

A Primer on The Transformation of Higher Education in America

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Introduction

There is much to admire about US higher education. At colleges and universities across the country, at both the undergraduate and graduate levels, at schools that are public and private, secular and faith-based, large and small, a great many students receive a wonderful education. Our best undergraduate programs harness the power of a liberal education to help students develop strong and transferrable skills in inquiry and analysis and critical and creative thinking. Year after year, our best professional schools turn out talented physicians, nurses, engineers and architects. Our best research universities expand the boundaries of knowledge in every discipline. And every day, talented and creative faculty explore new curricular approaches and teaching methodologies to increase the quality of student learning on their campuses.

Growing Discontent

At the same time, there is a growing chorus of discontent about what is and is not happening in the higher education enterprise. Over the last decade, the concerns have become increasingly widespread and persistent. Scholars, think-tanks, foundations, professional associations and campus based centers and institutes, as well as state and federal government agencies have published reports, books, and papers and staged multiple convenings in an effort to clarify the challenges and to offer prescriptions for change. The most dramatic observations from all of this work – too often in the form of provocative sound bites -- have found their way into the mass media and thus into the American consciousness. Ask just about anyone at a dinner party, at work, or on the train or plane about collegiate quality. The response is similarly disconcerting: Too few people who start college do not graduate. Too few graduates are job ready, not having acquired the knowledge, proficiencies and dispositions to compete in the global economy. College

is becoming unaffordable for all but those from affluent families. And, sadly, higher education is no longer a powerful engine for social mobility.

Major Change is Underway

There is no shortage of efforts to address these problems. Colleges and universities of every stripe, from small private colleges to massive state university systems are developing new policies, programs and services designed to make college more affordable, to improve the quality of student learning and to close access and attainment gaps. New degree programs and even new institutions are springing up, using emerging technologies and innovative pedagogies with some adopting radically different business models. Given all of this activity, there is a growing consensus that higher education in the US is in the midst of a major transformation that will result in changes in the way it is delivered and experienced.

Multiple Points of View

The implications of changes of this magnitude have drawn many voices into the conversation; some observers comment from the sidelines, others are actively engaged in promoting or challenging one or another assumption or initiative. The issues are complex and perspectives vary widely, influenced in no small part by where one sits. Faculty and staff are anxious about how changes at their institution might impact their lives. Prospective students and their parents are uncertain about how to make good choices in an environment where traditional assumptions about both the value of higher education and about educational quality are being challenged. Policy makers are besieged by groups with a vested interest in one outcome or another. And private investors are excited by what they see as opportunities to make large profits by enrolling students in programs they have created or by selling their services to colleges and universities looking for ways to adapt to changing circumstances.

At the same time, there are some – including many in the academy -- who bristle or are otherwise put off at the use of the term, *transformation*. Some of these skeptics believe that the innovations that are appearing will fail to stand the test of time and fade away, as have other highly touted remedies decades past. Others believe that the current wave of innovation holds little threat to long-established, traditionally configured programs, because many of the approaches diminish what they see as one of the key ingredients in educational quality, namely the face-to-face interaction among faculty and students. At best, they believe new technologies and models may survive as a way to provide an inferior brand of education to underserved students. Only time will tell whether what appears to many observers to be a fundamental transformation in the making will prove to be something else instead.

The Critical Role of Assessment

One thing is certain. Efforts to make higher education more affordable, to increase the level of student learning, and to enact successfully the equity and excellence agenda

depend on having an established frame of reference by which to judge educational quality. Finding ways to make undergraduate education more affordable and accessible is an empty promise, unless that education meets some desirable standard of quality. The assessment of student learning has been largely accepted as that frame of reference and that makes The National Institute for Learning Outcomes Assessment (NILOA) a key player in the national conversation about the transformation of higher education. George Kuh and Stan Ikenberry speak to this point in the first chapter of their book, *Using Evidence of Student Learning to Improve Higher Education* (2015, p. 2).

“The big question is this: How will colleges and universities in the United States both broaden access to higher learning and also enhance student accomplishment and success for all students while at the same time containing and reducing costs? This is higher education’s signal challenge in this century. Any meaningful response requires accurate, reliable data about what students know and are able to do as a result of their collegiate experience. In the parlance of the academy, this systematic stock-taking—the gathering and use of evidence of student learning in decision making and in strengthening institutional performance and public accountability—is known as student learning outcomes assessment.”

Staying Abreast of the Changing Landscape

As the pace of change has accelerated, the future of higher education has become more unpredictable and discussions about how to maintain its relevance to the American dream intensified. The amount of published material on the topic grows larger each year. As a consequence, all but the most conscientious observers, including most faculty, administrators, trustees and policy makers, are likely to have gaps in their understanding of the problems that need attention, the range of initiatives now underway to address these problems and the likely consequences of adopting or failing to adopt one or another policy or initiative. To the extent that is true, their perceptions about and their attitudes toward the changes that are unfolding in higher education today may not be well informed, making it difficult for them to participate effectively in the ongoing dialogue.

The Collection

This document, **A Primer on The Transformation of Higher Education in America**, is an annotated collection of material that describe and analyze the changing landscape of American higher education. It is intended for use as a reference guide by those interested in becoming more informed about the changes, both underway and anticipated, in higher education in the U.S. Entries represent multiple points of view. All were chosen for their relevance, prominence and potential impact on the ongoing conversation. Almost all of the entries contain links to original sources or locations where one can learn about the entry in more depth.

The collection is divided into ten sections to assist the reader in locating material of particular interest. It begins with a section on **Changing Paradigms** that describes three different pieces of scholarship, each of which challenged traditional assumptions, offered new ways of thinking about undergraduate education and thus opened up new ways to structure the work of colleges and universities. Together, these new paradigms provided

the essential framework for changes we are seeing today. The next two sections, **Early Calls for Change** and **Comprehensive Analyses and Prescriptions**, review the major pieces of scholarship that describe the problems that are putting so much pressure on higher education to change and that propose what kinds of changes are needed to address the problems effectively. These are followed by a section, **Concepts, Processes and Tools**, that defines the terminology and describes many of the innovations that are referred to in the two preceding sections. The fifth section, **Prominent Transformational Efforts**, identifies those organizations that are at the forefront of changing higher education. These include for-profit ventures, not-for-profit entities and not-for-profit accredited universities. That is followed by **Barriers to Change**, a section that describe factors that have been identified as standing in the way of more rapid and comprehensive change in higher education. **Critiques of “Transformation”** reviews the arguments against technology assisted education, most of which decry the loss of student-faculty interaction that they fear will be an inevitable consequence. **Influential Websites and Blogs** and **Supportive Foundations** are sections that seem to be self-explanatory. The final section, **Other Material of Note**, captures relevant material that does not lend itself to easy classification.

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1. Changing Paradigms

Achieving Educational Excellence

This groundbreaking book, written by Alexander Astin and published in 1985, challenged, for the first time, one of the most critically important assumptions about higher education - namely, how we judge educational excellence. Astin pointed out that traditional perceptions of excellence are based on institutional reputation and resources as determined by such things as the scholarly productivity of the faculty, the standardized test scores of newly enrolled students and the size of the endowment. He showed how these traditional assumptions can work against important educational goals and affect institutional values and priorities in ways that actually interfere with efforts to improve higher education. He described an alternative view of excellence that focuses on the development of students' talents and abilities. The talent development approach to excellence emphasizes the intellectual and personal development of students as a fundamental institutional purpose. According to this view, an excellent institution is one that facilitates maximum growth among its students and faculty. Unlike the reputational and resources approaches, the talent development view does not limit either educational opportunities or the overall excellence of the system by identifying only a limited number of colleges and universities as "the best". Any institution can be "excellent" if it deploys its resources wisely and effectively to facilitate the intellectual and personal development of its students and faculty. This alternative lens through which to view excellence became, over time, the framework that guided almost all of the serious thinking about how to improve higher education in the US. The irony is that American society in general, including many who work in our colleges and universities, continue to believe that the best colleges and universities are those with the most resources and the best reputations.

Scholarship Reconsidered: Priorities of the Professoriate

This important book, based on the work of Eugene Rice, was formally authored by Ernest Boyer, President of the Carnegie Foundation for the Advancement of Teaching. It was originally published in 1990. Boyer contends that central to the debate on improving undergraduate education is the issue of how faculty spend their time. He explores the history of the American professoriate recounting three distinct overlapping phases: 1) the colonial college phase, which was devoted to the intellectual and moral development of students and thus placed its emphasis primarily on teaching, 2) the national expansion phase, which added service as core to the mission of the university and included the goal of an educated citizenry to serve the greater community, and finally 3) the modern phase, which added the advancement of knowledge through research as a third component to faculty priorities. Thus, we have the triad upon which most faculty in this country are evaluated: teaching, service, and research. According to Boyer, the post-World War II era has seen a major realignment of these three components. This realignment is clearly expressed through surveys indicating an increase in the percentage of faculty who feel that they must be engaged in publishable research to achieve promotion or tenure. Boyer suggests that this narrowing of standards for measuring academic excellence is in sharp contrast with the expanding mission of the American higher education system, which is now expected to educate the most diverse groups of students in the history of the nation.

He argued that to remain viable in the new century, America's colleges and universities must abandon the old paradigm of research versus teaching and adopt a new one by expanding the definition of scholarship. Specifically, scholarship should have four separate yet overlapping meanings: the scholarship of discovery, the scholarship of integration, the scholarship of application, and the scholarship of teaching. By embracing these four general views of scholarship, Boyer challenged the academic profession to enlarge its perspective on the priorities of the professoriate. This new approach to scholarship would allow faculty to have academic seasons of their career in which they might choose to focus more narrowly on one of the four areas of scholarship. The goal of such a program is to "sustain productivity across a lifetime." Furthermore, this vision of scholarship compliments the diversity needed in our higher learning system. Research institutions may place a greater emphasis on the scholarship of discovery in the assessment of their faculty. Liberal arts institutions may emphasize the scholarship of teaching coupled with integration, while community colleges may accentuate the scholarship of teaching coupled with application. He argues that while all four views of scholarship may exist on a single campus, each institution can and should find its own special niche in the world of higher learning.

Robert B. Barr and John Tagg, "From Teaching to Learning- A New Paradigm for Undergraduate Education", *Change*, Vol.27, No.6, 1995

In this widely cited article, Robert Barr and John Taag argue that a paradigm shift is taking hold in American higher education. They write, "In its briefest form, the paradigm that has governed our colleges is this: A college is an institution that exists to provide instruction. Subtly but profoundly we are shifting to a new paradigm: A college is an institution that exists to produce learning. This shift changes everything. It is both needed and wanted. We call the traditional, dominant paradigm the "Instruction Paradigm." Under it, colleges have created complex structures to provide for the activity of teaching conceived primarily as delivering 50- minute lectures--the mission of a college is to deliver instruction. Now, however, we are beginning to recognize that our dominant paradigm mistakes a means for an end. It takes the means or method--called "instruction" or "teaching"--and makes it the college's end or purpose. To say that the purpose of colleges is to provide instruction is like saying that General Motors' business is to operate assembly lines or that the purpose of medical care is to fill hospital beds. We now see that our mission is not instruction but rather that of producing learning with every student by whatever means work best. The shift to a "Learning Paradigm" liberates institutions from a set of difficult constraints. Today it is virtually impossible for them to respond effectively to the challenge of stable or declining budgets while meeting the increasing demand for postsecondary education from increasingly diverse students. Under the logic of the Instruction Paradigm, colleges suffer from a serious design flaw: it is not possible to increase outputs without a corresponding increase in costs, because any attempt to increase outputs without increasing resources is a threat to quality. If a college attempts to increase its productivity by increasing either class sizes or faculty workloads, for example, academics will be quick to assume inexorable negative consequences for educational quality."

2. Early Calls for Transformation

Challenges and Opportunities Facing Higher Education

In this 1998 report by the National Center for Public Policy and Higher Education, Dennis Jones, Peter Ewell and Aims Mc Guinness argue that the basic framework for policymaking in postsecondary education has been essentially unaltered since passage of the federal Higher Education Act of 1965. They go on to identify key questions higher education policy faces as the new century approaches, and the way policy might be changed to accommodate the changing environment. Most significantly, they suggest the need for a policy framework that is more oriented to learners and less oriented to educational providers than is currently the case. Given the historical policy emphasis on *institutions of higher education*, shifting to such a framework will constitute a substantial challenge. It will require more than merely "fine-tuning" current policies that have developed incrementally over many years. Instead, it will require fresh thinking about fundamental policies and significant changes in well entrenched ways of doing business.

Alan E Guskin and Mary Marcy, "Dealing with the Future Now: Principles for Creating a Vital Campus in a Climate of Restricted Resources", *Change* • July/August 2003

Alan Guskin and Mary Marcy, writing in *Change* in 2003, were among the first to explore how the declining fiscal health of our colleges and universities will impact the quality of faculty work life and student learning. The traditional "muddling through", "this too shall pass" response will be increasingly detrimental. These changing conditions will force us to think in new ways and demand responses different from those we have followed in the past. College and university leaders must begin to transform their institutions. The authors outline how this might be done by describing a set of three organizing principles and seven transformative actions that can ultimately offer a more hopeful future for both the quality of student learning and the nature of faculty work. They pose the question: if we were creating a college or university today, given what we know about likely fiscal, technological and societal realities, what would it look like?

Spellings Commission Report

The formation of a Commission on the Future of Higher Education, also known as the Spellings Commission, was announced in 2005, by U.S. Secretary of Education Margaret Spellings. The nineteen-member commission was charged with recommending a national strategy for reforming post-secondary education. The report, which proved to be controversial, was released in 2006. It focuses on four key areas: access, affordability, standards of quality in instruction, and institutional accountability. Among the reports many recommendations are ways to 1. Expand college participation and success by creating a seamless pathway between high school and college; 2. Institute cost-cutting and productivity improvements; 3. Consolidate financial aid programs, streamline processes, and replace the FAFSA with a much shorter and simpler application; 4. Become more transparent about cost, price, and student success outcomes; 5. Measure

institutional success on a “value-added” basis that takes into account students’ academic baseline when assessing their results; and 6. Embrace a culture of continuous innovation and quality improvement by developing new pedagogies, curricula and technologies to improve learning.

3. Comprehensive Analyses and Calls for Change

The Quiet Crisis: How Higher Education is Failing America

In this 2008 book, Peter Smith argues that we are failing to educate large numbers of students in higher education successfully because we are employing an out-of-date educational model that ignores the knowledge and resources available that would make these students successful. This model, he argues, ignores the newest scientific findings about how we learn; it still favors those in the upper economic strata and works against minorities, despite efforts to level the playing field; and it is slow to harness the power of technology to allow for deeper and better learning. Through research data and stories, Smith maintains that our schools are organized for failure and that our historic “industrial model” simply won’t make the grade to compete in the knowledge economy. Unless we rethink higher education profoundly, we will serve a declining percentage of the population successfully each year, and thus we will fail in our mission to develop the next generation of leaders.

Winning by Degrees: The Strategies of Highly Productive Higher Education Institutions

Increasing the proportion of the adult population with a higher-education degree is critical to creating opportunities for individuals and sustaining the country’s economic growth. Yet college attainment rates in the U.S. have remained nearly flat for the past 10 years, whereas they have continued to rise in most industrialized nations. It is estimated that that the U.S. needs to graduate roughly one million more people a year by 2020 to ensure that the country has the skilled workers it needs to maintain economic growth. How could higher education systems achieve that objective in the current fiscal context, when states are much more likely to cut education budgets than expand them? This 2010 McKinsey & Company report argues that to reach this goal without increasing public spending or compromising quality, the U.S. higher-education institutions would need to improve their degree completion productivity by an average of 23 percent, as has been demonstrated by top quartile U.S. institutions that are already 17 to 38 percent more productive than their peer group average. Through an in-depth study of detailed data on performance, costs and practices shared by eight highly productive schools, the report identifies five winning strategies, focusing on raising the rate at which students complete their degrees and improving cost efficiency. Together these strategies can result in over 60 percent higher degree productivity.

Reinventing Higher Education: The Promise of Innovation

Reinventing Higher Education: The Promise of Innovation, published in 2011 and edited by Ben Wildavasky, Andrew Kelly and Kevin Carey, is an ambitious exploration of possible future directions for revitalized American colleges and universities. This collection of articles by leading scholars, writers, innovators, and university administrators examines the current higher education environment and its chronic resistance to change; the rise of for-profit universities; the potential future role of community colleges in a significantly revised higher education realm; and the emergence of online learning as a means to reshape teaching and learning and to reach new consumers of higher education. The editors express their concern that, when innovation does occur, it is extremely limited and slow moving. They argue that higher education must evolve in fundamental ways if it is to respond to changing professional, economic, and technological circumstances, and if it is to successfully reach and prepare a vast population of students, traditional and nontraditional alike, for success in the coming decades.

Making Reform Work: The Case for Transforming American Higher Education

Robert Zemsky, one of a select group who participated in Secretary of Education Margaret Spellings' 2005 Commission on the Future of Higher Education, signed off on the commission's report with reluctance. In *Making Reform Work*, published in 2011, he presents the ideas he believes should have come from that group to forge a practical agenda for change. Zemsky argues that improving higher education will require enlisting faculty leadership, on the one hand, and, on the other, a strategy for changing the higher education system writ large. Directing his attention from what can't be done to what can be done, Zemsky provides numerous suggestions. These include a renewed effort to help students' performance in high schools and a stronger focus on the science of active learning, not just teaching methods. He concludes by suggesting a series of dislodging events - for example, making a three-year baccalaureate the standard undergraduate degree, congressional rethinking of student aid in the wake of the loan scandal, and a change in the rules governing endowments - that could break the gridlock that today holds higher education reform

The Innovative University: Changing the DNA of Higher Education from the Inside Out

The Innovative University, published in 2011, illustrates how higher education can respond to the forces of disruptive innovation. Through a comparative examination of Harvard and BYU-Idaho as well as other stories of innovation in higher education, Clayton Christensen and Henry Eyring, describe where the practices of the modern university have come from and illustrate how universities can find innovative, less costly ways of performing their uniquely valuable functions. An abbreviated version of this book, published by the American Council of Education, can be found [here](#).

College 2.0: Transforming Higher Education through Greater Innovation and Smarter Regulation

This 2011 report from the Institute for a Competitive Workforce, begins by explaining that higher education has not changed its basic structure and delivery model because it hasn't been forced to do so. Protected by government regulations and accrediting bodies, supported by taxpayer subsidies and guided by a collegial, risk averse culture of shared governance, higher education has avoided addressing "the fundamental issues of how academic programs and institutions must be transformed to serve the changing educational needs of a knowledge economy." The report describes an array of forces now working to disrupt the traditional business model of higher education. Increasing international competition, a decline in government funding, changing demographics, an increasingly mobile population, new-tech savvy students that expect anytime, anywhere customized learning, and the emergence of new commercial providers are just some of the factors threatening the status quo. Many of the most promising initiatives with the potential to transform higher education are coming from outside the education establishment. Whether this new wave of innovation is allowed to flourish and help solve higher education's productivity crisis is up to policymakers and higher education leaders. The report concludes by observing that the U.S. is likely to lose its edge to faster moving international competitors if innovation is stifled through restrictive regulations on e-learning, discouraged through funding that fails to reward quality and outcomes, or simply thwarted by complacency within traditional intuitions.

A New Culture of Learning: Cultivating the Imagination of a World in Constant Change

In this 2011 book, Douglas Thomas and John Seely Brown pursue an understanding of "a new culture of learning" they believe will emerge in response to the forces of change. They explain that the world is changing faster than ever and our skill sets have a shorter life; the world is getting more connected than ever before; in this connected world, mentorship takes on new importance and meaning; challenges we face are multi-faceted requiring systems thinking & socio-technical sensibilities; and while skills are important, so are mind sets and dispositions. By exploring play, innovation, and the cultivation of the imagination as cornerstones of learning, the authors create a vision of learning for the future that they believe is achievable, scalable and one that grows along with the technology that fosters it and the people who engage with it. The result is a new form of culture in which knowledge is seen as fluid and evolving, the personal is both enhanced and refined in relation to the collective, and the ability to manage, negotiate and participate in the world is governed by the play of the imagination.

Unlocking the Gates: How and Why Leading Universities are Opening Up Access to their Courses

In his book, published by the Princeton University Press in 2011, Taylor Walsh describes how, over the past decade, a small revolution has taken place at some of the world's leading universities. They have started to provide free access to undergraduate course materials--including syllabi, assignments, and lectures--to anyone with an Internet connection. Yale offers high-quality audio and video recordings of a careful selection of popular lectures, MIT supplies digital materials for nearly all of its courses, Carnegie

Mellon boasts a purpose-built interactive learning environment, and some of the most selective universities in India have created a vast body of online content in order to reach more of the country's exploding student population. Although they don't offer online credit or degrees, efforts like these are beginning to open up elite institutions--and may foreshadow significant changes in the way all universities approach teaching and learning. Taylor Walsh traces the evolution of these online courseware projects and considers the impact they may have, both inside elite universities and beyond. He argues that as economic constraints and concerns over access demand more efficient and creative teaching models, these early initiatives may lead to more substantial innovations in how education is delivered and consumed--even at the best institutions.

The Financially Sustainable University

This essay was written in 2012 by *Jeff Denneen, head of the Americas Higher Education Practice for Bain & Company, and Tom Dretler, an executive in residence with Sterling Partners. The authors present data that show that a growing percentage of our colleges and universities are in real financial trouble and that, if the current trends continue, in 20 years we will see a higher education system that will no longer be able to meet the diverse needs of the US student population. They observe that much of the financial crisis facing higher education comes from having succumbed to the "Law of More."* Many institutions have operated on the assumption that the more they build, spend, diversify and expand, the more they will persist and prosper. But instead, the authors point out, the opposite has happened. Institutions have become overleveraged. The natural question for higher education, then, is what incremental value is being provided for the incremental cost. To reverse the Law of More and create a more differentiated and financially sustainable institution, the authors describe how innovative college and university presidents are doing four things: 1. developing a clear strategy, focused on the core, 2. reducing support and administrative costs, 3. freeing up capital in non-core assets. 4 strategically investing in innovative models.

American Council on Education: Presidential Innovation Papers

This series of papers is a reflection of conversations conducted by a group called the Presidential Innovation Laboratory. The group, convened by ACE in 2013 as part of a grant from the Bill & Melinda Gates Foundation, explored new models inspired by the disruptive potential of new educational innovations—technological, pedagogical, organizational, and structural—especially those that could increase the number of Americans able to earn a postsecondary degree, certificate, or credential. These papers focus on four somewhat overlapping areas: business model innovation, the changing faculty role, students of the future and major drivers and signals of change in postsecondary education.

Higher Education in America

Written by former Harvard President Derek Bok and published in 2013, *Higher Education in America* is a comprehensive analysis of the current condition of our colleges and universities. Bok examines the entire system, public and private, from community

colleges and small liberal arts colleges to large research universities. He addresses a host of issues: the debates over the undergraduate curriculum; concerns over rising college costs; the rise of for-profit institutions, massive open online courses (MOOCs), the quality of undergraduate education, the stagnating levels of college graduation, the problems of university governance, the strengths and weaknesses of graduate and professional education, the environment for research, and the benefits and drawbacks of the pervasive competition among colleges and universities. He addresses what higher education is doing right, what it needs to do better, and how the next quarter century could be made a period of progress rather than decline.

Checklist for Change: Making American Higher Education a Sustainable Enterprise

In this 2013 book, *Checklist for Change*, Robert Zemsky details the complications that have impeded every credible reform intended to change American higher education and argues that well-intentioned actions have combined to create the current mess for which everyone is to blame. Using case studies, Zemsky describes the reforms being implemented at a few institutions with the hope that these might serve as harbingers of the kinds of change needed. In conclusion, Zemsky describes the principal changes that must occur not singly but in combination. These include a fundamental recasting of federal financial aid; new mechanisms for better channeling the competition among colleges and universities; recasting the undergraduate curriculum; and a stronger, more collective faculty voice in governance that defines not why, but how the enterprise must change.

The Idea of the Digital University: Ancient Traditions, Disruptive Technologies and the Battle for the Soul of Higher Education

In this 2012 book published by the Westphalia Press, McCluskey and Winter explore why the “university has come late to the digital revolution”, lending a historical perspective while continuously drawing comparisons and contrasts between the traditional and digital university. Rather than postulating a transformation from one to the other, the authors explore how they believe digital technologies will become integrated into the fabric of the traditional university. The authors address in detail the most obvious evidence of online influence—the growth of online courses—but they pay equal attention to broader implications: the opening up of new avenues for library research, the shift away from paper-based student records and the fundamental change in the way professors teach students. The authors often return to the notion that “Big Data will impact how the university sees its students and their learning.” Rather than take a position in favor or against for-profits, the authors diplomatically discuss some of the ways the nonprofit and for-profit institutions could learn from each other. Finally, they offer their own perceptive assessment on what the digital university might someday look like, postulating about dashboards, data warehouses and digital report cards.

Higher Education in the Digital Age

In this 2013 book, William G. Bowen, former President of Princeton University and one of the foremost experts on the intersection of education and economics, explains why, despite his earlier skepticism, he now believes technology has the potential to help rein in costs without negatively affecting student learning. Surveying the dizzying array of new technology-based teaching and learning initiatives, including the highly publicized emergence of "massive open online courses" (MOOCs), Bowen argues that such technologies could transform traditional higher education--allowing it at last to curb rising costs by increasing productivity, while preserving quality and protecting core values. Acknowledging that the challenges, which are organizational and philosophical as much as technological, are daunting, Bowen remains optimistic that the potential payoff is great. The book is based on the Tanner Lectures on Human Values he delivered at Stanford University in 2012.

Remaking College: Innovation and the Liberal Arts

In light of increasing calls for higher education to make access to college more affordable and to do more to prepare students for specific careers, what is the role of the American residential liberal arts college today? Edited by Rebecca Chopp, Susan Frost and Daniel H. Weiss and published in 2013, *Remaking College* is a series of essays that together define the American liberal arts model, describe the challenges these institutions face, and propose sustainable solutions. These essays describe the shifting economic and financial models for liberal arts colleges and consider the opportunities afforded by technology, globalism, and intercollegiate cooperative models.

College Unbound: The Future of Higher Education and What It Means for Students

In *College (Un) bound*, published in 2013, Jeffrey J. Selingo argues that America's higher education system is broken. The great credential race has turned universities into big business and fostered an environment where middle tier colleges can command elite university-level tuition while concealing staggeringly low graduation rates and churning out students with few hard skills into the job market. Beyond these criticisms, Selingo argues that technology will soon transform higher education for the better. Free massive online open courses (MOOCs) and hybrid classes, adaptive learning software, and the unbundling of traditional degree credits will increase access to high quality education regardless of budget or location and tailor lesson plans to individual needs.

Beyond Retrofitting: Innovation in Higher Education

Andrew Kelly and Frederick Hess, authors of this 2013 report published by the [Hudson Institute](#), are both Resident Scholars in Educational Policy Studies at the [American Enterprise Institute](#). Here they argue that, while the advent of digital technologies has set the stage for a radical transformation of higher education, enthusiasm for new modes of delivery masks the real obstacles to lasting transformation and improvement. When public entities and public policy enter the mix, resistance to disruption can be fierce. The result is that enthusiastically touted "reforms" often amount, in the grand scheme of things, to minor tweaks to yesterday's routines. In markets where new entry is controlled and

incumbent institutions are subsidized, there is a temptation to simply graft technology onto existing routines while leaving cost structures intact. Such retrofitting may be better than nothing, but it often amounts to little more than repackaging a largely familiar product at a familiar price. It does not have to be this way, they argue. Ushering in the next round of higher education innovation will require policy reforms—deregulation, essentially—that allow entrepreneurs to unbundle services, enter the market, and compete for students. Specifically, they argue that leaders should develop a reform agenda built on four basic principles: 1. Focus on outcomes rather than the act of delivery 2. Openness to new providers 3. Unbundling and 4. Portability.

[An Avalanche is Coming: Higher Education and the Revolution Ahead](#)

Written by Michael Barber, Katelyn Donnelly and Saad Rizvi, *An Avalanche is Coming* is a 2013 report published by the Institute for Public Policy Research, a think-tank located in the UK. The authors argue that the next 50 years could see a golden age for higher education, but only if all players seize the initiative and act ambitiously. Citizens need to seize the opportunity to learn and re-learn throughout their lives. University leaders need to take control of their own destiny and seize the opportunities opened by technology to offer broader, deeper and more exciting education. Each university needs to be clear with which niches or market segments it wants to serve and how. Finally, governments need to rethink their regulatory regimes for an era when university systems are global rather than national and a student's education can take multiple paths. The key messages from the report to every player in the system are that the new student consumer is king and standing still is not an option. The biggest risk they see is that, as a result of complacency, caution or anxiety, the pace of change is too slow and the nature of change is too incremental. Embracing the new opportunities may be the only way to avoid the avalanche that is coming.

[American Higher Education in Crisis?](#)

In this book, published in 2014, Goldie Blumenstyk describes the forces and trends that now challenge higher education. Blumenstyk explores the debates over the value of post-secondary education, problems of affordability, and concerns about the growing economic divide. She also discusses faculty tenure, growing administrative bureaucracies and new demands for accountability. She explores how the money chase in big-time college athletics, revelations about colleges falsifying rankings data, and corporate-style presidential salaries have soured public perception. Blumenstyk describes how institutions are responding to the rise of alternative-educational opportunities and the new academic and business models that are appearing. She addresses some of the advances in technology that colleges are employing to attract and retain students; outlines emerging competency-based programs that are reshaping conceptions of a college degree, and offers readers a look at promising innovations that could alter the higher education landscape in the near future.

Technology: Its Potential Impact on the National Need to Improve Educational Outcomes and Control Costs

This essay by William G. Bowen, delivered at the 2014 De Lange Conference at Rice University, begins with a review of the current problems with our system of higher education, including the problem of affordability. Bowen goes on to argue that: “advances in technology offer real opportunities to “do more with less”—if they are not over-hyped, and if the appropriate technology is chosen and implemented strategically. In industry after industry, well-conceived investments in technology have, in addition to disrupting processes and product lines, generated economies of scale and reduced cost per unit of output significantly. In higher education, the opportunity to spread the costs of the needed initial investments in technology and the requisite process redesign across a larger enrollment base (including, almost certainly, multiple campuses and probably multiple systems) is likely to be the key to achieving the scale needed to allow real long-term reductions in cost per student. In a concluding section on barriers to overcome, Bowen discusses the urgent need to rethink shared governance, the subject of his new book, co-authored by Gene Tobin titled *Locus of Authority: The Evolution of Faculty Roles in the Governance of Higher Education*, 2015.

The End of College

Kevin Carey, Director of the Education Policy Program of the New America Foundation, is the author of *The End of College: Creating the Future of Learning and the University of Everywhere*, published by Riverhead Books in 2015. Carey describes how higher education evolved from its beginnings in the 11th century to the modern American university that is designed like a research university, charged with practical training and immersed in the spirit of liberal education. This hybrid institution, he asserts, is deeply flawed and responsible for the high dropout rates, the skyrocketing costs and the highly uneven levels of learning that we are seeing today. He describes the damage done to higher education by the intense competition among institutions for prestige, the emergence of information technology as a powerful aid to teaching and learning and how the hybrid university’s monopoly over the sale of recognized credits and credentials has to this point allowed it to ignore the possibilities of technology-based efficiency. Carey chronicles the evolution of venture capitalists’ investment in educational technology and why the joint venture between MIT and Harvard and the emergence of new credentialing practices constitutes game changers for all of higher education. His central thesis is that high quality digital learning environments will increase the productivity of universities to the point where students across the globe will have access, at little or no cost, to learning experiences of the highest quality.

College Disrupted: The Great Unbundling of Higher Education

Ryan Craig is a founding Managing Director of University Ventures, an investment firm focused on transforming global higher education. In this book he calls for Americans to rethink and restructure education to meet the needs of the vast majority of students, not just an elite, moneyed few. Just as technology allowed music consumers to download the songs they wanted rather than the whole album, students “need to be able to distinguish

the education equivalent of the hit single from all the songs they don't want," Craig outlines what institutions can do to position themselves for "the Great Unbundling," in which students pay for education rather than for faculty research, fancy buildings, and college athletics. He argues that technologies can help unbundle education, separating the worthwhile learning process from the fluff and high expenditures that usually entangle it. Craig's strategic vision is strictly a business model, requiring institutions to compete for consumers, market their brand, and successfully distribute their products worldwide. To survive, he argues, institutions need to reprioritize "knowledge creation and dissemination" and provide a good return on investment by cultivating in students the cognitive, self-management, and "creative and critical thinking skills that employers demand."

Designing the New American University

Michael Crow, President of Arizona State University and an outspoken advocate for reinventing the public research university, conceived the New American University model when he moved from Columbia University to Arizona State in 2002. Following a comprehensive reconceptualization spanning more than a decade, Crow claims that ASU has emerged as the foundational prototype for the new model, an egalitarian institution committed to academic excellence, inclusiveness to a broad demographic, and maximum societal impact. In *Designing the New American University*, Crow and coauthor William B. Dabars—a historian whose research focus is the American research university—examine the emergence of this set of institutions and the imperative for the new model, the tenets of which may be adapted by colleges and universities, both public and private. Through institutional innovation, say Crow and Dabars, universities are apt to realize unique and differentiated identities, which maximize their potential to generate the ideas, products, and processes that impact quality of life, standards of living, and national economic competitiveness.

4. Concepts, Processes and Tools

Disruptive Innovation

Disrupting College: How Disruptive Innovation Can Deliver Quality and Affordability to Postsecondary Education

This 2011 Center for American Progress report, authored by Clayton M. Christensen, Michael B. Horn, Louis Soares, and Louis Caldera examines the industry of higher education through the lens of the theory of disruptive innovation. Disruptive innovation is the process by which a sector that has previously served only a limited few because its products and services were complicated, expensive, and inaccessible, is transformed into one whose products and services are simple, affordable, and convenient and serves many no matter their wealth or expertise. The new innovation does so by redefining

quality in a simple and often disparaged application at first and then gradually improves such that it takes more and more market share over time as it becomes able to tackle more complicated problems. The authors argue that online learning focused exclusively on teaching and learning, not research—and focused on highly structured programs targeted at preparation for careers—is an emerging disruptive innovation that has given certain colleges and universities a significant cost advantage and allowed them to grow rapidly. This, the authors claim, presents an opportunity to rethink many of the age-old assumptions about higher education—its processes, where it happens, and what its goals are and to use the disruptive start-up organizations to create institutions that operate very differently and more appropriately to address the country’s challenges.

Online learning

[Online Learning: The Next Generation](#)

In an essay written published in Inside HigherED on 11/19/14, Steven Mintz explores the many varieties of online education. At one end of the spectrum of innovation are the online courses that are simply digitized versions of traditional lecture courses, sometimes supplemented with a discussion forum and various assessments, or real-time online seminars. At the other end of the spectrum of innovation are a wide variety of richer approaches. The critical difference between replication (with enhancements) of the classroom experience and the potential for the transformation of the classroom experience lies in four aspirations: a learner focus, an emphasis on interactivity, scalability, and a quest to reduce costs while maintaining quality. Mintz argues that transformation happen when faculty members don’t see themselves as mere instructors, but as designers, coaches, and members of a learning development team with particular goals in mind. The author looks at five contrasting ways to achieve these next generation goals, and then offers a more radical way we might think of the educational experience.

Open Education

[Open Education Consortium](#)

Open education encompasses resources, tools and practices that employ a framework of open sharing to improve educational access and effectiveness worldwide. Open Education combines the traditions of knowledge sharing and creation with 21st century technology to create a pool of openly shared educational resources, while harnessing today’s collaborative spirit to develop educational approaches that are more responsive to learner’s needs. The idea of free and open sharing in education is not new. In fact, sharing is probably the most basic characteristic of education: education is sharing knowledge, insights and information with others, upon which new knowledge, skills, ideas and understanding can be built. Open Education seeks to scale educational opportunities by taking advantage of the power of the internet, allowing rapid and essentially free dissemination, and enabling people around the world to access knowledge, connect and collaborate. Open is key; open allows not just access, but the ability to modify and use materials, information and networks so education can be personalized to individual users or woven together in new ways for large and diverse audiences.

Adaptive Learning

[Learning to Adapt: The Case for Accelerated Adaptive Learning in Higher Education](#)

Adaptive learning is an educational method which uses computers as interactive teaching devices. Computers adapt the presentation of educational material according to students' learning needs, as indicated by their responses to questions and tasks. The technology encompasses aspects derived from various fields of study including computer science, education, and psychology. Adaptive learning has been partially driven by a realization that tailored learning cannot be achieved on a large-scale using traditional, non-adaptive approaches. Adaptive learning systems endeavor to transform the learner from passive receptor of information to collaborator in the educational process. They have been designed as both desktop computer applications and web applications. Adaptive learning has also been known as [adaptive educational hypermedia](#), [computer-based learning](#), adaptive instruction, [intelligent tutoring systems](#), and computer-based pedagogical agents.

Blended Learning

[Blended Learning](#)

Blended courses (also known as hybrid or mixed-mode courses) are classes where a portion of the traditional face-to-face instruction is replaced by web-based online learning. How much of the face-to-face instruction must be replaced by online coursework? This question will vary greatly by class, discipline, and learning objectives. [The Sloan Consortium](#) (a professional organization dedicated to postsecondary online learning) defines blended learning as a course where 30%-70% of the instruction is delivered online. While this is a useful guideline, it may not be sufficient to cover every blended learning configuration. The [EDUCAUSE Learning Initiative](#) provides many useful resources related to blended learning, including a report on a national focus session and a framework for faculty workshops. The National Center for Academic Transformation has done a significant amount of work related to course redesign, including the innovative use of technology for blended learning. The addition of technology to any academic program must be accompanied by fundamental process re-design.

For-Profit Colleges

[Too Big To Fail: The Role of For-Profit Colleges and Universities in American Higher Education](#)

In this 2011 article in *Change*, William Tierney argues that for-profit colleges and universities have a vital role to play in the 21st century, for without them we will not reach the goals for college attainment that the US needs to reach to maintain a vital economy. But while the for-profit institutions must have a place at the postsecondary table, they also need to accept the responsibility and oversight that participation in postsecondary education demands. The author explores the key sticking points related to that responsibility: *ensuring ethical admissions practices, educating consumers about debt burden, skills that lead to good jobs, and the regulatory role of government.*

Competency-Based Learning

A 'Disruptive' Look at Competency-Based Education

In this 2012 Center for American Progress Brief, Louis Soares provides a short primer on competency-based education in postsecondary education, introduces the four elements of disruptive innovation theory and use these elements as a guide to study education initiatives that could promote disruptive innovation. His four-element analytical lens shows that the technologies, organizational experimentation, and standards are coalescing in ways that make competency-based education a potential game changer in the delivery and affordability of postsecondary education. He provides a number of examples of how postsecondary institutions, policymakers, employers, and philanthropies are trying to build the infrastructure necessary for competency-based education to take off. Lastly, he outline a number of recommendations for policymakers on how to facilitate disruptive innovation to transform higher education.

Principles for Developing Competency-Based Education Programs

In this 2014 article in *Change*, Sally M. Johnstone and Louis Soares point out that competency-based education (CBE) is acknowledged to be a disruptive innovation which can be generative for colleges and universities. CBE requires a deep exploration and often significant re-design of administrative, financial, and academic systems within institutions. This process, when done well, brings together leadership, administrators, and faculty in conversations that lead to a new equilibrium between quality and affordability. The authors explain that successful models demonstrate that CBE can fit into existing campus structures, if certain principles are followed: The degree reflects robust and valid competencies; students are able to learn at a variable pace and are supported in their learning; effective learning resources are available any time and are reusable; and assessments are secure and reliable.

Unbundling

Disaggregating the Components of a College Degree

Unbundling is the process of breaking down a recently stable product unit into component parts, forcing margin reduction and lower prices for consumers. Originally, the university bundle included courses, food, and board. Over time, in an effort to add value, they've added more services, at first academic (extracurriculars, better libraries, study abroad) and now luxury (rock-climbing walls, fitness centers). Higher education is still trending towards increasing bundle size. The more they bundle, the more they can raise prices. So when can we expect higher education to start trending in the other direction, towards unbundling? The goals of this chapter, written by Michael Staton Inigral for the American Enterprise Institute Conference, "Stretching the Higher Education Dollar" (August 2, 2012) are to identify the various jobs that colleges and universities currently undertake as part of their "value-added process," identify which of those are easier and harder to unbundle, and describe some of the ventures that have emerged to provide some part of the postsecondary experience. The author's point is not to argue that these entrepreneurs will create new products and services to replace the existing system, only that their

presence suggests a market opportunity to which higher education institutions would be wise to respond.

Badges

Educational Badges

This EDUCAUSE brief provides brief answers to important questions about badges: What is it? How does it work? Who's doing it? Why is it significant? What are the downsides? Where is it going? What are the implications for teaching and learning?

"Badges" Earned Online Pose Challenge to Traditional College Diplomas

In this 2012 article in *The Chronicle of Higher Education*, Jeffery Young *argues that* traditional college diplomas look elegant when hung on the wall, but they contain very little detail about what the recipient learned. And the transcripts of courses taken and grades earned are only modestly more helpful to an employer who is looking to hire a college graduate with certain skills. For some, badges are a step in the right direction. The biggest push for badges is coming from industry and education reformers, rather than from traditional educational institutions. Mozilla, the group that develops the Firefox Web browser, is designing a framework to let anyone with a web page—colleges, companies, or even individuals—issue education badges designed to prevent forgeries and give potential employers details about the distinctions at the click of a mouse. Hundreds of educational institutions, traditional and nontraditional, have flocked to a \$2-million grant program run in coordination with the John D. and Catherine T. MacArthur Foundation, seeking financial support to experiment with the educational-badge platform. A MacArthur Foundation supported network, The Badge Alliance, has committed to increase access to opportunities in education and the workforce using open badges to 10 million students and workers worldwide. Students using badges might display dozens or even hundreds of merit badges on their online résumés detailing what they studied. And students could start showing off the badges as they earn them, rather than waiting four years to earn a diploma. Some observers see a darker side, though, charging that badges turn all learning into a commodity, and thus cheapen the difficult challenge of mastering something new. Rather than dive into an assignment out of curiosity, some fear that too many students might focus on an endless pursuit of badges.

Learning Outcomes Assessment

Knowing What Students Know and Can Do: The Current State of Student Learning Outcomes Assessment in US Colleges and Universities

Authored by George D. Kuh, Natasha Jankowski, Stanley O. Ikenberry, & Jillian Kinzie, and issued by the National Institute for Learning Outcomes Assessment, this 2014 report presents the results of a national survey of provosts and chief academic officers. The results of the survey indicate that assessment of student learning keeps climbing upward on the national higher education agenda. Among their findings, the authors report that clearly articulated learning outcomes are now the norm; the prime driver of assessment

is the expectations of regional and program or specialized accrediting agencies; substantially more student learning outcomes assessment is underway now than a few years ago and the range of tools and measures to assess student learning has expanded; meeting accreditation expectations heads the list for how assessment evidence is used, but internal use by campuses is growing and is considered far more important than external use; provosts perceive substantial support on their campuses for assessment; and that faculty are the key to moving assessment forward. As they enumerate a number of implications of these findings, the authors note that colleges and universities must cultivate an institutional culture that values gathering and using student outcomes data as integral to fostering student success and increasing institutional effectiveness—as contrasted with a compliance exercise.

Using Evidence of Student Learning to Improve Higher Education

Dynamic changes are underway in American higher education. New providers, emerging technologies, cost concerns, student debt, and nagging doubts about quality all call out the need for institutions to show evidence of student learning. From scholars at the National Institute for Learning Outcomes Assessment (NILOA), *Using Evidence of Student Learning to Improve Higher Education*, published in 2015, presents a reframed conception and approach to student learning outcomes assessment. The authors explain why it is counterproductive to view collecting and using evidence of student accomplishment as primarily a compliance activity. As Kuh and Ikenberry outline in Chapter 1 “....this is not a how-to book on the assessment of student learning..... Our preoccupation is with making assessment consequential. That is, for us, the gnawing question is this: What can institutions and others with an interest in quality assurance in American higher education do to make assessment more useful and productive so that the results of assessment efforts are put to better use? To address that challenge, the following chapters search for answers to nine key questions. 1. What counts as evidence? 2. What are relevant examples of productive use of evidence of student learning? 3. How can assessment work be better organized and led? 4. What can institutions do to involve in the assessment process those whose contributions are most central to improving student learning? 5. How can campus leaders at all levels create and sustain a culture of evidence that emphasizes improvement? 6. With its role in prompting assessment well established, what can accreditors do to become even more helpful to promoting a culture of evidence for improvement in higher education? 7. What has been and will likely be the influence of state and federal policy and higher education affinity groups on student learning outcomes assessment? 8. What can be done to ameliorate the debilitating effects of initiative fatigue that often come with assessment work and related improvement efforts? 9. How can institutions best respond to the clamor for more transparency about student and institutional performance?

The Degree Qualifications Profile

[The Degree Qualifications Profile: What It Is and Why We Need It Now](#)

It is only recently that concerted efforts have been mounted to bring greater clarity and more widespread agreement about what credentials and degrees should represent by more precisely defining what college students in this country need to know and be able to do and at what level of proficiency. In this 2013 article in *Change*, Natasha Jankowski, Pat Hutchings, Peter Ewell, Jillian Kinzie and George Kuh describe the status and aspirations of one major effort, Lumina Foundation's Degree Qualifications Profile (DQP). The authors provide a brief overview of the DQP's defining features, a summary of general trends in its use, brief descriptions of several projects, and an analysis of the DQP's implications for assessment. They conclude with some comments about the promise of the DQP for both individual institutions and for higher education writ large.

The Bologna Process

[The Bologna Process: European Higher Education Area](#)

The Bologna Process is a series of ministerial meetings and agreements between 47 European countries designed to ensure comparability in the standards and quality of higher education qualifications. The basic framework adopted is of three cycles of higher education qualifications, defined in terms of learning outcomes. These are statements of what students know and can do on completion of their degrees. In describing the cycles, the framework makes use of the [European Credit Transfer and Accumulation System](#) (ECTS). The 1st cycle is typically 180–240 ECTS credits, usually awarding a bachelor's degree in 3 – 4 years. The 2nd cycle is typically 90–120 ECTS credits (a minimum of 60 on 2nd-cycle level), usually awarding a master's degree in 1 – 2 years, and the 3rd cycle is a doctoral degree with no ECTS range given, but usually awarded after 3 – 4 years. One academic year corresponds to 60 ECTS-credits that are equivalent to 1,500–1,800 hours of study. With the Bologna Process implementation, higher education systems in European countries are to be organized in such a way that it is easy to move from one country to the other (within the European Higher Education Area) for the purpose of further study or employment.

[Learning Accountability from Bologna](#)

In this 2008 policy brief, Clifford Adelman at the Institute for Higher Education Policy, argues that the Bologna Process is the most far-reaching and ambitious reform of higher education ever undertaken. Bologna Process has created the capacity to provide students with clear indications of what their paths through higher education look like, what levels of knowledge and skills will qualify them for degrees, and what their degrees mean. These are road signs that are sorely lacking now in the United States. For U.S. public policymakers, the primary message from the Bologna Process should be to worry less about how many pieces of paper we pass out, how many credits qualify someone for those pieces of paper, and how long it takes a highly mobile student population to arrive in a graduation line, and more about the knowledge, the application of knowledge, the

information identification and retrieval skills, and the degree of learning autonomy students acquire and take with them into economic and community life.

Prior Learning Assessment

The Transformation of Higher Education through Prior Learning Assessment

In this 2011 article published in *Change*, Anya Kamenetz explains that while thousands of colleges grant credit by Prior Learning Assessment, or PLA, the portion of students who actually get these credits on their transcript is very small. But given that most students don't start and finish at the same college, and that lots of important learning takes place outside school, Prior Learning Assessment could be a vitally important practice. The author argues that it can raise productivity in higher education, enabling millions of students who have stopped short of a degree to complete their education, and facilitating the application of more authentic and student-centered forms of assessment. PLA also offers a ready way to incorporate the past decade's revolution in open courseware and open learning into the existing framework of accreditation and assessment, making a college degree more affordable and accessible to all. The nonprofit Council for Adult and Experiential Learning (CAEL) has pioneered much of the research on prior learning and portfolio-based assessment. CAEL is currently piloting a national service for PLA called LearningCounts.org, created to work directly with colleges to extend the reach of PLA.

Productivity in Higher Education

Improving Measurement in Productivity in Higher Education

This National Research Council report, published in 2012 by the National Academies Press, was put together by a panel chaired by Teresa A. Sullivan. The panel notes that, from the perspectives of individual industries and enterprises, gains in productivity are a primary means of offsetting increases in the costs of inputs, such as hourly wages or raw materials. Likewise, in higher education, productivity improvement is seen as the most promising strategy for containing costs in the continuing effort to keep college education as affordable as possible. Without technology-driven and other production process improvements in the delivery of service, either the price of a college degree will be beyond the reach of a growing proportion of potential students or the quality of education will erode under pressures to reduce costs. The panel concluded, however, that measuring productivity in higher education is especially challenging and that the performance of the sector cannot be fully organized and summarized in a single measure. Therefore it becomes all the more important to monitor supporting information, especially regarding the quality of output (e.g., student outcomes). Without this awareness, measures will surely be misused and improper incentives established. The panel does propose a "multi-factor productivity model" as a preliminary step to stimulate further research.

Changing the Production Function in Higher Education

This essay was written by Candace Thille and published by the American Council of Education as part of its Making Productivity Real series. The author notes that “higher education in America faces the seemingly impossible challenge of serving more students, serving a greater variety of students, and reducing the cost of instruction—while simultaneously improving quality. Merely tweaking longstanding strategies to achieve incremental improvement is no longer enough. Not only is there a need to seek entirely new approaches, insights and models, but that need is urgent. New approaches offer scalable processes that help colleges to lower cost-per-degree and make significant improvements to student learning outcomes and retention rates”. Using the illustration of the work of the Open Learning Initiative at Carnegie Mellon University (OLI) where she serves as Director, the author argues that “insights from the science of learning combined with advances in information technology and alternative models of course design, implementation, and evaluation show promise in supporting traditional higher education to change the production function and meet the seemingly impossible challenge”.

Electronic Portfolios

Making Learning Visible and Meaningful Through Electronic Portfolios

This article, authored by Terrel L. Rhodes and published in *Change in 2011*, focuses on student electronic portfolios, or e-portfolios, as a rapidly emerging, powerful, iterative mode for capturing student work and enabling faculty to assess student learning. Long before the advent of e-portfolios, collections of student work were a means by which students in the arts and architecture could demonstrate their learning and accomplishments. But technology has provided the means to do this more easily, in multiple modes, and portably. So the use of portfolios in electronic form has rapidly spread to other fields and has been taken up for other purposes. Forty percent of campuses of all types – large and small, public and private, research and liberal arts, and community colleges—recently reported using student e-portfolios. E-portfolios provide a means for collecting assigned work, as well as students' accomplishments in non-classroom settings, so that faculty, internship supervisors, and others can assess it and aggregate or disaggregate the results, depending on the purposes of the assessment.

MOOCs

What Campus Leaders Need to Know about MOOCs

MOOCs (massive open online courses) are courses delivered over the web to potentially thousands of students at a time. In a **MOOC, lectures are typically “canned,” quizzes and testing are automated, and student participation is voluntary.** They attain large scale by reducing instructor contact with individual students, though some models allow student feedback to partly guide discussion. Initial MOOCs have often been from disciplines that lend themselves to quantitative assessment, such as engineering, computer science, and math. However, MOOCs are becoming applicable to all fields as the platforms enable assessment methods such as peer review. MOOCs present an

opportunity for institutions to experiment with extending their brand or to diversify their instructional portfolio, and they might also catalyze **new approaches to credentialing**.

Demographic Changes

Higher Education and the New Demographics

Universities are being pressed to serve a student body that is vastly different from only a few decades ago. The most rapid growth in the US population is among groups that are traditionally more likely to drop out of school, less likely to enroll in college preparatory course work, less likely to graduate from high school, less likely to enroll in college, and least likely to persist to earn a baccalaureate degree. In this 2002 article in *Change*, Watson Swail raises important questions about how colleges and universities will address the challenges posed by changing demographics, not only in the US but across the globe. What role will U.S. higher education play in a global market? Will U.S. institutions feel pressure to serve the growing world population? And how will the emerging competitiveness of a global market for higher education impact U.S. policy and practice? On the domestic front, how will institutions act to meet the challenges posed by the new demographics? How will we keep higher education affordable? How will the country better prepare new kinds of students for postsecondary study? Who will be left behind in the competitive race, in terms of both citizens and institutions?

Evidence of Learning

Evidence of Learning: The Case for an Integrated Competency Management System for Students, Higher Education and Employers

The traditional approaches to measuring and sharing an individual's learning no longer match the expectations of students, employer, and higher education administrators. The credit hour was never intended to measure what students have learned. Post-graduation transcripts and resumes are one-dimensional snapshots of an individual student's knowledge and skills; perpetuating reliance on formal credentials earned and an institution's brand to signal the aptitude of a job candidate. In the job market, transcripts and resumes used as proofs do not fully capture or communicate a graduate's capabilities and understate skills such as critical thinking, teamwork, and problem solving; skills that employers have repeatedly said they value. *Evidence of Learning: The Case for an integrated Competency Management System for Students, Higher Education and Employers* is the latest research from Tyton Partners (formerly Education Growth Advisors) and was funded by the Bill & Melinda Gates Foundation. The report establishes a common definition and framework of "Evidence of Learning," identifies gaps that deter alignment of processes and systems, and helps leaders in higher education link disconnected solutions to better serve their own needs, the needs of students, and the needs of employers. Tyton Partners defines "Evidence of Learning" as the body of knowledge, skills, and experience achieved through both formal and informal activities that an individual accumulates and validates during their lifetime. This definition provides a point of common ground as colleges and universities begin

to reassert their roles as lifelong stewards of students' individual records of learning. A second publication [Evidence of Learning: Understanding the Supplier Ecosystem](#), provides definitions and commentary regarding seven markets – Accreditation Services, Alternative Education Programs, Assessment Services, Learning Authentication Services, Portfolio Platforms, Student Support and Success Networks, and Workforce Alignment Platforms – comprising the Evidence of Learning ecosystem. This complementary research reviews these markets' intersection with the Evidence of Learning framework and highlights a selected index of companies and organizations active across the markets.

Incubators

[Higher Ed Joins High-Tech Revolution by Investing in Young Companies](#)

This Chronicle of Higher Education article, published on Sept, 13, 2013, describes how a growing number of universities are developing in-house education-technology incubators that help entrepreneurial start-ups get off the ground by providing them with research, mentorship and connections and linking them to capital. The universities hope to make a profit and provide their faculty with access to cutting-edge ideas. Such programs follow the lead of non-university based education-focused incubators and accelerators that have sprung up across the country, including LearnLaunchX in Boston and Socratic Labs in New York City. The University of Pennsylvania's Graduate School of Education recently created an incubator specifically geared toward education start-up companies. This venture, called Education Design Studio Inc., will have participants come to Philadelphia one week per month for six months and stay in contact for more than a year after that. [The Education Design Lab](#), created by the deLaski Family Foundation based in Washington DC, operates with a somewhat different model. Here the foundation reached out to George Mason University as its founding partner and has since added a number of design and thought partners that include universities as well as profit and non-profit organizations and government agencies. The lab is less focused on technology, attempting to innovate not by supporting ideas proposed by entrepreneurs but by starting with an educational problem, designing a solution in collaboration with industry and testing ideas through learning pilots. The lab's goal is to maintain a network of thinkers and doers committed to improving higher education through design as well as to develop and roll-out commercially viable solutions that have self-sustaining revenue streams. It serves as a valuable resource with publications such as [The Ed-Tech Revolution is about to become the Learner Revolution](#).

5. Prominent Transformational Ventures

For-Profit Ventures

[Minerva Project](#)

Minerva Project received \$25 M in venture funding from Benchmark Capital in April 2012 to create a four-year undergraduate program in partnership with the Keck Graduate Institute (KGI), a member of the Claremont University Consortium. Now the venture is

called the [Minerva Schools at Keck Graduate Institute](#). The target market is the developing world's rising middle class who aim for an elite American education. Though the school's headquarters is in San Francisco, all courses are taught via an interactive online platform. Thus, both faculty and students can be anywhere in the world where there is sufficient bandwidth. In March 2014, Minerva received accreditation for three of its programs: the Bachelor of Science in Social Sciences, the Bachelor of Arts in Arts and Humanities, and the Bachelor of Science in Computational Sciences. For its 2014 Founding Class, Minerva received 2,464 applications and granted 69 acceptances resulting in a 2.8% acceptance rate making Minerva the most selective undergraduate program in U.S. history. The school's Founding Class matriculated in fall 2014, numbering 29 students, each of whom received a full four-year scholarship. An additional \$70,000,000 in funding to the Minerva Schools at KGI was announced in October 2014. The 2019 class is expected to number 200-300, with tuition targeted at \$10,000. The size of the entering class is expected double each year. Minerva uses a proprietary tool called its "Active Learning Forum" that integrates face-to-face and distance education through a digital world of highly collaborative learning environments, lecture-based features, integrative breakout sessions, one-on-one collaboration tools, games, learning tools, and simulations. Also, Minerva uses a modularized, self-paced learning model. Students take classes, but the content of these classes may come from a variety of sources, such as Minerva's own online courses, MOOCs, open educational resources, conversations with peers, or simply by going out and exploring the world in such a way that learning can be measured and accounted for through formal assessment.

[Coursera](#)

Coursera is a for-profit educational technology company, founded by computer science professors Andrew Ng and Daphne Koller from Stanford University, that offers massive open online courses (MOOCs). Coursera works with universities to make some of their courses available online, and offers courses in physics, engineering, humanities, medicine, biology, social sciences, mathematics, business, computer science, music, and other subjects. As of January 2015, Coursera has 11 million users in more than 900 courses from 118 institutions. Courses are free of charge and one is able to earn a verified certificate in more than 200 specialty areas.

[Udacity](#)

Udacity is a for-profit educational organization offering massive open online courses (MOOCs). Founded in 2012 by Sebastian Thrun, David Stavens, and Mike Sokolsky, Udacity is the outgrowth of free computer science classes offered in 2011 through Stanford University. While it originally focused on offering university-style courses, it now focuses more on vocational courses for professionals. As of April 2014, Udacity has 1.6 million users in 12 full courses and 26 free courseware.

[Knewton](#)

Knewton is an adaptive learning company that has developed a platform to personalize educational content. Knewton technology enables the company to perform "sophisticated,

real-time analysis of reams of student performance data. Knewton uses adaptive learning technology to identify each student's particular strengths and weaknesses. Concepts are tagged at very specific levels, which allows the platform to make custom recommendations based on students' proficiency and needs. In January 2011, Arizona State University began powering developmental math and [blended learning](#) courses with Knewton's adaptive technology. The Knewton platform allows schools, publishers, and developers to provide adaptive learning for any student. Also in 2011, Knewton announced a partnership with [Pearson Education](#) to enhance the company's digital content. Since then, additional partners announced include Houghton Mifflin Harcourt, Macmillan Education, Triumph Learning, and over a dozen others.

[StraighterLine](#)

StraighterLine is a for-profit company that offers low-price, online higher education courses that are equivalent to general courses required for a bachelor's degree. It began operations in 2009 and reported serving more than 4,000 students through 2011. The American Council on Education's College Credit Recommendation Service (ACE CREDIT) has evaluated and recommended college credit for StraighterLine courses. StraighterLine offers the students the ability to take any number of online college courses for \$99 a month plus \$49 a course, or ten courses (marketed as the equivalent of an entire freshman year) for \$999. StraighterLine offers more than 50 college courses and 38 tests as of December, 2012. Recently the company announced strategic partnerships with the Educational Testing Service and the makers of the Collegiate Learning Assessment, as part of a plan to expand into offering validated tests from leading educational organizations. In 2012, StraighterLine launched professor led courses. [Professor Direct](#) allows professors to set their own premiums on courses, charging any amount of their choosing per student. This is the first time a business or school has allowed professors to set their own prices for courses that lead to college credit. Students can choose between 8 or 15 week cohorts, or self-paced formats. At time of launch, StraighterLine had 15 professors with masters or doctorate degrees.

[Lumen Learning](#)

Lumen Learning provides high quality open courseware and support for educational institutions to help them eliminate textbook costs, broaden access to educational materials and improve student success through the effective use of open-educational resources (OER). Dr. David Wiley and Kim Thanos, founders of Lumen learning, collaborated on the Next Generation Learning Challenges grant-funded Kaleidoscope Open Course Initiative in 2012 to replace textbooks with OER in community college classrooms. The project was successful. It cut the cost of required textbooks to zero. Student success rates in some courses increased by over 10% compared to the same courses offered by the same instructors in prior years. Adding this concrete proof to the body of evidence supporting OER, David and Kim decided to join forces as Lumen Learning to help more educational institutions and students realize gains like these. They do this by building and supporting Candela Open Courses, open courseware they design collaboratively with partner institutions.

2U

Founded in 2008, 2U is an educational technology company that partners with leading nonprofit colleges and universities to develop post-graduate online degree programs. The company supplies its partner universities with a cloud-based software-as-a-service platform coupled with a suite of technology-enabled services, including coursework design, infrastructural support and capital to deliver instruction to students. The online degree programs 2U develops for universities feature live video classes, as well as a socially-inclined online learning platform that allows for close interaction between students and professors. The approach, which the company refers to as No Back Row, also includes a focus on student outcomes with small class sizes, career services, and field placements. This approach has led to a student retention rate of 84 percent. Students pay standard tuition, but instead of going to class once a week, they meet in a live video chat room with the professor and the other students. 2U signs long-term contracts, averaging between 10–15 years in length, with each of its partner universities. Contracts include a revenue sharing agreement between 2U and the school. Course content is also enhanced for mobile devices.

Academic Partnerships

Academic Partnerships (AP) helps public and private not-for-profit universities in the United States and top international institutions bring their academic programs online to reach a global audience. With offices around the world, AP assists institutions with the conversion of their traditional degree programs and certificates into an online format, the recruitment of qualified students, domestically and internationally, and with systems to support enrolled students through graduation. AP provides upfront capital, infrastructure, distance learning technologies, faculty support and coaching and retention strategies. Recruiting international students into partner universities' online programs is done through a distance learning networks in Latin America, Europe, North Asia, Southeast Asia, Australia and Oceania.

University Ventures

Venture and equity financing for educational technology companies soared to nearly \$1.87 billion in 2014, up 55 percent from the year before, according to a new report from [CB Insights](#), a venture capital database. Nonetheless, University Ventures (UV) is the only investment firm focused exclusively on the global higher education sector. Started in 2012 as a \$100 million investment fund, UV added a second and larger fund in 2014. UV pursues a differentiated strategy of 'innovation from within' rather than 'disruption from outside'. It believes that, through innovation, colleges and universities around the world will be successful in fulfilling and expanding their missions. In partnership with top-tier universities and colleges, University Ventures strategic and financial limited partners aim to realize market-leading returns while playing a positive and sustainable role in the transformation of higher education. This investor base comprises a broad spectrum of stakeholders in higher education across the US, Europe and Asia and includes founders of successful education enterprises, major University endowments, and leading education philanthropists. All investors are aligned with UV's

mission of doing well by doing good, and are committed to placing student outcomes co-equal with financial returns in every investment. UV investments typically fall into one of two categories. First, companies involved in delivering programs, products or services that dramatically improve the accessibility and affordability of higher education. Second, companies involved in delivering high-value programs, products or services that provide a clear and indisputable return on investment to students.

Not-For Profit Educational Entities

Association of American Colleges and Universities

Liberal Education and America's Promise (LEAP) is a national advocacy, campus action, and research initiative of the Association of American Colleges and Universities that champions the importance of a twenty-first century liberal education—for individuals and for a nation dependent on economic creativity and democratic vitality. LEAP responds to the changing demands of the twenty-first century—demands for more college-educated workers and more engaged and informed citizens. Today, and in the years to come, college graduates need higher levels of learning and knowledge as well as strong intellectual and practical skills to navigate this more demanding environment successfully and responsibly. Launched in 2005, LEAP challenges the traditional practice of providing liberal education to some students and narrow training to others. In 2015, the LEAP Challenge calls on colleges and universities to engage students in Signature Work that will prepare them to integrate and apply their learning to a significant project. LEAP embraces a 21st-Century Definition of Liberal Education and promotes: Essential Learning Outcomes—as a guiding vision and national benchmarks for college learning and liberal education in the 21st century. Principles of Excellence—offering both challenging standards and flexible guidance for an era of educational reform and renewal. High-Impact Educational Practices—that help students achieve essential learning outcomes. Authentic Assessments—probing whether students can apply their learning to complex problems and real-world challenges, and Inclusive Excellence—to ensure that every student gets the benefits of an engaged and practical liberal education.

National Center for Academic Transformation

Founded by Carol Twigg, the National Center for Academic Transformation (NCAT) is an independent, nonprofit organization that provides leadership in using information technology to redesign learning environments with the goal of producing better learning outcomes for students at reduced costs. NCAT analyzes program results to identify and document techniques, practices, and models for future practice, communicates lessons learned by writing and speaking about successful patterns and practices that lead to improvements and then partners with others to scale proven approaches to impact greater numbers. NCAT is most widely known for its success redesigning math courses. These redesigns at NCAT partner institutions (both two-year and four-year) have increased the percentage of students successfully completing a developmental math course by 51% on average and reduced the cost of instruction in these courses by 30% on average. Similar results have been achieved when redesigning college level math

courses. The percentage of students successfully completing a redesigned college-level math course increased by 25% on average while the cost of instruction in these courses was reduced by 37% on average.

National Institute for Learning Outcomes Assessment

Established in 2008, the mission of the **National Institute for Learning Outcomes Assessment** (NILOA) is to discover and disseminate ways that academic programs and institutions can productively use assessment data internally to inform and strengthen undergraduate education, and externally to communicate with policy makers, families and other stakeholders. NILOA assists institutions and others in discovering and adopting promising practices in the assessment of college student learning outcomes. Documenting what students learn, know and can do is of growing interest to colleges and universities, accrediting groups, higher education associations, foundations and others beyond campus, including students, their families, employers, and policy makers.

Competency-Based Educational Network

The Competency-Based Education Network (C-BEN) is a group of colleges and universities working together to address shared challenges to designing, developing and scaling competency-based degree programs. In early 2014, the network selected an initial cohort of participating colleges and universities; the cohort includes 17 institutions and two public systems serving 42 campuses. The institutions will take part in a research-and-development phase, funded by Lumina Foundation, to provide an evidence-based approach to advancing high-quality competency-based education capable of serving many more students of all backgrounds. Participating institutions either offer degree programs with well-defined learning outcomes and rigorous assessment or are on their way to creating them. The C-BEN Steering Committee, comprising higher education innovators from several of these institutions, will guide the work and periodically will issue additional calls for applications.

The Badge Alliance

A MacArthur Foundation supported network, The Badge Alliance has committed to increase access to opportunities in education and the workforce using open badges to 10 million students and workers worldwide. The Alliance made the announcement about Open Badges – digital credentials for knowledge and skills – at the Clinton Global Initiative America. More than 14,000 independent organizations are already issuing badges to document formal and informal learning and workplace training, providing more ways for students and workers to get verifiable recognition that can lead to increased access to opportunities for further education and career success. The lead partners are urging learning organizations, universities, school districts, and employers across the country to join the open badges commitment.

The Saylor Academy

The Saylor Foundation is a non-profit organization, established in 1999 by Michael J. Saylor, with a mission to make education freely available to all. The Foundation is committed to developing and advancing inventive and effective ways of harnessing technology in order to drive the cost of education down to zero. The Foundation finds, vets and assembles openly available texts and resources into courses which are then peer-reviewed before being published. This content is always openly licensed for use by other organizations and individuals. On its website, The Saylor Academy offers 317 free, college-level courses. While these are not accredited within any traditional system, they have been featured as a prime candidate for launching a system of alternative accreditation through the use of badges. The Foundation has said that their hope is that badges will give rise to an alternative source of credentialing for skills and knowledge separate from that used by traditional colleges and universities.

Khan Academy

Khan Academy is a non-profit educational organization created in 2006 by Salman Khan to provide "a free, world-class education for anyone, anywhere." The organization, with significant backing from the Bill & Melinda Gates Foundation and Google, produces micro lectures in the form of YouTube videos. In addition to micro lectures, the organization's website features practice problems and tools for educators. All resources are available for free to anyone around the world. In the beginning, Khan Academy offered videos mostly about mathematics. Thanks to donations, Khan Academy has been able to expand its faculty and offer courses about history, healthcare, medicine, finance, physics, chemistry, biology, astronomy, cosmology, American civics, art history, economics, music, and computer science. As of June 2014, Khan Academy's website has been translated to 23 languages and its videos to 65.

Peer to Peer University

Peer 2 Peer University (P2PU) is a non-profit, online, open learning community which allows users to organize and participate in courses and study groups to learn about specific topics. The University was started in 2009 with funding from the Hewlett Foundation, the Shuttleworth Foundation and the University of California Irvine, with its first of courses in September of that year. P2PU charges no tuition and courses are not accredited. However, some courses provide the opportunity for recognition of achievements through badges. P2PU offers some of the features of massive open online courses (MOOCs), but is focused on people sharing their knowledge on a topic or learning about a topic offered by another user. Unlike typical massive open online courses, anyone can create a course as well as take one. Additionally, because of its less hierarchical nature, P2PU activities need not necessarily be Courses; the admin of the learning environment can select from Study Group and Challenge as well as creating their own term. Class participants communicate live through technologies such as Skype and IRC as well as asynchronously through the P2PU website, allowing geographically dispersed classmates to have discussions. As of September 2011, P2PU claims "a community of about 1,000" and has over 50 courses open for sign-up.

Online Learning Consortium

The Online Learning Consortium (OLC) is the leading professional organization devoted to advancing quality online learning. With major support from the Alfred P. Sloan Foundation, it was originally established in 1992 as the Sloan Consortium of Colleges and Universities (Sloan-C). Rebranded as the Online Learning Consortium (OLC) in 2014, the organization has evolved into “an institutional and professional leadership organization dedicated to integrating online education into the mainstream of higher education, helping institutions and individual educators improve the quality, scale, and breadth of online education.” The OLC provides a range of member services including annual conferences, professional development webinars, publishing the *Journal of Asynchronous Learning Networks*, and sponsoring research initiatives. In 2012, it had approximately 300 institutional and 700 individual dues-paying members.

Learning Counts

Started in January 2011, Learning Counts is a project of the Council for Adult and Experiential Learning, the American Council on Education and the College Board, in which older students take an online course that teaches them to prepare a portfolio that shows what they have learned from work and life experience. The portfolios — one for each subject area in which they are seeking credit — are then submitted to an outside evaluator, who decides whether they should get academic credit.

EdX

EdX is a massive open online course (MOOC) provider and online learning platform. It hosts online university-level courses in a wide range of disciplines to a worldwide audience, some at no charge. It also conducts research into learning based on how people use its platform. EdX differs from other MOOC platforms, such as Coursera and Udacity, in that it is nonprofit and runs on an open-source software platform. EdX was founded by the Massachusetts Institute of Technology and Harvard University in May 2012. EdX was created for students and institutions that seek to transform themselves through cutting-edge technologies, innovative pedagogy, and rigorous courses. There are currently more than 70 schools, nonprofits, corporations, and international organizations that offer or plan to offer courses on the EdX website. EdX offers certificates that verify course completion as well as others that verify completion of a series of courses in a designated sequence. Courses are offered in biology, business, chemistry, computer science, economics, finance, electronics, engineering, food and nutrition, history, humanities, law, literature, math, medicine, music, philosophy, physics, science, statistics and more. As of 22 October 2014, EdX had more than 3 million users taking over 300 courses online.

HASTAC

This is the acronym for the *Humanities, Arts, Science and Technology Alliance and Collaboratory*, an alliance of nearly 13,000 humanists, artists, social scientists, scientists and technologists working together to transform the future of learning. Founded in 2002, HASTAC (“haystack”) serves as a community of connection where members share news, tools, research, insights, and projects to promote engaged

learning for a global society. Issues of access and equality are as important to HASTAC's mission as the latest technological innovations; creative contribution is as important as critical thinking. Keywords representing this perspective include: learning and teaching, education design, digital humanities, media, communication, social engagement, and the collaborative workplace. HASTAC is an alliance of individuals and institutions inspired and motivated by the conviction that collaborative thinking extends across traditional disciplines, across the boundaries of academe and community, across the "two cultures" of humanism and technology, across the divide of thinking versus making, and across social strata and national borders. HASTAC is a free and open access community. By registering one can receive newsletters and announcements, blog one's ideas and questions, join relevant groups, post funding and job opportunities, showcase new tools, find collaborators for projects, and share CFPs. HASTAC administers the Digital Media and Learning Competition, a program supported by the John D. and Catherine T. MacArthur Foundation designed to find and to inspire the most novel uses of new media in support of learning. Over the past five years, the Competition has awarded \$10 million to more than 100 projects—including games, mobile phone applications, virtual worlds, social networks, and digital badge platforms—that explore how technologies are changing the way people learn and participate in daily life.

Not-For Profit Accredited Universities

WGU - Western Governors University

Western Governors University (WGU) is a private, nonprofit, online American university based in Salt Lake City, Utah. The university was founded by 19 U.S. governors in 1997 after the idea was formulated at a 1995 meeting of the Western Governors Association. The university uses a competency-based model with students working online in coordination with faculty mentors, with whom frequent phone communication is kept, and taking proctored tests online via webcam and other online proctoring technologies. In 2010, enrollment reached 20,000 students for the first time and the first state-established offshoot, WGU Indiana, was founded. In 2011, WGU Indiana, WGU Texas and WGU Washington were established. These were followed in 2013 by WGU Tennessee and WGU Missouri. These state-affiliated offshoots share the same academic model, faculty, services, accreditation, and curricula as WGU and were established to give official state endorsement and increased name recognition to WGU in those states. At the same time, WGU has students and graduates in all 50 states, the District of Columbia, U.S. territories, parts of Canada, and on U.S. military bases worldwide.

Southern New Hampshire University

Saving Higher Education: The Integrated, Competency-Based Three-Year Bachelor's Degree Program, written by Bradley, Seidman and Painchaud in 2011, describes Southern New Hampshire University's competency-based three-year bachelor's degree program. The book provides a blueprint for creating, sustaining, and growing such a program, one that is designed to make higher education more efficient and cost-effective.

MIT

In 2013, the Institute-wide Task Force on the Future of MIT Education released its preliminary report. That report discussed breaking courses into various types of modules, enabling a disaggregation of the functions and processes of education, to be reassembled in multiple pathways and various temporal orderings. Gone are expectations of the “right” time-to-degree or the necessity of four years on campus. Terms such as “competency based assessment” fit naturally into the disaggregation discussions. In its final 2014 report, the Task Force offered a series of recommendations for how MIT can continue to transform education for future generations of learners. While the Final Report is both more directed and less radical in some of its conclusions, its first recommendation moves in the direction of institutionalizing the kind of out-of-the-box thinking that permeated the Preliminary Report: “The Task Force recommends that MIT establish an Initiative for Educational Innovation to build on the momentum of the Task Force, enable bold experimentation, and realize the future the Task Force has imagined for education on campus and beyond.”

Arizona State University

In Pursuit of Excellence and Inclusion: Managing Change at Arizona State University, written by Kevin Guthrie, Christine Mulhern and Martin Kurzweil and published by ITHAKA in 2015, explores two questions: Is it possible for a large public university with a \$2 billion budget to change, innovate, and embrace a new direction? And if so, what does it take to make that happen? The data the authors report on institutional performance indicate that ASU is growing and becoming more productive on a variety of measures, and is making progress on becoming a more inclusive institution. Interviews with leadership demonstrate strongly that the organizational culture has changed dramatically. The vision of the institution has been clearly communicated, is well understood, and has been embraced by the senior leadership. Those leaders also report that these views are widely held across the university and that the commitment to change has been institutionalized. Several people independently cited the same figure—80%—as an estimate of the percentage of faculty who have embraced the new approach. Several also indicated that even if President Crow were to leave tomorrow, the university would continue on its current trajectory. See also President Crow’s 2015 book, [Designing the New American University](#).

The University of Minnesota - Rochester

The University of Minnesota –Rochester was established in 2006 to prepare students for careers in medicine and the health professions through a personalized, hand-on and technology-enhanced education that leverages the intellectual resources of the Mayo Clinic. Instead of a traditional campus, the institution built classrooms and offices in an abandoned food court in a mall two blocks from the Mayo Clinic. Instead of building traditional dorms, the University leased a few floors in an adjacent apartment building. Instead of building a gym and a pool, it offers students a membership in the local YMCA. A grouping of chairs and a connection to the internet serves as a library. The university offers only two undergraduate programs, a BS in Health Sciences and a BS in Health

Professions. The undergraduate curriculum includes a liberal arts component in the first two years, alongside rigorous grounding in the STEM disciplines. In their last two years, students are immersed in studies that focus on career related skills, including a capstone senior project. To get tenure, faculty are expected to demonstrate excellence in teaching and must present an array of evidence on their teaching including their efforts at developing community-based learning activities for students, how they have interacted with student projects, course evaluations and letters from students, and their advising, mentoring and supervising of capstone experiences. The university also requires faculty research, and the research obligation has two aspects. A professor's primary research needs to "advance the field of inquiry of student learning" by writing about how to improve educational results. The second area of research is the standard work in one's academic field—the sort of research that is usually all that counts toward tenure. Students who are attracted to the University value the "intense academic environment" and enjoy the chance to work closely with professors. Undergraduate tuition is \$13,000 a year.

Carnegie Mellon University

Supported by a grant from the William and Flora Hewlett Foundation, the Open Learning Initiative (OLI) was established at Carnegie Mellon University in 2002 to pursue three goals: to support better learning and instruction with high-quality, scientifically-based, classroom-tested online courses and materials, to share these courses and materials openly and freely with colleges and universities and individual learners, and to develop a community of use, research, and development to allow for the continuous evaluation, improvement, and growth of courses and course materials. Assessment is embed into every instructional activity. With the students' permission, OLI collects real-time data of student use in those activities. These data make possible the corrections, suggestions, and cues that are tailored to the individual students' current performance and gives educators an unprecedented opportunity to stay in tune with many aspects of their students' learning. In addition, student activity data informs course designers about how students use the course material and how they perform on learning activities. Course designers use this data to iteratively refine courses. For example, if many students are not performing well on assessments of a particular concept, course designers will review the explanation of that concept, the practice activities, and the self-assessments to see where they might make an improvement. Some OLI courses also serve as part of the research environment for the Pittsburgh Science of Learning Center (PSLC) where learning researchers can embed experimental manipulations in OLI courses to test specific learning theories. Acrobatiq is a learning optimization company supported by Carnegie Mellon that is designed to expand on the work of the OLI by developing evidence based, learner-centric products and services for higher education. Acrobatiq is working to develop the next-generation of data-driven adaptive courseware and learning analytics to serve more learners and institutions, improve learning outcomes, accelerate innovation, and ensure its financial sustainability from revenue versus a reliance on grant funding.

The Open University

The Open University (OU) is a distance learning and research university established in 1969 by Royal Charter in the United Kingdom. The university is funded by a combination of student fees, contract income, and allocations for teaching and research by the higher education funding bodies throughout the UK. It is notable for having an open entry policy, i.e. students' previous academic achievements are not taken into account for entry to most undergraduate courses. The majority of the OU's undergraduate students are based in the United Kingdom and principally study off-campus, but many of its courses (both undergraduate and postgraduate) can be studied anywhere in the world. With more than 250,000 students enrolled, including around 32,000 aged under 25, and more than 50,000 overseas students, it is one of the world's largest universities. Since it was founded, more than 1.5 million students have enrolled.

University of the People

University of the people is a tuition free, online institution founded in 2009 by entrepreneur Shai Reshef. By May 2014, the University had admitted more than 1700 students from 143 countries. It received accreditation in February 2014, through the Distance Education and Training Council. The university emphasizes learning by teaching and peer-to-peer learning. It uses online discussion forums and online communities in order for students to cover readings, share resources, exchange ideas and discuss assigned questions. Scholars, professors, librarians, master level students and other professionals—many of them volunteers—oversee and participate in both the assessment process and the development of curricula.

6. Barriers to Change

Accreditation

Seeking Higher-Ed Accountability: Ending Federal Accreditation

Anne D Neal, President of The American Council of Trustees and Alumni, writing in a 2008 issue of *Change*, argues that our system of accreditation has contributed to the deteriorating quality of higher education. She writes, “Far from preventing harmful intrusion into higher education, the system has empowered the accrediting cartels to impose their own standards and agendas on the schools they are meant to be helping. Political correctness, diffuse curricula, rising prices, the homogenization of higher education—all these are facilitated by the accreditors’ regime. Wielding power as federal gatekeepers, they can enforce ideological and other tests unrelated to educational quality”. And “The accreditation process suffers from structural problems: secrecy, low standards, and little interest in learning outcomes. Far from being independent arbiters of quality, accrediting review teams are made up of the very people under review: faculty and administrators of other colleges, often from the same area. The accreditors have been allowed to carve up the country into regional cartels, giving institutions virtually no

choice in the accreditor they can use. And given the monopoly they exercise, accreditors have been able to apply intrusive, prescriptive standards”.

U.S. Accreditation and the Future of Quality Assurance

In this 2008 monograph prepared as the *Tenth Anniversary Report from The Council for Higher Education Accreditation*, Peter Ewell explores the challenges to accreditation in light of the changing environment for higher education. He illustrates how longstanding tenants of accreditation policy and practice are now under question and observes that, in specific areas, public demands have become so pressing that they require immediate action. He argues that accreditation must give more attention to student learning outcomes and needs to explore how evidence of the attainment of learning objectives can be externally benchmarked. It must find a way to provide the public with more detailed information about the results of its reviews and to recognize performance beyond minimum compliance. Also, since political pressure to improve transfer of credit is escalating, accrediting groups must extricate themselves from the untenable role they currently play as the exclusive criterion used by institutions for approving transfer credit requests. Finally, as new ways to deliver educational programs proliferate, accrediting groups will be challenged to develop new standards for assessing quality. It's clear that the standards they have used to judge traditional programs are inadequate when applied to such things as service and problem- based learning as well as asynchronous and self-paced modes of instruction.

The Credit Hour

Cracking the Credit Hour

Authored by Amy Laitinen in 2012, this report from The Public Sector traces the history of the credit hour, described as representing the root of many problems plaguing higher education in the US. A credit hour typically represents one hour of faculty-student contact time per week over a fifteen-week semester. Most bachelor's degrees require 120 credit hours. As the report notes, the credit hour “was never intended to be a measure of, or proxy for student learning.” Over time, however, the credit hour has taken on enormous importance in everything from setting faculty workloads to determining state and federal funding and an institution's eligibility for federal student aid. The report recommends a variety of policy solutions that could help move the U.S. from a time-based higher education system to one based on learning. “If the U.S. is to reclaim its position as the most- educated nation in the world, federal policy needs to shift from paying for and valuing time to paying for and valuing learning,” the report concludes.

The Business Model

Rethinking Higher Education Business Models

In this 2012 Center for American Progress report, Robert Sheets, Stephen Crawford, and Louis Soares begin by explaining Clayton Christensen's “disruptive innovation” analytical framework. They then explore how new business models could better harness

recent advances in information technology and thereby achieve dramatic improvements in learning and credentialing, research and development, and business management. They conclude that especially promising are open, multisided, and unbundled models that involve facilitated networks. Applied to learning and credentialing services, these approaches could improve performance by achieving greater economies of scale and scope and providing the basis for increasing personalization, access, and choice at affordable prices. The authors then examine the policy implications, especially for the federal government's applied research budget, to help policymakers understand what works well and what has the potential to successfully "go to scale".

The Higher Education Business Model

In this 2013 Tiaa-Cref Institute report, Lucie Lapovsky describes the daunting challenges to long-established higher education business models. The cost of providing higher education continues to rise but sources of funding have eroded. Endowments suffered major losses during the financial crisis and many haven't recovered, government aid is down, and students, as well as their parents, are stretched thin financially and can't absorb the above-inflation tuition hikes to which the industry has grown accustomed. Further worsening this challenging climate, the public is beginning to question the value of higher education given the large debt incurred by students and their often poor prospects for employment. To ensure financial sustainability, many colleges and universities are responding by experimenting with changes to their business models. Most of these initiatives are nascent and occurring at the margins, but some may prove significant. For instance, some schools are changing their discounting policies and publishing much lower tuition prices; others are experimenting with four-year price guarantees, the length of time required to earn a degree, more vigorous recruitment of foreign students, partnerships with overseas institutions, and increased operational efficiencies—from streamlining back office functions to offering online learning to reach more students without incurring the added costs of facilities and faculty. Few new business models have emerged for higher education thus far, but with so much experimentation underway, change is certain.

The Faculty

Why Does the Faculty Resist Change?

In this 2012 article in *Change*, John Tagg argues that to make substantial improvements in colleges and universities, we need to understand and address the sources of faculty resistance to change and that we must look first to the structure of the work rather than the personalities of the workers for the source of the resistance. His analysis concludes that loss aversion and the endowment effect add up to the status quo bias, a pervasive preference for leaving things as they are. He offers the following suggestions to overcome this bias: 1. Stop creating strong anti-change endowments. The linking of hiring, promotion, and tenure to disciplinary research creates an endowment that undervalues teaching and learning and deters faculty commitment to change. 2. Link faculty endowments to collaborative work instead of only to individual work. 3. Create structures through which large numbers of faculty can design the change. 4. Establish channels outside of academic departments

through which faculty members can build their endowments. Departments as presently configured reinforce the priority of specialized research and faculty privacy and autonomy. If they are the only avenues for faculty development and endowment, they will create rigidity and resistance.

Institutional Obstacles

Change in Higher Education: Not Enough or Too Much?

In this 2009 article in *Change*, Adrienne Kezar argues that it is not a lack of interest in change but the large number of stakeholders and multiple initiatives that are constantly being introduced into higher education that destroy the capacity to implement meaningful change. The article describes a variety of conditions that lead to initiative-overload, including too many stakeholders, a lack of synergy among similar efforts, an inability to prioritize, turnovers in leadership, and institutional isomorphism. Kezar acknowledges that resistance, lack of vision, poor implementation strategies, lack of long-term planning, ineffective communication, poor or non-existent succession planning, bureaucratic structures, and weak leadership also impede deep change. But our lack of understanding about the degree to which change is being promulgated—constantly, innumerably, and duplicatively—creates a host of problems that, Kezar believes, can be addressed with greater awareness on the part of stakeholders, leaders, and change agents. Campuses need to agree on a small number of priorities that are aligned with institutional mission, regional needs, and the collective and shared interests of internal stakeholders and create greater synergy and partnerships between them. This will help ensure that the financial and human resources need for change are available.

Barriers to Innovation and Change in Higher Education

This essay, written by Lloyd Armstrong in 2014 for the TIAA-CREF Institute, describes how the environment for American higher education is rapidly evolving in ways that present both large challenges to the status quo and growing opportunities for responses to these challenges. Change in higher education generally has been slow to occur, however, despite pressures to do so. Wide-ranging research on institutional obstacles to innovation and change explains some of the reasons why higher education has moved slowly to meet new challenges. A business model perspective helps to identify key aspects of higher education that heighten some of the universal obstacles to innovation and change. These include American higher education's worldwide reputation for excellence, which serves to reinforce the status quo—particularly among tenure line faculty who play a dual role by both producing the educational product and participating in institutional governance, thereby exerting unusual control over change. The business model lens also helps to identify ways in which these obstacles may eventually be lowered. The shifting composition of the faculty workforce to a dominant percentage of full-time non-tenure track faculty focused primarily on teaching, but with a growing voice in governance, is likely to result in less attachment to the status quo. And intensifying demands for outcomes measurement will shed more light on the surrogate measures for quality that dominate higher education today; should those surrogates be found to be of little value, many barriers to change would fall. External barriers, including the role of the

member-organization accreditation system in shaping responses to the changing higher education environment are considered, as is the role of politics as manifested primarily through the actions of the U.S. Department of Education.

Shared Governance

Locus of Authority

In this 2015 book, William Bowen and Eugene Tobin argue that almost every contemporary issue facing higher education – from broadening student access, to achieving better learning outcomes, to increasing productivity and lowering costs – is impeded and frustrated by a hundred year old system of governance practices that desperately needs modification. They suggest that faculty nominally endorse the concept of “shared governance”, a concept they interpret as presuming the absence of an inherently adversarial relationship between faculty and administrators/trustees and the embrace of a collaborative approach to achieving common goals. But within the faculty ranks, cherished traditions of debate, consultation, deliberation and the search for consensus have been diminished by the compartmentalized nature of the academy and by faculty members’ loyalties to their disciplines rather than to their institutions. The authors track historically the evolution of governance practices, explore four case studies of the evolution of faculty roles and analyze faculty roles today and tomorrow in the context of a number of topical issues. In light of the growing importance of online learning, the authors argue that a form of “shared governance” that blends multiple perspectives and takes full advantage of faculty expertise but leaves final authority for these complex matters with administrators and trustees. They emphasize their view that many decisions about technologically enhanced course offerings cannot be left solely to faculty members.

Federal Regulations

Getting our House in Order

This 2015 report from [EducationCounsel LLC](#), with support from [the Lumina Foundation](#), calls for transforming the federal regulation of higher education. The report notes that effective regulation is an essential foundation for the American higher education system – particularly because of the emphasis placed on students’ ability to select from a wide variety of postsecondary programs in the higher education marketplace. But, at a time when higher education in America is more important than ever, the federal regulatory regime is, simply stated, broken. Multiple regimes with overlapping, often changing requirements necessitate significant investments of time and resources by institutions of higher education, federal regulators, and regulatory partners such as accrediting agencies and states. Navigating this regulatory thicket creates significant compliance costs, stretches regulatory capacity too thin, and – most importantly – blurs institutions’ focus on their fundamental missions of educating and supporting students. This paper poses three central questions to assess the state of regulation today and how it should evolve. 1. What goals and objectives should be achieved by the regulatory regime? 2. How can those goals most effectively and efficiently be achieved in regulatory design? 3.

Who is best positioned to achieve those goals? Though this approach may be applied to many areas of regulation, this paper focuses on one critical area of policy: accountability for institutions of higher education. The paper offers these recommendations for framing the accountability dialogue: 1. Three key interests should motivate all accountability regimes: student outcomes, institutional quality, and value. 2. Some regimes should shift away from traditional deterministic and prescriptive approaches that apply the same rules to all and tend to impose inputs-focused requirements. In many cases, performance-based and risk-informed regimes can better align with outcome-focused efforts and reduce the burdens on both the regulators and the regulated. 3. Given longstanding areas of expertise, the "triad" should continue to exist. But roles need to be better defined and aligned to ensure that the federal government, accrediting agencies, and states have sufficient capacity and motivation to execute their obligations effectively.

7. Critiques of “Transformation”

Why Does College Cost So Much?

Written by Robert Archibald and David Feldman and first published by the Oxford University Press in 2010, this book acknowledges that much of what is written about colleges and universities ties rapidly rising tuition to dysfunctional behavior in the academy. Common targets of dysfunction include prestige games among universities, gold plated amenities, and bloated administration. These authors offer a different view. To explain rising college costs, they see the higher education industry within the larger economic history of the United States where the combination of two factors, slow productivity growth and rapidly expanding wages, results in rapidly rising prices. They argue that increasing productivity is exceedingly difficult in industries like higher education that rely on highly educated labor to offer personal services. That's because of “the cost disease”, a term first used in the 1960's by Baumol and Bowen to apply to artisanal industries where costs are determined by the time of the service provider and where you cannot use less of the provider's time without compromising the quality of the service. They believe that quality programs in higher education rely on providing strong interaction between professors and students and thus they define online education as low in quality. They ask - who would prefer their sons or daughters to learn in giant impersonal lectures or online chat rooms monitored by adjunct teachers who answer lots of e-mail questions rather than in small group seminars taught by tenured professors? As long as face-to face interaction with faculty is what people value, they assert, college costs will tend to rise faster than the overall inflation rate. At the heart of their argument is the presumption (for which they present no evidence) that technology is not capable of lowering the cost of education without lowering the quality as well.

Disruptive Innovation: Rhetoric or Reality?

In this brief essay, published in 2012 in *Inside Higher Ed*, Johann Neem argues that the problem with the rhetoric about the benefits of disruptive innovation of higher education

is that it ignores the importance of ideas and politics. He writes: “What we are really seeing is not necessarily a moment of disruptive change. Rather, those who are already hostile to the academy are invoking the *idea* of disruption to convince the rest of us that the changes they desire are inevitable. The new technologies are an excuse; the reality is that many of the changes being imposed on universities across America -- and exposed in the debates at the University of Virginia -- are not about technology and disruptive innovation but about those who have a particular vision of American higher education and want to see it happen. In short, it’s about politics and values, and there’s nothing inevitable about those”.

A Plea for "Close Learning"

In this essay, published in *Liberal Education* in fall 2013, Scott Newstok takes a skeptical look at the value of new technologies innovative assessment systems and massive open online courses (MOOCs) in particular. He uses the term “close learning” to explain the fundamental differences between distance education of any kind and the personalized, face-to face instruction that has long been the gold standard in higher education. He states that close learning is “a term that evokes the laborious, time-consuming, and costly but irreplaceable proximity between teacher and student. Newstok points to the traditional Socratic seminar as the quintessential close learning experience where students and faculty alike discuss important issues, question one another, compare, and debate and often modify their points of view. It is a learning experience that so often is transformational. He argues that “close learning exposes the stark deficiencies of mass distance learning, such as MOOCs, and its haste to reduce dynamism, responsiveness, presence”.

The Disruption Machine: What the Gospel of Innovation Gets Wrong

Clayton Christensen’s theory of “disruptive innovation” has been rebutted by Jill Lepore in this 2014 article in *The New Yorker*. She points out that most companies succeed because of sustainable innovation, not disruptive. Apple, after all, still makes laptops, and US Steel is still the largest steel company in the US. In addition, she goes on to demonstrate that a good deal of Christensen’s evidence is thin and that many of his examples of success have failed.

How College Works

Written by Daniel F. Chambliss and Christopher G. Takacs and published in 2014, *How College Works* reveals the decisive role that personal relationships play in determining a student’s collegiate success, and puts forward a set of small, inexpensive interventions that yield substantial improvements in educational outcomes. The authors followed a cluster of nearly one hundred students over a span of eight years. Curricular changes and technological innovations mattered much less than the professors and peers whom students met, especially early on. At every turning point in students’ undergraduate lives, it was the people, not the programs that proved critical. Great teachers were more important than the topics studied, and even a small number of good friendships--two or three--made a significant difference academically as well as socially. The authors argue

that college works best when it provides the daily motivation to learn, not just access to information. Improving higher education means focusing on the quality of a student's relationships with mentors and classmates, for when students form the right bonds, they make the most of their education.

Taking It to the Streets: Preparing for an Academy in Exile

In this article published in *Liberal Education* in 2015, Johann Neem argues that university education in our country is increasingly not academic: it is vocational; it is commercial; it is becoming anti-intellectual; and, more and more, it is offering standardized products that seek to train and certify rather than to educate people. If and when we can no longer call the university a home, he laments, we will need to build new shelters in civil society.

Higher Education Isn't in Crisis

Janet Napolitano, President of the University of California, wrote this essay which was published in the Opinion section of the *Washington Post* on March 12th, 2015. She critiques two recent books, The End of College, by Kevin Carey, and College Disrupted, by Ryan Craig, arguing that neither takes into account the difficulties of managing complex universities, the reduction of public funding for both education and research, the new roles universities have been asked to perform, such as preventing sexual assault and providing mental health services, or the responsibilities they have needed to assume to respond to new legal and regulatory requirements. She expresses concern about online education with questions such as, "What do we lose in the college experience if we over-rely on online learning? How amenable are online-learning platforms and open-source badges to teaching in the arts and humanities, and to producing a well-rounded, well-educated citizenry? If we focus on preparing a student for his or her first job, are we ignoring the likelihood that students will have many jobs over the course of a lifetime? How do we best prepare students to be lifelong learners and adapters, to be critical thinkers?" She proposes some short-term fixes but ends with a call for a new national dialogue on higher education that focus not on costs or computer learning but on transforming individual lives and transporting new knowledge into the world.

8. Influential Websites and Blogs

Changing Higher Education

A website, authored by Lloyd Armstrong, dedicated to discussion and analysis of the forces coming to bear on higher education, and of ways in which higher education might proactively and effectively use these forces to increase its impact.

The Clayton Christensen Institute

Formerly known as the Innosight Institute, The Clayton Christensen Institute is a nonprofit, nonpartisan, think tank focused on improving the world through disruptive innovation, particularly in education and health care

Next - The Chronicle of Higher Education

Insights on news and trends in higher education by Jeff Selingo, a contributing editor at *The Chronicle of Higher Education* and author of *College (Un)Bound: The Future of Higher Education and What It Means for Students*

The College of 2020 | Future of Higher Education

Edited by Martin Van Der Werf and Grant Sabatier, The College of 2020 is a blog about the future of higher education. What will it be like in 2020? What will students demand? How will they pay for an education? How will technology impact learning? What will facilities look like?

9. Supportive Foundations

Lumina Foundation

Lumina Foundation is an independent, private foundation committed to increasing the proportion of Americans with high-quality degrees, certificates and other credentials to 60 percent by 2025. Lumina's outcomes-based approach focuses on helping to design and build an accessible, responsive and accountable higher education system while fostering a national sense of urgency for action. In 2013, Lumina Foundation made 96 grants for a total commitment of nearly \$63 million. Lumina is a conversion foundation created in 2000 as USA Group, Inc., the nation's largest private guarantor and administrator of education loans, sold most of its operating assets to the Student Loan Marketing Association, Inc. (Sallie Mae). Proceeds from the sale established the USA Group Foundation with an endowment of \$770M. The Foundation was renamed Lumina Foundation for Education in February, 2001.

Bill and Melinda Gates Foundation

Bill & Melinda Gates Foundation was launched in 2000 and is said to be the largest transparently operated private foundation in the world. It is "driven by the interests and passions of the Gates family". The primary aims of the foundation are, globally, to enhance healthcare and reduce extreme poverty, and in America, to expand educational opportunities and access to information technology. It had an endowment of \$42.3 billion as of November 2014. The Foundation is committed to ensuring that all students have the opportunity to receive a high-quality education. It has two programs that work in concert toward this goal: College-Ready Education, which aims to ensure that all students graduate from high school prepared to succeed in college and in a career; and Postsecondary Success, whose goal is to dramatically increase the number of young people who obtain a postsecondary degree or certificate with labor-market

value. The Postsecondary Success strategy seeks to increase low-income students' college completion rates through innovations that can improve the productivity and performance of U.S. universities and colleges and ensure that all students have access to a high-quality, highly personalized education.

The Teagle Foundation

The Teagle Foundation was established in 1944 by Walter C. Teagle, longtime president and later chairman of the board of Standard Oil Company, now Exxon Mobil Corporation. - The focus of the foundation's work for the last decade has been on the quality of liberal education, especially (though not exclusively) at liberal arts colleges. The foundation intends to be an influential national voice and a catalyst for change in higher education to improve undergraduate student learning in the arts and sciences. The foundation has become well known for grant making programs that support collaborations among colleges for one of two related purposes: developing fresh ideas about the practices and purposes of liberal education, and developing effective approaches to gathering and using evidence to improve student learning. The market value of their portfolio was approximately \$154 million in December 2013.

10. Other Material of Note

Academically Adrift: Limited Learning on College Campuses

In this 2010 book, Richard Arum and Josipa Roksa's argue that our colleges and universities are failing at their most basic mission – student learning. According to their analysis of more than 2,300 undergraduates at twenty-four institutions, forty-five percent of these students demonstrate no significant improvement in a range of skills - including critical thinking, complex reasoning, and writing - during their first two years of college. The study did find important distinctions among academic majors. There was a strong correlation between how hard students were asked to work and how much they learned. The most challenging and rewarding programs were in the liberal arts and sciences. The least work and least learning happened in programs like business and education, two of the more popular majors. As troubling as their findings are, Arum and Roksa argue that they are the expected result of a student body distracted by socializing or working and an institutional culture that puts undergraduate learning close to the bottom of the priority list. Some scholars have claimed that the research reported in this book is methodologically flawed.

Beyond the University: Why Liberal Education Matters

In this 2014, book, Michael Roth addresses a central question in the current debate about American higher education. Is it vocational instruction meant to lead to immediate employment after graduation or a time for expansive ideas and self-exploration? He argues that liberal education, with its emphasis on critical thinking, is an important part of

American ideals of democracy. He traces the historical roots of liberal education from the ancient Greeks through the Middle Ages and the Enlightenment but focuses on American thinkers, including Thomas Jefferson, Frederick Douglass, W. E. B. DuBois, William James, Ralph Waldo Emerson, Jane Addams, John Dewey, and others. He examines the old debate about the usefulness and even democracy of a liberal education—whether it is aimed at the elite and is useless for the masses—as well as current threats from the government, from business, from political interests, and within the universities themselves. Roth argues that the utilitarians who push toward the practical will turn out graduates trained for “yesterday’s jobs” who have not learned the intellectual rigor and flexibility needed to adjust to whatever the future may bring. He concludes with a stirring plea for the kind of education that has, since the founding of the nation, cultivated individual freedom, promulgated civic virtue, and instilled hope for the future.

Stanford2025: An Exploration of Undergraduate Experiences in the Future

The potential disruption posed by online learning has led the [Stanford University Institute of Design \(dschool\)](#) to acknowledge that many parts of the undergraduate experience are ripe for reinvention. Recognizing that enormous energy and investment are now being placed in experimentation and pioneering in the *online* learning space, the dschool wanted to complement these efforts with an exploration of learning and living on campus, now and in the future. Toward this end, an experiential exhibit entitled “Stanford 2025,” was held at the dschool in May 2014. The exhibit grew out of a larger project that included three classes, a series of workshops and the development of tools to support individuals who share the goal of experimenting towards a future Stanford, and an experienced project team that worked to synthesize and build on the ideas and research initiated by the students and project partners. Design work continued both inside and outside of class for a year, creating the foundation for the exhibit. To encourage an exploratory mindset, the event was staged as a time-travel journey. The community embarked to the distant future—and landed just at the moment when Stanford was looking back retrospectively at major paradigm shifts that “happened” around 2025. These possible shifts were shared as provocations—a subjective, student-centered imagining of what could happen as the future unfolds. The four provocations consisted of 1. Open Loop Learning 2. Paced Education 3. Axis Flip and 4. Purpose Learning. The Stanford2025 website uses videos and narrative to describe the content of the exhibit. It includes a section where visitors to the website can use a toolkit that enables them to use as well as modify the four provocations to design the future of living and learning on a campus of their own choosing.

Preparing for the Digital University: A Review of the History and Current State of Distance, Blended and Online learning

This 2015 report looked at published systematic literature reviews and meta-analyses to provide an overview of what is known about distance education, blended learning, online learning, credentialing, MOOC’s and future learning technology infrastructures. The goal was to introduce academics, administrators, and students to the rich history of technology in education with a particular emphasis of the importance of the human factors: social interaction, well-designed learning experiences, participatory pedagogy, supportive

teaching presence, and effective techniques for using technology to support learning. The authors hope, at the very least, to help higher education get past the 'but does online learning work' argument that often arises in the conversations. The report concludes that distance education, when properly planned, designed, and supported by the appropriate mix of technology and pedagogy, is equivalent to, or in certain scenarios more effective than, traditional face-to-face classroom instruction. George Siemens, executive director of The University of Texas at Arlington's Learning Innovation and Networked Knowledge Lab, is the lead author of the report. Co-principal investigators are Dragan Gašević, professor and chair in Learning Analytics and Informatics Schools of Education and Informatics at the University of Edinburgh; and Shane Dawson, acting director of the Learning and Teaching Unit at the University of South Australia. The paper is published on the LINK Research Lab website. The work was supported in part by a grant from the Bill & Melinda Gates Foundation and administered by Athabasca University in Alberta, Canada.