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## Higher Education in the Digital Age, by William G. Bowen

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**William G. Bowen.** *Higher Education in the Digital Age.* Princeton: Princeton University Press, 2013. ISBN 9780691159300. \$26.95.

This slim volume comprises William Bowen's 2012 Tanner Lectures on Human Values at Stanford University, and includes responses from John Hennessy, President of Stanford; Howard Gardner, a Harvard University psychologist; Andrew Delbanco, Director of American Studies at Columbia University; and Daphne Koller, Stanford professor of computer science and co-founder of Coursera. Bowen presents two lectures, the first addressing "the cost disease" facing higher education, and the second discussing the prognosis that technology, specifically online education, can cure that disease, entering among other debates the efficacy of massive open online courses (MOOCs).

In the first lecture, Bowen, former president of Princeton and the Andrew W. Mellon Foundation, and co-author with Derek Bok of *The Shape of the River: Long Term Consequences of Considering Race in College and University Admissions* (1998), and with Matthew Chingos and Michael McPherson of *Crossing the Finish Line: Completing College at America's Public Universities* (2011), explains the challenge of reducing the cost of higher education, while simultaneously increasing graduation rates and decreasing the time it takes students to complete their degrees. Some of the factors to which he attributes the cost increase in higher education include a nationwide decline in state appropriations for higher education, procedural inefficiencies (e.g., "bureaucratic creep"), pressure to compete for student enrollments by providing high-end residential and recreational services, and program offerings that are not fiscally sustainable. These issues, coupled with the recent downturn in the U.S. economy, result in students and their families struggling to afford a college degree. Bowen ends this lecture by suggesting that higher education is facing a crisis that will likely result in state and federal funding being tied to performance measures. (This prediction was officially realized in August, 2013, with President Obama's announcement of "Make College More Affordable: A Better Bargain for the Middle Class," which includes a plan to base funding on efficiency and productivity.)

Bowen supports his key points with much detail and many citations, but one of his arguments—that students enrolling at less-selective schools than those for which they are qualified contributes to the problem of increased time-to-degree—is unfortunately not well explained. Although there is evidence that students attending a selective school are more likely to graduate than if they go elsewhere, it is not clear how this results in lower completion rates overall. "Undermatching" may be a problem in that many gifted students do not receive the highest quality education they could, but Bowen ultimately admits that there is no evidence that solving the mismatch problem will improve degree completion rates.

The second lecture explores the potential for online education to address the challenges identified in the first lecture. Bowen considers himself a "convert" in terms of accepting the potential value of online technologies such as MOOCs, and he identifies three requirements necessary for a transformation to occur: hard evidence about learning outcomes and cost savings; a customizable, shared

virtual environment; and fresh thinking about decision-making.

To address the lack of data from experimental research, Bowen worked with the ITHAKA organization (Andrew Mellon Foundation) to design a rigorously-controlled study to compare a hybrid course to a face-to-face course and found “no significant difference” between the two in achievement. Surprisingly, he seems unaware of the abundant literature (dating back to the 1930s) comparing the effects of various technologies on learning that routinely demonstrates no significant differences in achievement. Instructional designers suggest that this is because learning is influenced by the instructional strategy (i.e., how students are engaged with content) rather than how the content is delivered. In terms of research on cost savings, it seems odd that there is no mention of existing research examining this issue, such as, for example, that conducted by the Sloan Consortium and the National Center for Academic Transformation.

The need for a sharable, customizable platform is cited as the second major requirement in order to realize significant change. Bowen describes such a system as “machine-guided” and refers to the sophisticated adaptive learning system devised at Carnegie Mellon University as a way of meeting this need. He does not, however, mention the increasing adoption of open educational resources (OERs), customizable learning objects freely available for re-use in any learning management system currently used for online learning. Considering that OERs can lessen the need for expensive textbooks, and thereby reduce student debt, this is a surprising omission.

Third on Bowen’s list of needs is a “new mindset” concerning decision making. This new way of thinking will require addressing the barriers to adoption of technology tools and resources, acknowledging the difficulty of change, and supporting initiatives that result in both quality and cost savings. In addition, he emphasizes commitment to freedom of thought and a balance between teaching academic content and positive values.

The remaining sections of the book consist of responses to Bowen’s key points, beginning with Howard Gardner, who focuses primarily on the value of a residential college experience and the benefits of inter-institutional collaborations. John Hennessy’s remarks deal squarely with the economics of a college education, including tuition costs, low completion rates, and record levels of student debt. In his commentary, clearly the most pessimistic regarding technology, Delbanco worries that online technologies will result in less meaningful learning, while Daphne Koller, not surprisingly, takes a more favorable stance regarding technology, and warns against letting preconceived notions of what online education can be and do sway important decisions.

Overall, this book is well-organized, with engaging arguments on a variety of points, but the section discussing the cost of higher education seems to end with an unpromising air of “someone should do something.” In terms of what online education might mean for our future, there are too few insights and no real surprises, save one—Bowen’s response to Gardner and Hennessy after their remarks: “As we think about the transition to sophisticated kinds of online teaching, we do well not to be too quick to accept what we want to believe about our own talents and their consequences” (p. 124). *Exactly.*