fillerup, Mary Natvig, Mark Clague, and the rest of my AMS colleagues have taught me a great deal about teaching. Chapters Four and Six adapt some of the material from Bowen (2011), which Jessie especially encouraged me to write.

At Stanford University and the University of Southampton (England), I had chairs, friends, teachers, and colleagues who were ideal role models and also supported my teaching experimentation. At Georgetown University, I met Randy Bass, who introduced me to a real scholarship of pedagogy and who also supported the development of new technology in my teaching. I also had fantastic classroom role models and amazing teachers in Patrick Warfield, Anthony del Donna, and Robynn Stilwell. At Miami University I met Glenn Platt, who introduced me to the "inverted classroom," and Britt Carr, who, along with his

wonderful team of visionary course designers and technology people, transformed my teaching. They helped me design and execute my first learning games in 2003.

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About the Author

José Antonio Bowen is Algur H. Meadows Chair and dean of the Meadows School of the Arts at Southern Methodist University. Bowen has taught at Stanford, Georgetown, Miami Universities, and the University of Southampton, England.

He has written over 100 scholarly articles, edited the *Cambridge Companion to Conducting* (2003), received a National Endowment for the Humanities (NEH) Fellowship, and contributed to *Discover Jazz* (Pearson, 2011). He is an editor of the 6-CD set, *Jazz: The Smithsonian Anthology* (2011).

He has appeared in Europe, Africa, the Middle East, and the United States with Stan Getz, Dizzy Gillespie, Bobby McFerrin, Dave Brubeck, Liberace, and many others. He has written a symphony (nominated for the Pulitzer Prize in Music in 1985), a film score, and music for Hubert Laws, Jerry Garcia, and many others.

He is currently on the editorial board for *Jazz Research Journal*, the *Journal of the Society for American Music*, the *Journal of Music History Pedagogy*, and *Per Musi: Revista Acadêmica de Música*. He is a founding board member of the National Recording Preservation Board for the Library of Congress and a Fellow of the Royal Society of Arts (FRSA) in England.

Bowen has been featured in the *Wall Street Journal*, *Newsweek*, *USA Today*, *US News & World Report*, and on NPR.

Bowen has also been a pioneer in active learning and the use of technology in higher education, including podcasts and online games <http://www.josebowen.com>, and has been honored by students and colleagues for his teaching at SMU, Miami, Georgetown and at Stanford, where he won a Centennial Award for Undergraduate Teaching in 1990.

Part I

The New Digital Landscape

1

The Flat Classroom and Global Competition

The new classroom is a flat screen. The leading edge of a transformation in learning through technology can be seen in corporate learning, military training, distance learning, K–12 education, and a plethora of medical, legal, governmental, and other certifications. In 2009, 29.3% of college students were taking at least one online course, up from 21.6% in fall 2007 (Allen & Seaman, 2010). New technology offers new learning environments, expanded potential for environmental and social good, and economies of scale. E-learning is the experience and expectation of our entering students, and it will continue to compete with traditional universities for eyeballs as well as dollars.

At the same time, higher education remains one of the few industries where the price, even though increasingly out of range for many consumers, fails to cover the true cost of delivering the product. A new for-profit sector has removed much of the "overhead" of traditional universities, and is delivering learning more cheaply. In higher education, the pricing gap between cheap and expensive products is colossal, yet there is little evidence that the price difference even remotely reflects the quality of learning. While a handful of elite universities will remain able to charge elite prices because of their brand equity, history, alumni networks, high demand, and limited supply, the vast majority of American universities are about to face a perfect storm of new global technological competition that will put even more pressure and scrutiny on tuition prices. In a reversal of recent trends,

a likely outcome is a reduction in both what it costs to deliver a quality education and what people are willing to pay.

The Ubiquity of E-learning

Outside of the academy, online learning is well established. Corporations and professional organizations have been using video conferencing and e-learning for years in even the most sensitive areas. From Nestle to NASA, corporations and governments use online learning modules, live Web-based classes, and self-paced courses to train employees in equipment operation, sales techniques, emergency procedures, and performance reviews.

Complicated and important things are being taught online. The American Association for Thoracic Surgery has a large and up-to-date E-Learning Center (www.ctsnet.org) with articles and videos on a variety of procedures. Watching a video (available on mobile devices) seems a much better way to learn a new surgical skill than from drawings in a journal. The European Organization for the Safety of Air Navigation (www.eurocontrol.int) offers its Common Core Content for the Institute of Air Traffic Control as online modules. Over 2,000 online aviation schools will teach you to fly, maintain, or dispatch any size airplane or helicopter (www.aviationschoolsonline.com). Google assembled its tutorials, videos, and courses on Web programming into one place but then decided to make this "Google Code University" free, open-source, and available to the world (www.code.google.com/edu). There are courses on programming languages, Web security, and how to make phone apps. These courses are offered by universities, individuals, and companies around the world, but if you do not see what you need you can invent a new course and share it.

Even ethics is being taught online. Most research institutions have a commitment to the ethical treatment of human subjects and require ethics training for principal investigators even for unfunded projects. Government agencies mandate training in

human subjects protection before funding can be awarded. Most institutions use the online course developed by the Collaborative Institutional Training Initiative (CITI), which began its Web-based training program in human subjects protection in 2000. By 2010, over 1.3 million researchers at 1,130 institutions and facilities had completed a CITI course. In 2004, Georgetown University created an online tutorial in scholarly research and academic integrity for all incoming freshmen to take *before* they started classes at Georgetown (https://library.georgetown.edu/tutorials/academic-integrity). It uses complex real scenarios to teach students the importance of academic honesty, the nature of scholarship, and how research fits into university life.

Developing online learning for corporations is big business. Many large companies have internal learning and development (L&D) departments. The global market for self-paced e-learning in 2009 was $27.1 billion and is predicted to grow by 12.8% a year (Ambient, 2009a). Not surprisingly, the technology industry has led the way; your computer support people take online courses before they install your new software, and Apple and Microsoft offer significant online resources and courses. Is your company ready for International Financial Reporting Standards (IFRS)? Deloitte has e-learning modules that feature "real life scenarios to demonstrate application of the standards, 'coach me' sections to explain the principles and theory, worked examples to show aspects of the standards in action, reference materials, and a printable certificate if you pass the assessment at the end of each module" (www.deloitteifrslearning.com). Deloitte's learning modules have been downloaded over one million times by major corporations and thousands of users in over in 130 countries.

As is the case with classroom instruction, the quality of online courses is uneven, but at its best interactive technology provides not only content, but also practice and individualized feedback that can be difficult to administer in a typical classroom environment. One small e-learning company (www.IsoDynamic.com)

specializes in online courses on complex subjects that require just this sort of navigated feedback. A six-hour course for the Maryland Library Partnership, for example, teaches customer service to librarians using role-playing scenarios that allow users to try new skills in a low-risk environment. Courses in the mental health area include tutorials on administering rating scales for autism and depression in which users practice their skills by observing subjects on video, responding to questions, making assessments, and receiving immediate feedback.

Foreign language learning is also well established on flat screens as a $1.3 billion industry in 2009 (IbisWorld, 2009). One of the largest areas in e-learning is English language learning, predicted to become a $1.69 billion industry by 2014 (Ambient, 2009b). Teaching Mandarin to Westerners using face-to-face instruction on Skype is such a major industry in China that the seventh (!) International Conference on Internet Chinese Education occurred in 2011. It will be no surprise to anyone who has called for technical help in the last few years that American accent training is another growing industry: voice recognition software has been used to teach correct pronunciation since 2005.

The U.S. government is also a heavy user of flat-screen classrooms. The National Institutes of Health (NIH) requires that all principal investigators pass an online clinical research training course (www.cc.nih.gov/training/training/crt.html). The U.S. Food and Drug Administration (FDA) offers online courses through its Center for Drug Evaluation and Research (CDER). CDERLearn (http://www.fda.gov/Training/ForHealthProfessionals/default.htm) offers online training as "one way to share FDA expertise with many more people than face-to-face classroom sessions would allow." Researchers can learn how to bring an unapproved drug into compliance, whereas physicians can learn how to communicate risk to their patients. Many state and federal agencies, like the federal General Services Administration, outsource