

## Book Review

**William G. Bowen, Editor**

### *Higher Education in the Digital Age*

—Reviewed by

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**Index Terms**—*Collaboration, communications technology, Coursera, distance learning, hybrid courses, MOOCs, online learning platforms.*

**T**he broad appeal of *Higher Education in the Digital Age* by William G. Bowen, President Emeritus of Princeton University, is not only relevant to the concerns of college students in relation to access and affordability, but should be of particular concern to educators, administrators, and technical communications professionals. The budgetary issues Bowen addresses impact the former; and the latter are tasked with designing and implementing technologies and tools for effective online instruction. Technical communicators will be tasked with developing training materials and communications involved in the development of such course offerings. In addition, those who teach in higher education will likely find themselves in the position of adapting to this new paradigm.

IEEE TRANSACTIONS ON PROFESSIONAL COMMUNICATION readers, who are either directly or indirectly affected, not only by the rising costs of higher education but also the potential influx of online and hybrid courses, will find Bowen's assertion that change is imminent of paramount concern. His discussion addresses how the inevitability of change in this digital age will not only impact budgetary issues associated with, and resulting from, the increasing costs associated with higher education—issues that affect all stakeholders in higher education—but also contends that technology has the potential to resolve, in part, these financial issues, without negatively impacting the core learning objectives of higher education.

Bowen has always had a special interest in technology, its impact on higher education,

and its potential as the impetus for transformation—shifting in recent years from the position of skeptic to that of advocate. In this book, he addresses everyone involved in higher education—administrators, educators, and students—and focuses on the inevitable increase in online and hybrid course offerings, insisting that this shift and the potential of technological advancements should be embraced as a positive advancement while also being meticulously managed to control costs and improve productivity. He discusses massive open online courses (MOOCs) at great length and their potential for use in conjunction with online and hybrid course offerings.

*Higher Education in the Digital Age* is divided into two sections. The first section includes adaptations of Bowen's presentations at The Tanner Lectures at Stanford University in 2012. The second section includes discussion responses from respected colleagues (e.g., Howard Gardner), and Bowen's response to the same. This unique structure enables the reader to be involved as an insider to this debate—a witness not only to the author's assertions but also to the lively discourse that ensues in response.

The first lecture presented is historical in that Bowen focuses on the economy and its effects over time. He identifies cost trends and the forces (political, institutional, as well as societal) impacting those costs and pushing them up at alarming rates. Bowen's text addresses "the cost disease" [p. 3]—an idea relating to productivity and the inability in certain industries (he identifies performing arts and education specifically) to compensate for inflation due to them being labor intensive, resulting in their inability to keep pace with the economy. Bowen identifies a conundrum regarding the competitive nature within and among universities that has undoubtedly resulted in the ever upward trend in the disparity of costs between institutions of higher education:

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We have seen more and more stratification within higher education, with the wealthiest institutions distancing themselves from other very good, but not so wealthy, places. . . . this combination of increased stratification and a determination to ‘buy the best’ can have some pernicious effects. [p. 12]

Bowen identifies factors that have contributed to the astronomical cost inflation and other pressures that result in universities responding to and attending to the demands of the wealth constituents at the expense of the more general student population; this misguided appropriation burdens the system and de-emphasizes, or more accurately de-funds, academics as universities are compelled to invest in extracurricular luxuries. Bowen insists that the most privileged institutions have a responsibility to consider the ramifications of their actions and the pressures that they inevitably apply to those that are less fortunate and emphasizes a more responsible allocation of funds.

Bowen categorizes the debt crisis and productivity into problems associated with supply and demand. On the supply side, he focuses on “a marked increase in time-to-degree (TTD) over the last three decades” and he points out what should be obvious, that “If it takes longer for students to complete their degrees, and if large numbers never finish, the implications for productivity are clear” [p. 16]. He also discusses the idea of mismatching—which addresses students not attending colleges or universities that are a right fit for them personally, academically, or professionally due either to poor guidance, lack of information or direction, and mostly due to lack of finances:

The serious consequences of this persistent pattern are related directly to the by now well-documented empirical relationship between completion rates and the selectivity of colleges and universities. [p. 17]

Bowen identifies current studies that address the issue of mismatch, but notes that currently this phenomenon plays a significant role in driving the upward costs due to its integral association with lower completion rates and longer time to degree, both of which result in decreased productivity for the entire system.

The conversation about trends in institutional costs, budgets, the economic conditions at private versus public institutions, and the widening gap that exists between the two, culminate in how this stratification ultimately translates to accessibility

and student debt. Bowen focuses on *affordability*, a political buzzword in reference to higher education in recent years, and he is cognizant of the ideological underpinnings associated with it as well as the reality of its effect on who can gain access to higher education, and to which institutions this access is granted. Students are keenly aware of the affordability crisis, but educators should also make this concern a priority because it results in restricted budgets, a heavier course schedule, and limited accessibility to new technologies. One consequence to educators (and one that some IEEE TRANSACTIONS ON PROFESSIONAL COMMUNICATION readers might have experienced or witnessed) is the likelihood that they will be tasked with developing hybrid and online course offerings without proper training and support.

Student debt, which began exceeding even credit card debt in 2010, has been a hot topic in the media, and although Bowen does not disagree regarding its significance, he is quick to implicate the media—*The New York Times* in particular—for grossly exaggerated reporting and fear mongering which only serves to exacerbate the problem. Bowen associates students’ perception and reluctance to incur debt as contributors to the mismatch problem. The good news is that higher education is still deemed an important and a worthy investment; however, if costs continue to rise, this public perception will be threatened. Bowen concludes part one by identifying a “second core mission [of higher education]: to enhance mobility and serve as a powerful equalizer—as an engine of opportunity” [p. 24]. Bowen asserts that now is a stressful time—one where change is inevitable—but he is quick to identify the benefits to society that come with the liberating potential of this digital age.

In the second lecture, which will likely be of most interest to IEEE TRANSACTIONS ON PROFESSIONAL COMMUNICATION readers, Bowen identifies new and exciting prospects, such as MOOCs, that could be instrumental in addressing the problems associated with productivity and costs. Bowen acknowledges the challenges associated with utilizing MOOCs but is equally adamant about the dire need for and the inevitability of change in this digital age, and insists that now is the time to act: “[imagine] how the intelligent harnessing of information technology through the medium of online learning might alter aspects of university life as we know it” [p. 44]. This vision focuses primarily on collaboration, active learning, individualized and timely feedback, integration of globally diverse perspectives, equal and affordable access to higher education—all

of which could contribute to democratizing the college classroom and expanding opportunities and education to those who would otherwise be marginalized or mismatched.

In light of his earlier skepticism regarding the cost-savings associated with online courses, Bowen self-identifies as a convert. This conversion is, in part, due to large technological advances in such a short time, but is also due to a change in mindset. Bowen is now convinced of the transformative potential of online learning. Although there are perils associated with evaluative studies of online instruction, Bowen notes that these should not impede progress nor negate the potential of “path-breaking offerings such as some of the MOOCs . . . that have been introduced relatively recently” [p. 47]. In addition to the affordability potential, one of the other estimated effects of MOOCs and hybrid-online learning is their likelihood to improve flow and reduce time to degree, which would be beneficial to both students and institutions from a productivity perspective.

Bowen is quick to note that the ITHAKA study “Interactive Learning Online at Public Universities: Evidence from Randomized Trials” is limited but promising, and many more studies across disciplines should be conducted, as well as studies comparing different approaches to online learning, including a comparison of MOOCs and other online teaching environments regarding the costs associated with their development, customization, and maintenance and if this translates to cost savings.

Bowen identifies the benefits and limitations of MOOCs—both of which involve costs. MOOCs are structured today to serve unlimited numbers of individual learners at no additional cost, but transforming such a system to be customizable to an institution and a particular course challenges this cost efficiency. The most current trend is a collaboration between Coursera (a MOOC founded by computer science professors at Stanford University) and the American Council on Education (ACE), a pilot project which will:

entail faculty-led assessments of a sub-set of Coursera offerings. Students who complete courses that satisfy the requirements of the ACE’s standard College Credit Recommendation Service and who pass an identity-verified exam, will be able to have a transcript submitted to the college of their choice. [p. 55]

This program is an attempt to gain credibility and encourage universities to accept transfer credit from MOOCs. Bowen points to a lack of research involving MOOCs and higher education, a gap clearly relevant to IEEE TRANSACTIONS ON PROFESSIONAL COMMUNICATION readers and researchers.

Bowen calls upon administrators and academic leaders to tackle these pressing issues head-on: to focus on controlling costs through innovative ways that do not adversely affect educational outcomes.

The hope that the tide may be turning toward online education is evidenced by the results of a recent survey [1] showing that a majority of professors are excited about the potential to change their role from that of full-time lecturer to one that involves more time dedicated to *coaching* students. This indication of enthusiasm is promising but is not in itself transformational, and Bowen highlights the technical challenges as being paramount. The complex nature of such a transformation is undeniable. Bowen presses forward, emphasizing the need for “centralized calibration of both benefits and costs” [p. 65]. Bowen is cognizant of the excellence embedded in higher education and, in conclusion, identifies which aspects he thinks must be maintained. His appeal, then, is for a “portfolio approach to curricular development that provides a carefully calibrated mix of instructional styles” [p. 68]. Bowen concludes by readdressing the question of whether online learning is a fix for the cost disease; his answer is no, not by itself. He insists, however, that it can be part of the answer.

*Higher Education in the Digital Age* is provocative in addressing pressing issues that can no longer be ignored. Bowen’s assertion that the time at hand to begin a transformation is supported by research, and the data support the dire need for a resolution to the student debt crisis and productivity problem in higher education. The gaps in the research he presents, particularly involving MOOCs, invite technical researchers to take advantage of this timely opportunity, not only to continue the conversation but to seek solutions to the viability he proposes. Bowen’s concern that public opinion of higher education matters and his insistence that institutions and educators must come together to lead the change *while they can* is an important call to action for IEEE TRANSACTIONS ON PROFESSIONAL COMMUNICATION readers in particular.

## REFERENCES

- [1] E. Allen and J. Seaman. (2012). *Digital Faculty: Professors, Teaching and Technology 2012*. [Online]. Available: [http://www.insidehighered.com/sites/default/server\\_files/DigitalFaculty.htm](http://www.insidehighered.com/sites/default/server_files/DigitalFaculty.htm)