

UNIVERSITY ENVIRONMENTAL SCAN November 2014 Office of Research and Planning

ENVIRONMENTAL SCAN EXPLAINED

Definition of Environmental Scanning

Environmental Scanning enables the understanding the changing external environment that may impact the organization and plays a key role in Strategic Planning, as diagrammed:



Image taken from http://horizon.unc.edu/courses/papers/enviroscan/ Environmental Scanning, By James L. Morrison

An Environmental Scanning "science" has developed with a common language and several canons of categorization. For example, common groupings of critical environmental factors include **Society**, **Technology**, **Economy**, (Natural) **Environment**, and **Politics** (STEEP), but this scan will also include several other category topics also pertinent to such scanning.

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Executive Summary

- Higher education finds itself under close scrutiny and skepticism focused mostly on price and value.
- Some of the now-familiar solutions being proposed (still) include: MOOCs, Flipped Classrooms; Minerva; Hybrid Programs; Consortia; and Competency-Based models.
- Less radical proposals for reform include: use of Data-Driven Learning and Assessment; shift from Students as Consumers to Students as Creators; Learning Analytics; Games and Gamification; and even virtual Assistants; more expansive use of Social Media even for scholarship.
- In the economic environment to which graduates will enter, "overall" job availability is improving, although the quality of those available jobs is not.
- A quick analysis comparing fast-growing jobs with Brenau offerings reflects how well BU offerings align with job availability.
- A climate of overregulation characterizes the higher education condition.
- Post-(midterm) election analyses suggests various changes on the federal level, including possibly drastically simplified forms to report income in applying for financial aid. The fate of the administration's ranking (accountability) plan is also uncertain.
- The impact of mid-terms on environmental policy, however, may be more predictable, as carbon regulation will be relaxed. Campus sustainability efforts, however, will continue to focus on carbon reduction and continue to employ some of the same standards and established processes and goals.

Alignment with Brenau's Strategic Plan

This year, the environmental scan will attempt to help users align environmental factors most closely with Brenau's strategic plan, abbreviated here:

- Strategy 1: Create and apply a unique, transformative curriculum that blends liberal arts and professional preparation at all levels.
- Strategy 2: Establish accelerated and expanded undergraduate and graduate programs.
- Strategy 3: Develop extraordinary experiences, programs, facilities and technology to drive enrollment growth beyond 5,000 students by 2025.
- Strategy 4: Make international studies and experiences accessible for all students.

Before dealing with factors impinging on specific elements of the strategic plan, we might address larger issues of the environment which impact our institution in more general ways. At present, all institutions are finding that they must defend the value of the baccalaureate degree itself.

Indeed, higher education finds itself in a cauldron of controversy these days, as people from all directions are challenging its very value. That climate has sparked debate on the topic and response from the Academy. Possibly the biggest threat to higher education: its very credibility is in the balance: Some are asking: "Can we trust the Academy – the institution Society establishes to store knowledge -- to tell the Truth?"

Problems

College finds itself accused of a wide spectrum issues. We might consider the two ends of this spectrum:

Issues Easily-understood by external constituents

Indeed, there are problems: Commonly, college students graduate from college with high debt loads. And while the unemployment rates of college graduates are only barely getting better, many can still only find work poor-paying jobs. But the criticisms go well beyond those oft-repeated concerns that are basic and more visceral. Fair criticisms of the Academy consider more esoteric issues of institutional operation.

Inter-Institutional issues

An example of the other end of the spectrum might be exemplified in this analysis of the college bureaucracy:

Increasingly, higher education is subject of criticism for being top-heavy. One book making waves is *The Fall of the Faculty*, in which Benjamin Ginsberg explains that until very recently, American universities were led mainly by their faculties, which viewed intellectual production and pedagogy as the core missions of higher education. Today, however, "deanlets"--administrators and staffers often without serious academic backgrounds or experience--are setting the educational agenda. He discusses the fallout of "rampant administrators and staffers to their payrolls every year even while laying off full-time faculty in increasing numbers--ostensibly because of budget cuts. In a further irony, many of the newly minted--and non-academic--administrators are career managers who downplay the importance of teaching and research, as evidenced by their tireless advocacy for a banal "life skills" curriculum. Consequently, students are denied a more enriching educational experience--one defined by intellectual rigor. Ginsberg says that administrators have actually taken up grievances of minority groups and liberal activists as chess pieces in a game of politics. By embracing initiatives such as affirmative action, the administration gained favor with these groups and legitimized their own efforts to bolster power over the faculty. In sum, he believes that higher education and university policy is set by "bureaucrats" who do not know what is required for teaching and research (Ginzberg 2011).

In the current literature on organizations and organizational effectiveness, more generically, increased scrutiny is given to individual characteristics. For example, whether referred to as "bozo explosion" (Isaacson 2011) or "bozo invasion" (E. Schmidt and Rosenberg 2014), the focus of organizational theory has been on the consequences of installing people *who lack passion or requisite skills*. In any case, this identification of individual characteristics which promote organizational health may impact higher education by bringing scrutiny on colleges and their diligence at inculcating these traits. Also, the new focus on the interplay between developmental traits and institutional effectiveness may also impact colleges by bringing greater competition among employers for individuals with certain characteristics. Also, in addition to hiring, colleges may begin to consider more carefully the placement of individuals with certain traits within the organization.

A summary of criticisms from a "common reader"

Brenau University administrators have reviewed *College* by Andrew Delbanco as an assignment for review at a planning retreat. The book is a comprehensive assessment of higher education. The author takes the long view to size up higher education's reputational issues, a long view which might accessed through Appendix 4 (which describes some aspects of tradition that Delbanco brings to bear to highlight current problems.)

From the context in which Delbanco writes, he perceives as problems currently with colleges some of the following:

- Sclerotic New college presidents find out fast that they have landed in the slowest-changing institutions in American life— slower, even, than the post office. The Ohio State economist Richard Vedder gets reliable laughs when he tells corporate audiences that "with the possible exception of prostitution, teaching is the only profession that has had absolutely no productivity advance in the 2400 years since Socrates." Delbanco, Andrew (2012-03-22). College (pp. 21-22). Princeton University Press. Kindle Edition.
- Too much freedom Over the past half century or so, this expansion of freedom has been the most obvious change in college life— not just sexual freedom, but what might be called freedom of demeanor and deportment, freedom of choice as fields and courses have vastly multiplied, and, perhaps most important, freedom of judgment as the role of the college as arbiter of values has all but disappeared. Relatively few colleges require any particular course for graduation, and the course catalogue is likely to be somewhere between an encyclopedia and the proverbial Chinese menu— from which students choose a little of this and a little of that, unless they are majoring in one of the "hard" sciences, in which case their range of choice is much narrower. Delbanco, Andrew (2012-03-22). College (p. 19). Princeton University Press. Kindle Edition.
- **Pointing students in wrong direction** ...as the former dean of Harvard College, Harry Lewis, puts it, they "affect horror" that "students attend college in the hope of becoming financially successful, but . . . offer students neither a coherent view of the point of a college education nor any guidance on how they might discover for themselves some larger purpose in life." Delbanco, Andrew (2012-03-22). College (p. 24).
- Low quality ... In this new context, and in the face of disturbing evidence of poor student achievement— according to one recent study, roughly a quarter of college graduates *cannot* comprehend a moderately sophisticated magazine article, or estimate if there's enough gas in the car to reach the next gas station— a national movement has been forming to devise credible ways to assess what students are actually learning and to improve their prospects of learning more. Our current method of assessing college teachers— mainly surveying students about how much they like or dislike them— is atomistic, impressionistic, and generally close to worthless. Delbanco, Andrew (2012-03-22). College (pp. 154-155). Princeton University Press. Kindle Edition.

- Grade Inflation and cheating As for evaluating the students themselves, grade inflation (also encouraged by student surveys, since few students appreciate a low grade) has at least kept pace with, if not exceeded, the epidemic of cheating. Except in the hard sciences, grades mean less and less, especially in elite colleges, where the numbers of students graduating with honors and with GPAs over 4.0 (the A + is no longer uncommon) have become outlandish. What exactly a college degree signifies is now so variable across institutions, and, for that matter, within the same institution, that having the degree doesn't mean much either— leaving it at risk of becoming what one writer long ago called a "merely formal and unmeaning certificate." Delbanco, Andrew (2012-03-22). College (p. 155).
- Shortchanging College's Core Mission: more than a few give students virtually unlimited freedom to study whatever they want. A couple of university-colleges, Columbia and Chicago, and a few independent colleges such as Ursinus College, try to split the difference along the lines of McCosh's model by requiring core courses of freshmen and sophomores in which, with the aid of classic texts, students (in the language of the current Ursinus catalogue), "reflect on the great questions of human existence . . . What does it mean to be human? How should we live our lives? What is the universe and how do we fit into it?" 34 But most colleges today do neither. There might be some sort of freshman "gateway" course before students plunge into specialization or into a grab bag of unrelated subjects, and there is probably some loose "distribution" requirement that makes it hard, though probably not impossible, to study only one subject all the time. In other words, except for proselytizing institutions such as Bob Jones or Oral Roberts universities, very few colleges tell their students what to think. With equally rare exceptions, most are unwilling even to tell them what's worth thinking about. Delbanco, Andrew (2012-03-22). College (pp. 84-85).

Of course, there are other problems in higher education identified by other authors. Famously,

- Value Questioned: We observe no statistically significant gains in critical thinking, complex reasoning, and writing skills for at least 45 percent of students in our study [of 2,300 students]. An astounding proportion of students are progressing through higher education today without measurable gains in general skills. (Arum and Roska, 2010. 36) The limited learning that exists on US campuses qualifies today as a significant social problem and should be the subject of concern of policy makers, practitioners, parents, and citizens alike. Richard Arum and Josipa Roska, Academically Adrift, 2010
- **Too Self-Referential**: ...there is a sense ...in which everything that surrounds [students] "is all about you." Yet the secret to the good life, the core value that is at the center of the University's mission ...is to help you realize, deep in your hearts, that it is not all about you. This experience is all about you realizing that it's not all about you. (Smolla 2011)
- **Expansion vs. quality**: As tuition rates spiral beyond reach and student loan debt passes \$1 trillion, *lvory Tower* asks: Is college worth the cost? The film describes a *perfect storm* as many question the very value of higher education at the same time that the price of college

inflates wildly (it has increased more than for any other service in the United States), and when student debt is debilitating individuals and also threatening to precipitate an economic meltdown on the level of the mortgage crisis. Is a great American institution at the breaking point? Among many leading scholars of higher education, the movie brings in Harvard president Drew Faust, Richard Arum, Peter Thiel (founder of the Theil scholarship) and Andrew Delbanco. Takeaways from the documentary movie include:

- Basic to the DNA of all American colleges is Harvard's model. And Harvard today is all about expansion.
- Lots of colleges have been in competition and are expanding beyond their means.
- Paying for that has led to race for enrollments, among other things. For example, state schools aggressively go after out-of-state (full-paying) students. These "customers" are enticed by huge investment in amenities. They illustrate with the example of the University of Missouri: students can relax in hot tubs and heated vortex pools in their new \$50 Million recreation center on campus. Well past the days when climbing walls were news, such centers are one way campuses fight in an amenity war.
- In addition, many students are able to "pick a party path" through college, where the unchallenging curricula get even easier and apparently with no one accountable.
- Why are faculty silent on this? Promotion and other reward structures do not support challenging instruction. Also, faculty are captive to professor rating systems in addition to course evaluations, students get to favor easy teachers on unofficial sites such as Rate My Professor, whose ratings favor lenience.
- Society has a stake in the debate about college value: Since society benefits from development of its citizens, society grants tax-free status. All of us have a stake in what colleges do. Higher Education seems to ignore its role in society as it focuses away from liberal arts, fails to ascertain or assume responsibility for its outcomes, and continue to jack up prices.
- In looking for solutions, the movie challenges the sometimes unquestioning belief in MOOCs, citing poor student outcomes of California's arrangement with a for-profit (MOOC) provider. The pass rate of students in the state-contracted Udacity offerings was about 50%, well below (e.g, 74 percent or more) of the students in traditional (face-to-face) sections (Rivard 2013) of the three courses – a remedial math course, a college algebra course and an introductory statistics course.
- There are some bright spots in the hunt for alternatives: a free school Deep Springs where the students also run a ranch, experiments with hybrid MOOCs (where students log on to the MOOC lesson of reading and lectures before attending traditional class), and some access-mission colleges which have managed to stay economically accessible. (Interesting footnote: Harvard is among only 1.25 percent of colleges in America to offer full need-based scholarships.)

• **Overregulation**: Regulations are becoming a burden on schools and leads to staffing increases that do not advance a college's "mission of educating students and helping them reach their goals." says Nick Cooper recently hired by Norwich University to deal with state regulations in which that university has online students. (Carlson 2014) Colleges are besieged by a

...vast regulatory regime of hundreds of rules [that] seem to have expanded with scrutiny of student debt and graduation rates. Leaders of traditional institutions often say they're paying the price of higher education's bad actors, while some observers argue that colleges just want to duck accountability... Nicholas S. Zeppos, president of Vanderbilt University and co-chair of a new U.S. Senate task force examining the regulation of higher education, says the businessmen on his board of trustees tell him it's more complicated than anything they see in the corporate world. "They are stunned by the range and depth and complexity of the regulatory environment we operate under," he says. "They are asking us more and more, 'What is the cost of this?'" (Carlson 2014)

So, we might conclude our Problems section by considering that some sources of those problems come from outside. We might at least partially explain why "Higher education is getting a lot of heat these days for its *rising costs, bloated administration,* and *sluggish movement toward innovation*" by considering overregulation.

Of course, overregulation does not explain all of the troubles in which higher education finds itself. In any case, the most responsible researchers who seek to understand college problems and identify solutions begin with earnest efforts to examine effectiveness. They begin with outcomes.

Outcomes Assessment

Some who seek solutions to weaknesses of higher education correctly seek to bring *outcomes* to bear. Analysis and transparency, two key elements of the "quality" literature, are rallying cries of reformers. The rallying cries come from inside and outside of the Academy.

As we are reminded by Andrew Delbanco, the pressure on colleges to prove effectiveness will increase. For two or more decades, the Academy has been warned: do it to yourself or have it done to you. A contemporary example is the Obama administration is proposing a rating system. This system, as well as state and other "accountability" agents", pressure colleges to retain and graduate students and to measure success of graduates in their employment. Interestingly, however, "the ratings system being proposed by the Obama administration calls for measures of completion and academic progress, but it does not mandate that colleges produce measures of student learning (Berrett 2014)." This could all change, and these are later stipulated, they would likely be in the form of standardized measures.

Disturbing Assessment results:

Standardized evaluation of higher education effectiveness can yield results that are troubling. Studies challenge higher education's claim to effectiveness at the most basic skills:

Such higher education investigators as Richard Arum and Josipa Roksa are beginning to look at results of tests of achievement, such as the CLA. The Collegiate Learning Assessment, a standardized test of students' critical-thinking skills, suggested that some 36 percent of students failed to show significant learning gains between their freshman and senior years. Note national figures from ETS's Proficiency Profile, the standardized measure which Brenau employs,

ETS Proficiency Profile: Percent of students who	ading1	ading2	tical Thinking	iting 1	iting 2	iting 3	ath 1	ath 2	ath 3
scored "Proficient":	Re	Re	Cri	Ŵ	Ŵ	Wr	Ma	M a	Ĕ
Freshman National Average	50%	23%	3%	51%	13%	5%	43%	20%	5%
Seniors National Average	71%	42%	8%	67%	23%	10%	60%	34%	10%

Other findings challenge conventional wisdom on other learning outcomes (beyond basic skills) that were previously unquestioned, such as citizenship:

It has long been the conventional wisdom that colleges have an effect on student political participation. This has been bolstered by the scholarship of Pascarella and Terenzini. However, a review of recent scholarship suggests that college simply doesn't do as much as we once thought it did to stir up people's interest in politics. In fact, new research on the impact of co-varying factors of college attendance (such as coming from better-off families) has brought new light to this issue and has some feeling that the connection of voting rate with college may be completely spurious. (Gross 2012)

In any case, an environmental scan reveals impending pressure on colleges to assess.

Assessment of Academic quality:

Likely candidates for such standardized measures might be standardized surveys, graduate's employment information as well as standardized tests of performance:

Employment

Increasingly, those evaluating college effectiveness look to what happens when students graduate. This focus is the ultimate outcome measure.

Focusing on undergraduates from 2009 graduating class, Brenau determined the following results:

Of 750 Students who graduated with a degree from Brenau in 2009:

- 4 graduated with Associate Degrees
- 21 were ED.S. students, 1 of which we were able to track 5 years later
- 412 Were Undergrads, **150** of which we were able to track 5 years later. Of these **150**:
 - 122 had outside employment
 - \circ 5 were self employed
 - 11 were (grad?) students
 - 12 had no current employment identified
- 313 Were Masters level, 102 of which we were able to track 5 years later. Of these 102...
 - 93 had outside employment
 - 2 were self employed
 - 7 had no current employment identified

We might hope that these results may be representative. LinkedIn is the source of most of this information, and since this service located a good fraction of the graduates, and if we assume that those using this media keep their status fairly updated (the same incentives are at play that are behind posting the profiles themselves – career advancement), this can shed at least some light on our graduates.

National Survey of Student Engagement (NSSE)

NSSE collects, in survey form, "information from first-year and senior students about the characteristics and quality of their undergraduate experience." It seeks to "measure the extent to which students engage in effective educational practices that are empirically linked with learning, personal development, and other desired outcomes such as persistence, satisfaction, and graduation." Brenau has administered NSSE to freshmen and seniors in 2000, 2005, 2006, 2010, 2012, and 2014. Brenau is generally comparable to other colleges. This year (spring 2014) compared to Southeast Privates on reading and writing, for example:



While NSSE is not a measure of student achievement, it is the only method campuses have of capturing many aspects of student experience. The surveys are psychometrically derived, and their standardization makes possible comparison national norms and institutional groups. So, for example, on data reflecting homework effort, data reliability can be determined and comparisons made where not available before.

Measures of student achievement:

As mentioned, the release in 2011 of Academically Adrift: Limited Learning on College Campuses generated significant public conversation about academic quality. The blockbuster book looked at a range of data, including value-added measures of the Collegiate Learning Assessment (CLA), a standardized test of students' critical-thinking skills. The authors, Richard Arum and Josipa Roksa, concluded that 36 percent of students failed to show significant learning gains between their freshman and senior years, as reflected on the test.

Brenau administers a standardized achievement test similar to CLA, called the *ETS PP*, and has done so since 2007. Results are found in the Appendices: **Appendix 1**: ETS Scaled Scores and Percentile Rankings; **Appendix 2**: ETS Proficiency Ratings; **Appendix 3**: ETS Essay Test

Notes: how to interpret Appendix 1 Along various skill categories (including Critical Thinking, Reading, Writing, Mathematics, Humanities, social sciences, Natural Sciences), the chart allows the reader to determine how our freshmen stack up against freshmen nationally, and on the bottom half of the chart, our seniors stack up against seniors nationally. That allows Brenau to determine whether Brenau students are learning at the pace of their peers at other colleges.

Notes: how to interpret Appendix 2 A look at the Proficiency Ratings (Criterion Accomplishment) of the same examinations also reveals insight. These charts are not comparing, say, Brenau freshmen to American freshmen but rather counting freshmen who are proficient on a fixed standard, or criterion. Progress, then, is determined by an institution having a larger percentage of its seniors accomplishing a specific skill than entering freshmen. Conversely, progress might be indicated when fewer seniors are among the Non-Proficient ranks than freshmen (in a certain skill area.)

While not referred to specifically in the Brenau Strategic Initiatives, Brenau is, overall, committed to providing an education that leads to extraordinary lives. Thus, determination of how well Brenau students are accomplishing basic skills compared to peers at other schools around the country – is a vital part of the analyses of the environment.

Solutions

In this climate of scrutiny over effectiveness, innovative models abound.

Innovation: MOOCs

As an alternative to an overstretched, expensive model of higher education, MOOCS are more likely to prosper than fade. Indeed, MOOCs are still very much in play. A November 6, 2014 article investigates Georgia Tech's computer science masters model as "the best chance of changing how much students pay for a traditional degree." (Kolowich 2014) Incidentally, the study compares MOOCs to traditional programs and finds that MOOC students in the master's program at Tech: are older (they already have jobs); are more numerous (tech willing to accept more applicants and put them in classes three times larger); most did not study the field in college; they have a proven academic track record; and they're mostly men.

Innovation: Flipped Classrooms

Flipped Classrooms were created to teach the students by requiring the students to follow the lecture outside of class and then bring questions and/or homework into class. This allows the instructor to address any questions the students had on the previous lecture while also completing pertinent assignments during class. Not surprisingly flipped classrooms require collaboration of both the students and professors. The professor must be willing to take the time to prepare an accessible (preferably online) lecture to all students. This ease of access will not only allow the students to complete the lecture at their own pace but also allow the students to reread or re-watch the lecture until they understand the subject matter. Conversely, the students must be motivated enough to access these lectures outside of their usually scheduled class time and then come to class prepared with questions concerning the new topic discussed in the lecture.

An argument for flipped classrooms states: "Research shows that the human brain accepts new concepts largely through constant recall while interacting socially. This suggests that good teaching must 'de-emphasize lecture and emphasize active problem solving."

Innovation: Minerva

Founder of Snapfish, Ben Nelson, seeks to reinvent college by stripping it down to its essence: eliminating dining halls, fitness centers, football games, ivy-covered buildings and libraries, not to mention lectures! He is a man on mission, somewhat inspired by dissatisfaction with his own education at the Wharton School. Claiming that higher education's only innovation in the past 30 years is to double its costs, he feels that higher education is shielded from improvement. So he founded Minerva.

- Minerva will maintain almost no facilities other than a dormitory and students will use city parks and recreation centers and cultural resources for their extracurricular activities.
- Will build on content material already on MOOCs, but Minerva is not a MOOC provider. "The reason we can get away with [this essentials-only approach] is because MOOCs exist", says Nelson.
- All Minerva classes (capped at 19 students) will take the form of seminars conducted on a special platform
- Minerva's online platform, (based on the pedagogical research of a former Harvard Dean and foremost learning theorist) is a grid of images (likened to the opening credits of The Brady Bunch.) The experience is described as intense where the student is subjected to pop quizzes, cold calls, and quick groupings of students (e.g., to defend opposite propositions. After student groups present their side, a quick video clip is shown of an expert and then logical problems of the clip discussed.) Classes last 45 minutes. The experience is likened to "being forced to learn".
- Although this first class gets \$10,000 a piece in scholarship, future students will pay \$28,000 including "room and board" [sic they cook for themselves!].
- A partnership with one of the Clermont schools is enabling a progression toward accreditation.
- Students begin their Minerva education by taking the same four "Cornerstone Courses." "The freshman year should not exist," founder Nelson says, suggesting that MOOCs can teach the basics. "Do your freshman year at home."
- As Minerva students advance in their coursework, they choose one of five majors: arts and humanities, social sciences, computational sciences, natural sciences, or business

One criticism of Minerva is related to scholarship: At any great university are faculty whose work drives their field forward with great momentum. What happens when we "replace scholar—teacher with just teachers?" Other criticisms come mostly along the lines of: efficiency is a false idol. "Perhaps the process of education happens not just through good pedagogy but by having students in places where they see the scholars working and plying their trades", says Harry R. Lewis, dean of Harvard's undergraduate college from 1995 to 2003. "I'm sure there's a market for people who want to be more efficiently educated," Lewis says, "but how do you improve the efficiency of growing up?"

The cheerleaders are not to be quieted. If Minerva succeeds, it could inspire innovations which ultimately result in classrooms in legacy colleges "left empty by students who have plugged into new online platforms." (Wood 2014)

Innovation: Hybrid Programs (not to be confused with hybrid courses)

The hybrid approach has been proposed for the Harvard Case-Study method. It would work like this: In order to make Harvard's Case-Study MBA accessible and affordable: "The institution should have a limited, pre-MBA online course that helps prospective students get into Harvard's two-year, on-campus, case method course (which is, of course, very expensive). Personally, I believe a hybrid model for college education would be ideal." (Dent 2014)

Innovation: Form a Consortium

There is a course-sharing model being developed by a consortium of "colleges that were least likely of any type of institution to offer online courses." An experiment by a group of 16 liberal-arts colleges and universities in the South might serve as the blueprint for other small institutions looking for ways to maintain a core of academic programs but offer enough variety to attract students. The consortium membersⁱ offer their students distinctive courses developed at partner institutions – Arabic language, for example. There are bold visions for the future: For example, would a student ever enroll at Rollins but take the majority of his classes at one of the other 16 campuses and still get a Rollins degree? That depends on the strength of -- and trust in -- the consortium (http://www.colleges.org/) The initiative began two years ago with several courses at four institutions that committed to the classroom technology, which costs upwards of \$250,000. In an effort to maintain the feel of small liberal-arts classes, professors on the home campus of a course will teach in a classroom outfitted with conference capabilities and students on other campuses will take part in real-time, synchronous discussions. These will be essential on-sight elements of blended platforms. (Selingo 2012)

Innovation: Competency-Based

The term *competency-based* usually means allowing students to test out of whole courses on the way to getting a degree. The focus is the finish line. "Competency-based learning is already famously used by private institutions like Southern New Hampshire University and Western Governors University [and University of] Wisconsin..." (Carlson 2013) Some express fears about:

- Rigor (some suggest this is "people getting degrees by taking exams")
- Competition for resources in systems already financially pressured.
- Whether a competency test actually measures all the learning outcomes (especially in the humanities)
- Technical or logistical questions about designing flexible-enough technology
- Will it be necessary to hire coaches far more involved with students than the usual academic advisor?

Doubts are frequently raised by more traditional educators about the "deeper knowledge that comes only through seat time in a classroom and interaction with peers." (Carlson 2013)

Social (Population)

Brenau Strategic Goal 3 is "Develop extraordinary experiences, programs, facilities and technology to drive enrollment growth beyond 5,000 students by 2025." This, like all strategic goals, must be met in the context of population dynamics in our environment, including cohort size, age segments, student life needs, etc.

Total Population and Changes

	Resident Population									
							Percent			
							Change			
	Number	-	Nat	ional Ra	ank		Actual		Projected	
	(in							2003		
	thousand	s)		Actual F		Projected		to	2013 to	
	2013		1993	2003	2013	2023	1993 to 2003	2013	2023	
50 states and D.C.	316,129						12.5	9.0	8.8	
SREB states	117,737						17.0	13.4	11.8	
as a percent of										
U.S.	37.2									
Georgia	9,992		11	9	7	8	25.1	15.9	12.1	

Education Attainment of the Adult Population (>24)¹

	Percent With G	High School ED Credentia	Diplomas or Is	Percent Wi	th Bachelor's Higher	Degrees or
	1990	2000	2012	1990	2000	2012
50 states and D.C.	75.2	80.4	85.0	20.3	24.4	28.3
SREB states	71.3	77.7	83.1	18.6	22.4	26.0
as a percent of U.S.	94.7	96.7	97.8	91.5	92.0	91.7
Georgia	70.9	78.6	83.4	19.3	24.3	27.4

Colleges with programs for adult learners also focus scans on the population within the ages of 25-44. The Southern Regional Education Board reports that in Georgia, nearly 70% of working aged adults (*25-44) do not have a bachelor's degree.

Table 3 Education Attainment of Working-Age and Young, Working-Age Adults*														
	Percent of Working-Age Adults 25 to 64 with Associate's Degree or Higher			Young, Working-Age Adults 25-44										
			Without High School Diplomas or GED Credentials (in thousands)				Without Associate's Degrees (in thousands)				Without Bachelor's Degrees (in thousands)			
					Percent of Total		Percent of Total			nt of tal			Percent of Total	
	2005	2012	2005	2012	2005	2012	2005	2012	2005	2012	2005	2012	2005	2012
50 states and D.C.	37.4	38.9	10833	9912	13.2	2005	50632	48636	61.7	58.7	57670	55981	70.3	67.6
SREB states	34.2	35.7	4322	4035	14.6	13.1	19279	19238	65.2	62.3	21649	21855	73.2	70.8
as a percent of U.S.	91.5	91.8	39.9	40.7			38.1	39.6			37.5	39		
Georgia	35.8	36.7	379	367	13.8	13.4	1736	1695	63.2	61.8	1930	1909	70.3	69.6

High School Graduates





(National Center for Education Statistics 2012a)

Source: National Center for Education Statistics, Projections of Education Statistics to 2020.



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(National Center for Education Statistics 2012b)

Actual and Projected Percent of Public High School Graduates										
Wł	White Black Hispanic		oanic							
2009- 10	2019- 20	2009- 10	2019- 20	2009- 10	2019- 20					
59.8	55.4	15.1	13.7	17.4	22.6	50 states and D.C.				
53.8	47.4	23.7	21	17.4	25.3	SREB states				
50.1	47.4	36.4	34.3	7.3	12.1	Georgia				

College Readiness

The following graphics show the percentages of Georgia high school graduates in 2010 whose ACT scores met particular benchmarks establishing "college readiness" in that area. The first chart shows GA student scores compared to National scoring percentages while the pie chart following



shows the percentage of students who met particular numbers of benchmarks.

(ACT 2012)



(ACT 2012)

College Participation

"...the path to college success is not a linear one for many students. There are significant numbers of qualified students who move through (or in and out of) multiple postsecondary experiences as they pursue their educational goals. Consider the following characteristics of undergraduate students:

- 11% of students simultaneously enrolled in more than one institution
- 41% of graduates attended more than one institution
- 38% enrolled part time
- More than 2 million students brought college credit with them at the time of first full-time enrollment (dual credit, AP, online, or CLEP)
- 30% delayed enrollment a year or more
- 25% of undergraduates are over age 25
- 30% of undergraduates enrolled in an online course
- 29% of community college students transfer to four-year colleges
- 14% transfer from four-year to two-year colleges" (ACT 2012)

The following chart reveals a decline in college participation overall and also where decline is least and where it is greatest. <u>http://nscresearchcenter.org/currenttermenrollmentestimate-spring2014/</u>

	SPRING 2014		SPRING	2013	SPRING 2012		
Sector	Enrollment	% Change from Prior Year	Enrollment	% Change from Prior Year	Enrollment	% Change from Prior Year	
Total Enrollment, All Sectors	18,948,521	-0.80%	19,105,651	-2.30%	19,550,391	-0.30%	
Four-Year, Public	7,363,599	0.70%	7,312,261	-1.10%	7,397,012	-0.10%	
Four-Year, Private Nonprofit	3,694,299	2.00%	3,620,640	0.50%	3,601,383	3.80%	
Four-Year, For-Profit	1,280,716	-4.90%	1,347,238	-8.70%	1,476,010	-9.30%	
Two-Year, Public	6,179,033	-2.70%	6,351,609	-3.60%	6,591,687	-1.10%	
Unduplicated Student Headcount(all sectors)	18,587,703	-1.00%	18,766,884	-2.10%	19,178,473	-0.20%	

International Students

Increase in international students studying in US

A recent article (Redden 2014) in Inside Education reports that the number of international students enrolled at U.S. universities increased by 8.1 percent, to 886,052 in 2013-14, according to <u>"Open Doors,"</u> an annual report on student mobility published by the Institute of International Education (IIE).

Rank and Country of Origin	2012- 13	2013- 14	Percent of Total	Percent Change
World Total	819,644	886,052	100	+8.1
1. China	235,597	274,439	31	+16.5
2. India	96,754	102,673	11.6	+6.1
3. South Korea	70,627	68,047	7.7	-3.7
4. Saudi Arabia	44,566	53,919	6.1	+21
5. Canada	27,357	28,304	3.2	+3.5
6. Taiwan	21,867	21,266	2.4	-2.7
7. Japan	19,568	19,334	2.2	-1.2
8. Vietnam	16,098	16,579	1.9	+3
9. Mexico	14,199	14,779	1.7	+4.1
10. Brazil	10,868	13,286	1.5	+22.2
11. Turkey	11,278	10,821	1.2	-4.1
12. Iran	8,744	10,194	1.2	+16.6
13. United Kingdom	9,467	10,191	1.2	+7.6
14. Germany	9,819	10,160	1.1	+3.5
15. France	8,297	8,302	0.9	+0.1

Leading Countries of Origin for International Students at U.S. Universities

Increase in US students studying internationally

IIE estimates that 9.4 percent of all U.S undergraduates (including community college students) study abroad during their degree program, a figure that rises to 14.3 percent when only students studying for a bachelor's degree are included.(Redden 2014). The report goes on...

The United Kingdom remains the most popular destination for American study abroad students (up 4.5 percent), followed by Italy (up 0.7 percent), Spain (down 0.8 percent), France (up 0.2 percent), and China (down 3.2 percent). Other top destinations, in order of popularity, are Germany (up 1.9 percent), Costa Rica (up 7.6 percent), Australia (down 10.8 percent), Ireland (up 5.8 percent) and Japan (up 9 percent). There were swings of 10 percentage points or more this year for #11 destination South Africa (up 17.6 percent), #18 Denmark (up 14.8 percent), #19 South Korea (up 12.9 percent), #20 Peru (up 10.3 percent) ...Many in study abroad have pushed for more students to travel to "nontraditional" destinations outside Europe. Over all, about 53 percent of Americans studying abroad in 2012-13 chose to do so in Europe -- down from 63 percent 15 years earlier.

It is also interesting to note where these increases are taking place: Number of American Students Studying Abroad by Field of Study

Field of Study	2011-12	2012-13	%Change
Total	283,332	289,408	+2.1
Science, Technology, Engineering, Mathematics	59,921	65,223	+8.8
Social Sciences	63,427	63,914	+0.8
Business	58,091	59,147	+1.8
Humanities	30,667	30,167	-1.6
Fine or Applied Arts	22,138	22,670	+2.4
Foreign Languages	14,890	14,077	-5.5
Education	11,539	11,560	+0.2
Undeclared	8,365	7,711	-7.8
Other Fields of Study	14,294	14,939	+4.5

"The big difference we've seen over the past 15 years is that U.S. engineering schools, U.S. science departments are really pushing students to study abroad," said Peggy Blumenthal, the senior counselor to the president at IIE. "That didn't used to be the case. It used to be students in the social sciences, students in the humanities and arts, their professors have always encouraged study abroad, but now I think there's been a real

sea change among the [STEM] faculty members encouraging and making possible this kind of short-term study abroad within your academic degree." (Redden 2014)

Transnational Students:

"The dynamics of internationalization are changing. Many of the students that traditionally would have traveled overseas to study for an international qualification are now pursuing foreign degrees in their home, or neighboring, countries at local institutions through an array of collaborative arrangements with degree-awarding institutions from major education-exporting countries (Clark 2012).

This growing consumer class in Asia will expand a new segment of students who are willing to pay for a global educational experience while staying in their home country or region ... Glocals are characterised by aspirations that usually outstrip both their ability to afford a full fee-paying overseas education and their academic merit to gain admission to an overseas institution with financial aid. The traditional segment of international students go abroad for a combination of reasons such as career advancement, quality of education, immigration or the experience of living abroad. Glocals differ from this traditional segment as they look for career advancement and quality of education, without having to go very far from home [through international branch campuses, twinning arrangements and online education... "offshore provision."] High-quality collaborations, such as the one between Yale-NUS in Singapore, are also anticipated to attract glocals. (Choudaha 2012)

In terms of **absolute numbers**, more than 400,000 students were enrolled in the UK institutions through TNE. More than 100,000 students were enrolled in Australian institutions (Choudaha 2012).

Technology

Note

All of this section is drawn from "the internationally recognized NMC Horizon Report series and regional NMC Technology Outlooks are part of the NMC Horizon Project, a comprehensive research venture established in 2002 that identifies and describes emerging technologies likely to have a large impact over the coming five years in education around the globe. This volume, the NMC Horizon Report: 2014 Higher Education Edition, examines emerging technologies for their potential impact on and use in teaching, learning, and creative inquiry within the environment of higher education." (Johnson et al. 2014) Over the decade of the NMC Horizon Project, more than 850 internationally recognized practitioners and experts have participated on the panels, whose key criterion for inclusion of a topic was relevance to teaching and learning.

Key Trends Accelerating Higher Education Technology Adoption

Fast Trends: Driving changes in higher education over the next one to two years

Growing Ubiquity of Social Media

"Social media is changing the way people interact, present ideas, and judge the quality of content and contributions...Educators, students, alumni, and the general public routinely use social media to share news about scientific and other developments. The impact of these changes in scholarly communication and on the credibility of information" will likely be profound

Integration of Online, Hybrid, and Collaborative Learning

"Students already spend much of their free time on the Internet, learning and exchanging new information. Institutions that embrace face-to-face, online, and hybrid learning models have the potential to leverage the online skills learners have already developed independent of academia."

Mid-Range Trends: Driving changes in higher education within three to five years

Rise of Data-Driven Learning and Assessment

"As learners participate in online activities, they leave an increasingly clear trail of analytics data that can be mined for insights. Learning analytics experiments and demonstrations are currently examining ways to use that data to modify learning strategies and processes. Dashboards filter this information so that student progress can be monitored in real time..."

Flipped Classrooms

The flipped classroom refers to a model of learning that rearranges how time is spent both in and out of class to shift ownership of learning from the educators to the students. ...the teacher adapts instructional and collaborative approaches to suit students' learning needs and personal learning journeys. The goal is for students to learn more authentically by doing.

Shift from Students as Consumers to Students as Creators

Students are learning by making and creating ...as illustrated by the growth of user-generated videos, maker communities, and crowdfunded projects in the past couple of years which are increasingly the means of active, hands-on learning. University departments in areas that have not traditionally had lab or hands-on components are shifting to incorporate hands-on learning as part of the curriculum. Courses across all disciplines are in the process of changing to reflect the importance of media creation, design, and entrepreneurship...There is a growing trend in which students are doing more content creation and design...integrating content- and product-centered activities...a trend that should reach full impact in about three to five years. Makerspaces (hackerspaces) began to appear about 2005 in communities, where individuals could experiment using a range of tools. In the past few years, academic makerspaces and fabrication labs have popped up on university campuses as dedicated spaces with laser cutters, microcontrollers, and 3D printers. But creativity spaces are also found in libraries, which increasingly host creativity and production support centers.

Long-Range Trends: Driving changes in higher education in five or more years

Agile Approaches to Change

Pilots and other experimental programs are to more effectively nurture entrepreneurship among both students and faculty.... Institutions are increasingly experimenting with progressive approaches to teaching and learning that mimic tech startups. The Innovative and Entrepreneurial University highlighted ways in which universities nurture entrepreneurship within their infrastructure and teaching practices. Their research revealed a growing emphasis on both formal and informal programs that build students' interests in solving social and global problems, creating products, and contributing content to help existing businesses. "

Evolution of Online Learning

"Progress in learning analytics, adaptive learning, and a combination of cutting-edge asynchronous and synchronous tools will advance the state of online learning, though many of these are still the subjects of experiments and research by online learning providers and higher education institutions...Efforts such as Pearson's to integrate adaptive learning in online courses are leading this charge."

Important Developments in Educational Technology for Higher Education

Time-to-Adoption Horizon: One Year or Less

Learning Analytics

Learning analytics is an educational application of "big data," a branch of statistical analysis that was originally developed as a way for businesses to analyze commercial activities, identify spending trends, and predict consumer behavior. As web-tracking tools became more sophisticated, many companies built vast reserves of information to individualize the consumer experience. Education is embarking on a similar pursuit into new ways of applying to improve student engagement and provide a high-quality, personalized experience for learners.

Time-to-Adoption Horizon: Two to Three Years

3D Printing

Known in industrial circles as rapid prototyping, 3D printing refers to technologies that construct physical objects from three-dimensional (3D) digital content such as 3D modeling software, computer-aided design(CAD) tools, computer-aided tomography (CAT), and X-ray crystallography.

Games and Gamification

Gameplay has long since moved on from solely being recreational and has found considerable traction in the military, business and industry, and increasingly, education as a useful training and motivation tool.

Time-to-Adoption Horizon: Four to Five Years

Quantified Self (Self-tracking)

Apps not only track where a person goes, what they do, and how much time they spend doing it, but now what their aspirations are and when those can be accomplished. Novel devices, such as the Memoto, a camera worn around the neck that is designed to capture an image every half minute are enabling people to track their lives automatically. As more people rely on their mobile devices to monitor their daily activities, personal data is becoming a larger part of everyday life.

Virtual Assistants

As voice recognition and gesture-based technologies advance and more recently, converge, we are quickly moving away from the notion of interacting with our devices via a pointer and keyboard. Virtual assistants are a credible extension of work being done with natural user interfaces (NUIs), and the first examples are already in the marketplace.
Economy

Overall Job Availability

Job availability in this state of Georgia is not representative of the rest of the nation. However, it may be closer than we might think: While the Bureau of Labor Statistics considers Georgia's unemployment at 8.1 percent (the highest, followed by Mississippi at 7.9, Hurst 2014), the South's unemployment overall may look worse than states where the population is older and outside labor pools. In any case, it is a noteworthy distinction.

Employment and Unemployment in the Civilian Labor Force													
	Civilian L	abor Force ¹	E	mployment ²		Un	employ	vment R	ate				
	2013 (in	Percent Change 2008 to	2013 (in	Change 200	98 to 2013	Ra	tes	Nati Ra	onal nk ³				
	thousands)	2013	thousands)	Count	Percent	2008	2013	2008	2013				
50 states and D.C.	155,389	0.7	143,929	-1,433	-1	5.8	7.4						
SREB states ⁴	56,306	3.2	52,358	801	1.6	5.5	7						
as a percent of US	36.2		36.4										
Georgia	4,767	-1.6	4,378	-163	-3.6	6.3	8.2	16	11				

Job Availability for recent College Grads

While much is made of recent college graduates moving back home to live with parents, and while the jobs available may not be of highest quality, employment prospects for the general population are improving:

Educational Attainment	2008	2009	2010	2011	2012	2013
High school graduate, no college	5.7	9.7	10.3	9.4	8.3	7.5
Some college or Associate degree	4.6	8.0	8.4	8.0	7.1	6.4
Bachelor's degree and higher	2.6	4.6	4.7	4.3	4.0	3.7

Unemployment rate of the civilian population 25 years and over

Source: Bureau of Labor Statistics (BLS 2014)

Of course, since experience is highly valued, those barely 25 tend to employ at lower rates than the entire population. But even so, "Even when the jobless rate for college graduates was at its very worst in this business cycle, in November 2010, it was still just 5.1 percent. That is close to the jobless rate the rest of the work force experiences when the economy is good. Among all segments of workers sorted by educational attainment, college graduates are the only group that has more people employed today than when the recession started." (Rampell 2013)

Of course, this high employment rate is a qualified success. Though unemployment rates are lowest for those possessing Bachelor's degrees or higher, college grads are not necessarily finding employment which requires a college degree. "Lower-wage occupations, with median hourly wages of \$7.69 to \$13.83, accounted for 21 percent of job losses during the retraction. Since employment started expanding, they have accounted for 58 percent of all job growth...Since 2001, employment has grown 8.7 percent in lower-wage occupations and 6.6 percent in high-wage ones. Over that period, midwage occupation employment has fallen by 7.3 percent." (Rampell 2013)

"High-skilled people can take the jobs of middle-skilled people, and middle-skilled people can take jobs of low-skilled people," said Justin Wolfers, a professor of public policy and economics at the University of Michigan. "And low-skilled people are out of luck." (Rampell 2013)

But things are looking up. "According to a survey of 161 employers conducted by the National Association of Colleges and Employers (NACE), companies overall expect to hire 8.6 percent more graduates from the Class of 2014 than they did from the Class of 2013. That percentage is a slight increase from when employers were polled in the fall, at which time respondents said they

expected to increase their hiring by 7.8 percent. It's also up from last year, when employers said they expected to increase their hiring by just 2.1 percent....The most desired college majors for the Class of 2014 are business, engineering, accounting and computer science, according to the survey. Black says those majors have been some of the most sought after for the last several years. Another upside, [NACE president Black] says, is that a fair number of students are pursuing degrees in those fields." (Bidwell 2014)

"An early outlook for recruiting in the fall and for the Class of 2015 also looks promising, according to the survey. About 43 percent of employers said they expect to hire more new grads during the fall of 2014 than they did in the fall of 2013. Just 3.2 percent said they plan to decrease hiring in the fall." (Bidwell 2014)

Impact of Debt

Two reports, one by the Pew Research Council and one by the American Enterprise Institute, examine the relationship between student-loan debt and financial well-being. Both use data from the Federal Reserve Board. Neither study indicates that student loan debt impacts earnings, although there are some problems about the way the groups were differentiated, and fears that impact may be less discernable. "But when it comes to net worth, the picture is quite different. Households headed by a young college graduate in which no one has student loans have a median net worth of \$64,700. Among comparable graduate-led households with student debt, the median net worth is \$8,700." The difference in wealth is striking. (Supiano 2014)

Higher Education still means higher pay

BLS Data

For households headed by someone younger than 40,



Earnings and unemployment rates by educational attainment

Note: Data are for persons age 25 and over. Earnings are for full-time wage and salary workers. Source: Current Population Survey, U.S. Bureau of Labor Statistics, U.S. Department of Labor

Federal Reserve study

A recent study by the Federal Reserve concluded similarly, but looks at slightly different indices. One summary of the study *Do the Benefits of College Still Outweigh the Costs*? ...points out interesting observations: Yes, the gap between wages for college graduates and those without a college degree remains near all-time highs. But one reason that a college degree is still worth the investments is that average wages also have declined for workers with no college degree. Some specific findings as summarized by (Marklein 2014):

- Over the past four decades, those with a bachelor's degree generally earned **56% more** than high school graduates and those with an associate's degree 21% more than high school graduates.
- From 1982 to 2001, bachelor's degree holders earned an average **80% more** and associate's degree-holders almost 30% more than workers with no more than a high school diploma. Average wages increased 31% for workers with a bachelor's degree and 12% for those with an associate's degree. Wages were unchanged for high school graduates.
- From 2001 to 2013, the wage advantage over high school graduates reached **75%** for bachelor's degree holders and more than 20% for those with an associate's degree. **But average wages declined 19.3% for workers with a bachelor's degree [bold added]**, 11.1% for those with an associate's degree and a more modest 7.6% for high school graduates.
- The return on investment for earning an associate's or bachelor's degree has remained steady at about 15% a year over the past decade, "easily surpassing the threshold ... for a sound investment," about 7% a year, the authors, economists Jaison Abel and Richard Deitz, write.
- Areas of specialization also influence earnings, the report said. Among workers with a bachelor's degree, engineering majors earn the highest average annual returns, 21%, while education majors earn the lowest, 9%. Liberal arts majors post a 12% average annual rate of return.

So, "a college degree – expensive as it is – is still economically justifiable. Although the unemployment rate of college-educated workers has remained well below average, there is mounting evidence that recent college graduates are struggling to find *good* jobs. [italics added.] At the same time, college tuition has risen sharply, reaching record highs, and college graduates are increasingly finding themselves saddled with debt from student loans used to finance their education. Even so, earning a college degree still pays (Abel and Deitz 2014)."

But perhaps the key finding of new analyses is that it is partly because average wages have declined for workers with no college degree that the gap between wages for college graduates and those without a college degree remains near all-time high, according to a new study by the Federal Reserve Bank of New York. (Marklein 2014) And, whether you aspire simply to beat that gap or wish to keep climbing all the way to the corner office, the data suggests that it's all about degrees.

STEM Majors

Science, Technology, Engineering and Math (STEM) majors provide their graduates – and society – with huge benefits: (Carnevale, Smith, and Melton 2011)



Fastest-growing jobs

A recent publication (Bureau of Labor Statistics 2013) by the Bureau of Labor Statistics indicates growth areas: Highlighted are those career areas that might be considered to have some tie to Brenau University courses.

Fastest Growing (Number in 1,000's)	Degree requirement	2012	2022	Number	Percent
Personal care aides	Short-term on-the-job training	1190.6	1771.4	580.8	48.8
Home health aides	Less than high school	875.1	1299.3	424.2	48.5
Medical secretaries	High school diploma or equivalent	525.6	714.9	189.2	36
Market research analysts and marketing specialists	Bachelor's degree	415.7	547.2	131.5	31.6
Physical therapists	Master's/Pr Doc	204.2	277.7	73.5	36
Dental hygienists	Associate degree	192.8	256.9	64.2	33.3
Health specialties teachers, postsecondary	Doctoral degree	190	258.6	68.6	36.1
Nurse practitioners	Master's degree	110.2	147.3	37.1	33.7
Meeting, convention, and event planners	Bachelor's degree	94.2	125.4	31.3	33.2
Substance abuse and behavioral disorder counselors	High school diploma or equivalent	89.6	117.7	28.2	31.4
Physician assistants	Bachelor's degree	86.7	120	33.3	38.4
Information security analysts	Bachelor's degree	75.1	102.5	27.4	36.5
Physical therapist assistants	Associate degree	71.4	100.7	29.3	41
Brickmasons and blockmasons	High school diploma or equivalent	71	96.2	25.2	35.5
Nursing instructors and teachers, postsecondary	Doctoral degree	67.8	91.8	24	35.4
Interpreters and translators	Bachelor's degree	63.6	92.9	29.3	46.1
Helperselectricians	On-the-job training	60.8	83.3	22.4	36.9
Diagnostic medical sonographers	Associate degree	58.8	85.9	27	46
Physical therapist aides	Short-term on-the-job training	50	70.1	20.1	40.1

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Skincare specialists	Postsecondary non-degree award	44.4	62	17.7	39.8
Occupational therapist assistants	Associate degree	30.3	43.2	12.9	42.6
Insulation workers, mechanical	On-the-job training	28.9	42.4	13.5	46.7
Therapists, all other	Bachelor's degree	28.8	37.9	9.1	31.7
Helpersbrickmasons, blockmasons, stonemasons, and tile and marble setters	On-the-iob training	24.4	34.9	10.5	43
Audiologists	Doctoral or professional degree	13	17.3	4.3	33.6
Orthotists and prosthetists	Master's degree	8.5	11.5	3	35.5
Occupational therapist aides	Short-term on-the-job training	8.4	11.4	3	36.2
Genetic counselors	Master's degree	2.1	3	0.9	41.2
Segmental pavers	On-the-job training	1.8	2.4	0.7	38.1
Industrial-organizational psychologists	Doctoral degree	1.6	2.5	0.9	53.4

Meta-analysis of BLS forecasting of Fastest-Growing jobs

An interesting meta-research of data resulted from an investigation suggested by President Schrader: what if we compare

- jobs predicted to grow fastest from 2002 to 2012 (Hecker 2004)
- to jobs projected to grow fastest **2012 to 2022**(Bureau of Labor Statistics 2013).

The comparison is found below. Those jobs that were present in *both* fastest-growing jobs lists are highlighted.

Fastest Growing Jobs	2002to2012	Degree Required	2012to2022
Postsecondary teachers	X	Doctoral degree	
Home health aides	Х	Less than high school	Х
Personal care aides	Х	Short-term on-the-job training	Х
Medical assistants	X	Moderate-term on-the-job training	
Medical secretaries		High school diploma or equivalent	X
Computer systems analysts	Х	Bachelor's degree	
Computer software engineers, applications	X	Bachelor's degree	
Preschool teachers, except special education	X	Postsecondary vocational award	
Social and human service assistants	X	Moderate-term on-the-job training	
Market research analysts and marketing specialists		Bachelor's degree	X
Computer software engineers, systems software	X	Bachelor's degree	
Dental assistants	X	Moderate-term on-the-job training	
Network systems and data communications analysts	X	Bachelor's degree	
Computer and information systems managers	X	Bachelor's or higher degree, plus work experience	
Network and computer systems administrators	X	Bachelor's degree	
Fitness trainers and aerobics instructors	X	Postsecondary vocational award	
Self-enrichment education teachers	X	Work experience in a related occupation	
Medical records and health information technicians	X	Associate degree	
Health specialties teachers, postsecondary		Doctoral degree	X
Dental hygienists	Х	Associate degree	Х
Database administrators	X	Bachelor's degree	
Physical therapists	Х	Master's/Pr Doc	Х
Nurse practitioners		Master's degree	X
Meeting, convention, and event planners		Bachelor's degree	X
Physician assistants	Х	Bachelor's degree	Х

Fastest Growing Jobs (Continued)	2002to2012	Degree Required	2012to2022
Respiratory therapists	X	Associate degree	
Interpreters and translators		Bachelor's degree	X
Occupational therapists	X	Bachelor's degree	
Substance abuse and behavioral disorder counselors		High school diploma or equivalent	X
Information security analysts		Bachelor's degree	X
Diagnostic medical sonographers		Associate degree	X
Brickmasons and blockmasons		High school diploma or equivalent	X
Nursing instructors and teachers, postsecondary		Doctoral degree	X
Veterinary technologists and technicians	X	Associate degree	
Helpers—electricians		On-the-job training	X
Physical therapist assistants	Х	Associate degree	X
Environmental engineers	X	Bachelor's degree	
Skincare specialists		Postsecondary non-degree award	X
Physical therapist aides	Х	Short-term on-the-job training	X
Hazardous materials removal workers	X	Moderate-term on-the-job training	
Insulation workers, mechanical		On-the-job training	X
Helpersbrickmasons, blockmasons, stonemasons, and tile and marble			
setters		On-the-job training	Х
Environmental science and protection technicians, including health	Х	Associate degree	
Therapists, all other		Bachelor's degree	X
Occupational therapist assistants	Х	Associate degree	Х
Audiologists		Doctoral or professional degree	Х
Occupational therapist aides	Х	Short-term on-the-job training	Х
Orthotists and prosthetists		Master's degree	Х
Industrial-organizational psychologists		Doctoral degree	X
Genetic counselors		Master's degree	X
Segmental pavers		On-the-job training	X

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Skill Shortage

A recent article in the Economist makes a case study of Georgia as illustrative of a much wider economic problem. The state has an acute shortage of tradesmen, which may partially explain the Georgia's unemployment rate, which hovers around 7.4%, over a point higher than the national rate:

[Georgians' might otherwise take pride in] the Atlanta Media Campus and Studios, the largest complex of its kind outside California. The lot has hosted the final two installments of "The Hunger Games" and "The Fifth Wave", an upcoming science-fiction film. [But] what ought to worry local residents is Georgia's inability to produce workers who can build the sets, run the wires or manage the sound for such films. This skills shortage may endanger the \$4 billion or so that Jim Jacoby, whose firm plans to redevelop the complex, reckons the film industry could bring to the state this year.

Turns out, the skills shortage problem, albeit in less acute form, is in evidence across America. More than half of the country's tradesmen are aged over 45. According to the Department of Labor, America will need 41,700 more cement masons, 114,700 more electricians and 218,200 more carpenters by 2022. The government already spends around \$17 billion a year trying to close what the president, Barack Obama, calls the "skills gap".

The Economist article concludes ominously: "The success of Mr. Jacoby's investment in Georgia may depend on whether he can bridge its skills gap." (Economist Staff Report 2014)

Debt

While college may increase chances of employment – and, on average, correlate with better salaries – the debt students leave with suppresses the positive contribution of higher education to both **individuals** and the **economy**. Because of debt, recent students postpone decisions about starting businesses, buying houses, starting families and furthering their education.



(Marks 2013)

While the amounts of debt are startling, student borrowing has actually dropped for the first time in decades. "Nationwide, total borrowed amounts (loans) fell below total financial aid (grants/work-study/tax benefits) in 2009-10. In that year, for the first time since 1982-83, the amounts loaned declined. … In 1981-82, students or their parents borrowed \$7 billion and received \$10 billion in financial aid. By 2011-12, borrowing was up to \$113 billion, and financial aid totaled \$131 billion." (Marks, 2013)

ENVIRONMENT

"Climbing walls and winning sports teams aren't the only selling points for colleges and universities these days. An increasing number of students are also interested in their school's "carbon footprint," or more specifically, their lack of one." (Young 2014)

Campus and Carbon

The big news in campus sustainability this year may be that there is no big news: colleges interested in reducing their footprints are still following the same goals, and *AASHE* and the *President's Climate Commitment* continue to provide standards. For example, this story was aired on a recent *Here and Now*:

In the last six years, hundreds of campuses around the country have signed on to something called the *Presidents' Climate Commitment*. To simplify a complicated document, that commitment basically says three things: that schools recognize the dangers of climate change as a fact; they understand there are benefits to reducing greenhouse gases; and they commit to heading toward the goal of carbon neutrality...So far only a few, including Colby College in Maine and Green Mountain College in Vermont, have achieved total neutrality. But others, like the University of Minnesota at Morris, are well on their way. Earlier this year, that school was awarded "the Association for the Advancement of Sustainability in Higher Education" Gold Rating. (Young 2014)

Some colleges attempt carbon neutrality without use of allowable devises (Young 2014): in other words, they achieve "real" neutrality – carbon neutrality achieved without using technically allowable discounting mechanisms, such as the purchase of offsets.

Among student activities, divestiture of energy stock remains a key focus of campus activism, and more and more groups can boast success in changing board policy at their institutions.

In the classroom, a recent Chronicle of Higher Education article suggests that campuses might well look to current research on cognition, and note findings on how cultural filters influence our acceptance of science and environmental evidence. (Voosen 2014)

Politics

The focus on carbon by campuses may be intensified in light of recent elections. Many green activists despair, and such fearful expressions as these are common:

"A Senate GOP majority can have an extremely destructive effect [on environmental efforts.] It will put a cohort of science-deniers into positions of authority over the very science they want to trample...." The Republican win seats **James Inhofe**, R-Oklahoma, to the chair position on the Environment and Public Works Committee. "This committee controls the Environmental Protection agency, which is charged with addressing climate change and what to do about it. Inhofe is the most adamant global warming denier in the Senate; he has called it a hoax." (Plait 2014) It is also worth noting that the new Senate Majority Leader is firmly against any regulation of the coal industry, and that he, **Mitch McConnell**, hails from a coal state. "McConnell deflects questions about whether he accepts climate science by saying he isn't a scientist and citing climatedenying conservative pundit George Will. But he is clear about where he stands on fossil fuels, especially coal: He loves them. Attacking President Obama for not sharing his passion for burning carbon was central to McConnell's reelection campaign this year." (Adler 2014) Additionally, Lisa Murkowski (R-Alaska) takes the gavel of Senate Energy and Commerce Committee and climate denier Ted Cruz (R-Texas) will chair the House Committee on Science and Technology. Possibly the two top energy-related priorities of the Republicans? "**stop EPA from regulating CO2 and approve the Keystone XL pipeline** (Adler 2014)."

New Science Findings

This political development coincides with the final report of the UN's Intergovernmental panel which concludes, after 5 years of study, that protecting the planet will require a dramatic shift away from fossil fuels.

The Fifth Assessment Synthesis Report, as it's called, pulls together the conclusions of three UN Intergovernmental Panel on Climate Change (IPCC) working groups, which issued reports over the past year on the underlying science, the impacts, and the ways to address climate change. Prepared by hundreds of scientists from around the globe, it's a statement of the scientific consensus aimed at the people in government who might do something about climate change. (Shogren 2014)"

5 takeaways of the IPCC report: Stronger evidence that humans cause climate change; stronger statements about that impact; it's happening now; what is needed is politics (international agreements; there is hope that (at Paris) countries can come together to influence business toward greenhouse gas goals (to cut greenhouse gas emissions between 40 & 70 percent by 2050.) (Shogren 2014)

POLITICS

...concerns by lawmakers and the general public about college affordability and student outcomes will amplify current efforts by higher education leaders (AASCU 2013).

The impact of the Midterm results

Now that the November 4, 2014 election is behind us, we might have clearer ideas on what to expect by which players are in and which are out:

Lamar Alexander: With Republicans taking over the Senate, leadership of the all-important education committee will transfer to the lawmaker who already has terms as U.S. secretary of education and as the University of Tennessee's president on his CV. His main higher-education goal: "to deregulate it."... As the man charged with driving the reauthorization of the Higher Education Act, he's certainly got cards to play. What should we expect out of Senator Alexander? Staunch opposition to President Obama's accountability agenda, an attempt to shift accreditors' focus away from regulatory compliance, and a push to streamline student aid—including, possibly, a simplified federal student-aid form.."

Rep. George Miller of California, the top Democrat on the House education committee and its former chair, is retiring. Mr. Miller has been a longtime champion of working-class and poor students. Among his recent successes: securing mandatory funds for Pell Grants and introducing the legislation that created income-based repayment for student-loan borrowers. **Sen. Tom Harkin** of Iowa, chair of the Senate's education committee and an appropriations subcommittee on education, also declined to run again. During his four decades in Congress, Mr. Harkin fought for increased funding for student aid and led a bruising investigation into for-profit colleges.

(Basken, Field, and Read 2014)

A state-level referendum may have some impact beyond its borders. In North Dakota, voters were given the chance to change the makeup of the regents board: the current "volunteer" (traditional) system would give way to a 3-person appointed board, all three of which would serve full-time. The implications some fear from this Republican initiative is that, while this may make board members more accountable to the legislature, the legislature would have too much influence over board members, especially those without prior experience in higher education. Ms. Kirstin Diederich said. "What I'm concerned about is that legislators will start to get into 'Which majors do you offer?'" [rather than confining questions to budget.] (Lewontin 2014)

Impact on adjuncts

The new composition of the House will probably reverse the interest in intervening in relationship between a college and its adjuncts. A year ago, Congress was hearing testimony about how adjuncts were being denied work by colleges that were worried about keeping their hours low enough to avoid being required to provide them with health coverage under the Affordable Care Act. Partly in response to their testimony before the Internal Revenue Service, that agency this year established minimum standards for how their hours should be counted by colleges, in the context of new guidelines for colleges under the Affordable Care Act. The House in July passed a bipartisan measure that would require colleges to collect and report more information about their part-time instructors. Although the Senate did not take up the measure, similar language remains under consideration by Congress as part of the reauthorization of the Higher Education Act. Part-time instructors at public four-year colleges continue to hold out hope of qualifying for public-service loans — through regulatory instead of Congressional action — and this week they were urging the Education Department to alter its rules to declare them eligible. To the extent that adjunct instructors retain hope of Congressional help, however, they are losing a key ally, Representative Miller (P. Schmidt 2014).

President Obama's Plan

As part of a larger "Better Bargain for the Middle Class" initiative, the President outlined in 2013 a "new agenda to combat rising college costs and make college affordable for American families. His "Making College More Affordable" plan will measure college performance through a new ratings system so students and families have the information to select schools that provide the best value." It is proposed that Congress can ultimately "tie federal student aid to college performance so that students maximize their federal aid at institutions providing the best value. The President's plan will also take down barriers that stand in the way of competition and innovation, particularly in the use of new technology, and shine a light on the most cutting-edge college practices for providing high value at low costs" (Office of the Press Secretary 2013).

White House officials said the government rating system would provide an alternative to the private rankings, where colleges often battle for spots by erecting lavish new athletic centers and libraries and by becoming more selective in whom they admit (Shear 2014).

Indeed, the Federal Government has a high stake in higher education: \$140 Billion in federal grants and loans for students; to mention one (Hazelkorn 2014). Another problem is the student debt crisis, at way over \$1 Trillion. Another consideration is global competitiveness,

Despite spending 2.8 percent of its GDP on tertiary education, which is way above the OECD average of 1.6 percent and more than every other country, American student performance is falling behind. Many countries now surpass the United States in the percentage of 25- to 34-year-olds with bachelor's degrees. Those countries include Ireland, which despite experiencing a decline of over 20 percent in funding for higher education since 2008, is ranked 5th in completion rates by the OECD, compared with the United States, which is in 12th place (Hazelkorn 2014).

However, the idea that the government would try to rate the schools has rattled the entire higher education system, from elite private institutions to large state universities to community colleges. "Applying a sledgehammer to the whole system isn't going to work," said Robert G. Templin Jr., the president of Northern Virginia Community College. "They think their vision of higher education is the only one." Many college leaders accuse the president of grasping for a simplistic solution to what they call a crisis of soaring tuition.(Shear 2014)

Specific criticisms of the plan span the gamut:

• Perhaps one of the most echoed criticisms is by the National Association of Independent Colleges and Universities. David Warren, NAICU's president, wrote "Private, independent college leaders do not believe it is possible to create a single metric that can successfully compare the broad array of American higher education institutions without creating serious unintended consequences," adding that any rating system would reflect policy makers' priorities rather than those of individual students searching for a college. "By its nature, a metric is quantitative," he wrote. "Whereas finding a 'best fit' college has qualitative aspects that are equally as, or even more important than, the quantitative aspects." (Lederman, Stratford, and Jaschik 2014)

- Even among those who feel the US D.O.E. can be trusted to manage a sensitive, high-stakes database (e.g, after revelations of privacy invasion and breeches of security in the wake of recent NSA leaks), some, like American Council on Education's Senior VP Terry Hartle, "questioned the wisdom of basing a ratings plan on the current federal database," widely acknowledged to be flawed. They claim it could be calamitous for colleges. (Ekman 2014)
- There is fear among many college leaders that the ratings system will create improper incentives for institutions. (Lederman, Stratford, and Jaschik 2014) Many college presidents said a rating system like the one being considered at the White House would elevate financial concerns above academic ones and would punish schools with liberal arts programs and large numbers of students who major in programs like theater arts, social work or education, disciplines that do not typically lead to lucrative jobs.(Shear 2014)

The pressure of the Federal rating system will indeed increasingly focus colleges on retention. And the President's plan will only add to existing pressure on colleges to focus on retention -- pressure from other rating and guidebook services, from public higher education commissions, from bottom-line considerations at enrollment driven institutions.

The fear is that, while the pressure in colleges for retention has conventionally fallen on student activities offices, the added pressure will work to move responsibility for retention away from student services and more to those with instructional responsibilities. Standards will suffer. Oddly, there seems little published comment on that obvious omission: no part of the rating system includes measures of student academic achievement, which may suit many academic planners just fine.

Financing College

Higher Education Affordability Act: The sausage making is still taking place in the Senate education committee, but some aspects of a new law are taking shape: We know that Senator Lamar Alexander will introduce a bill that would

eliminate the Free Application for Federal student Aid (FAFSA): the 100 questions would be replaced by only two: inquiry on family size and family income. This proposal comes in advance of the Higher Education Act proposal Committee Chairman Tom Harkin will release: Harkin's proposal is expected to "include a handful of policies that Republicans, including Alexander, are likely to find objectionable. It will include legislation that would allow borrowers to refinance student loan debt, and a student-unit record system to track graduates' success in the work force, according to people who have been briefed on the plan. It will also call for tougher accountability measures for for-profit colleges, including a stricter cap on the share of revenue that such institutions can receive from the U.S. Department of Education. Colleges will also face restrictions on using federal money for advertising and marketing purposes. Alexander, meanwhile, is working with colleges on finding ways to reduce regulatory burden during this reauthorization of the Higher Education Act." Harkin: "We cannot have a piecemeal approach to tackling the rising cost of a college education. We need a comprehensive strategy that addresses the higher education system as a whole, taking into account states, students, and institutions." (Stratford 2014)

• Capping tuition revenue institutions can use for need-based aid: The Board of Governors of North Carolina university system will consider capping each of the system's 16 campuses to 15% of total tuition revenue to aid. The case being made (by a board almost completely Republican -- 29 of 35): The current system amounts to a subsidy paid by middle- and upper-income families to lower-income students. Currently, "[NC] universities are levying tuition increases to pay for need-based aid—and, in doing so, they are driving up the debt burden of students across the system. "All students would benefit from restraining growth in the cost of tuition, which contributes to increases in the amount of student debt," says a working group's explanation of the proposal. There is "a new emphasis on fiscal responsibility. The current system of using tuition as a key source of financial-aid money has created a vicious cycle in which tuition increases are needed just to provide more aid," said Ms. Jenna Robinson. But, she argued, middle-class families are bearing the brunt of that approach: Because they don't qualify for the aid, they can't keep up with the

increased costs. Ms. Robinson's other claim – that students from out of state benefit from tuition revenue of North Carolina residents. Independent research shows that the money actually flows in the other direction (with out-of-stater's money actually going to residents!) Also, some higher-education experts question her primary assertion: in fact, they claim, a cap on aid allocation would result in higher costs for low-income students without any real benefit for students at higher income levels. (Kelderman 2014) The proposal seems to result more from political agendas than statistical analyses.

Free Tuition: In return for a free pass, a plan being piloted in Michigan requires students agree to pay a fixed percentage of their post-collegiate income — 2% for community college students and 4% for university students — to a fund for five years for each year they attended school under the program. So a student who went to the University of Michigan and graduated in four years would have to pay 4% of their income back for the first 20 years after college. (Jesse 2014) More than 20 states are looking at some version of the plan.

Nearby Public Colleges

A consolidation involving eight¹ public institutions in Georgia impacted two nearby institutions. Chart considers UNG Dahlonega, the UNG Gainesville Campus, Georgia Gwinnett College. (ORP October 2014.)

¹Gainesville State College and North Georgia College & State University; Middle Georgia College and Macon State College; Waycross College and South Georgia College; and Augusta State University and the Georgia Health Sciences University.

	APPLIED ENVIRONMENTAL SPATIAL ANALYSIS	ARABIC LANGUAGE & LITERATURE	ART	ART EDUCATION	ART MARKETING	ATHLETIC TRAINING	ΒΙΟΓΟϾλ	BUSINESS ADMIN ACCOUNTING	BUSINESS ADMIN ECONOMICS	BUSINESS ADMIN FINANCE	BUSINESS ADMIN GENERAL BUSINESS	BUSINESS ADMIN INTERNATIONAL BUSINESS	BUSINESS ADMIN MANAGEMENT	BUSINESS ADMIN MARKETING	CHEMISTRY/ENGINEERING - DUAL DEGREE	CHEMISTRY	CHINESE LANGUAGE AND LITERATURE	COMMUNICATION	COMPUTER INFORMATION SYSTEMS	COMPUTER SCIENCE
Brenau			BFA	BFA			BS	BBA			BBA			BBA				BA		
UNG - Dahl		BA	BA	BS	BS	BS	BS	BBA		BBA			BBA	BBA	BS	BS	BA		BBA	BS
UNG - Gns	BS						BS	BBA		BBA			BBA					BA		
Ga. Gwin.							BS	BBA	BBA	BBA	BBA	BBA	BBA	BBA		BS				

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	CRIMINAL JUSTICE	CRIMINAL JUSTICE - CRIMINAL FORENSICS	EARLY CHILDHOOD EDUCATION	EARLY CHILDHOOD/ SPECIAL EDUCATION	EARLY CHILDHOOD CARE AND EDUCATION	ENGLISH	ENGLISH - CONCENTRATION IN LITERATURE OR WRITING	FRENCH LANGUAGE AND LITERATURE	GENERAL STUDIES	HISTORY	HUMAN SERVICES DELIVERY AND ADMINISTRATION	INTERNATIONAL AFFAIRS	INFORMATION TECHNOLOGY	MATH/ ENGINEERING - DUAL DEGREE	MATHEMATICS	MIDDLE GRADES EDUCATION	MUSIC	MUSIC EDUCATION	NURSING	PHYSICAL EDUCATION
Brenau			BS	BS		BA				BA							BA	BA	BSN	
JNG - Dahl	BS	BS	BS	BS		BA	BA	BA	BS	BA		BA		BS	BS	BS	BA	BS	BSN	BS
JNG - Gns			BS	BS	BS	BA				ВА	BA				BS					
Ga. Gwin.		BS	BS. Ed.	BS. Ed.		ВА				ВА			BS		BS				BS	

	HYSICAL EDUCATION TEACHER EDUCATION	HYSICS / ENGINEERING - DUAL DEGREE	HYSICS	OLITICAL SCIENCE	Sychology	ECONDARY EDUCATION - ENGLISH	ECONDARY EDUCATION - HISTORY	ECONDARY EDUCATION - MATHEMATICS	ECONDARY EDUCATION - SCIENCE	PANISH LANGUAGE AND LITERATURE	OCIOLOGY	PANISH WITH BUSINESS EMPHASIS	ECHNOLOGY MANAGEMENT	ECHNOLOGY MANAGEMENT / PARALEGAL	ECHNICAL THEATER
Brenau				BA	BA & BS	0	0	0	0	0		0			BFA
UNG - Dahl	BS	BS	BS	BS	BS	BA	BA	BS	BS	BA	BS	BA			
UNG – Gns	BS			BS	BS								BAS	BAS	ВА
Ga. Gwin.				BA	BS										

Immigration

Undergraduates:

Although unlikely, if in fact the "Border Security, Economic Opportunity, and Immigration Modernization Act of 2013" passes the US House of Representatives, it is widely considered a "win" for higher education.

For the first time in several years, 2013 may present a rare window of opportunity for Congress to come together in a bipartisan manner around comprehensive immigration reform. Potential federal legislation could include elements of the DREAM Act (Development, Relief, and Education for Alien Minors), first introduced more than a decade ago, which would provide conditional permanent residency for undocumented residents who meet certain criteria, including completion of two years of college or military service.

"Dreamers" -- people brought to the United States illegally before the age of 16 -- who meet the criteria would be eligible for student aid. (Gardner 2013)

Graduates:

Another aspect of this bill with impact for higher education is the "green-card" section. Foreigners who earned Ph.D.'s at American universities would be eligible for green cards, while foreign students who completed master's degrees or Ph.D.'s in science, technology, engineering, or mathematics (the STEM fields) could petition for a card. These advanced degrees will automatically garner green-cards.

In addition, the bill would also keep colleges exempt from the national cap on H-1B visas, allowing them to temporarily employ researchers who are not citizens. It also would cut and limit student-visa fees (Weinberg 2013).

Higher-education lobbyists drew support from businesses in Silicon Valley as well as the U.S. Chamber of Commerce, which pushed to expand citizenship eligibility for high-skilled workers

Competency-Based and Online Education

We can expect to see pressure to grant credit for work accomplished on novel platforms, such as MOOCs (see above.)

State policy officials will also pay closer attention to how the fast growing array of free and fee-based online courses can be optimally packaged into competency-based and credit-bearing credentials and which can prove to be a sustainable business model for institutions. An example of this is the 14 universities of the Pennsylvania State System of Higher Education (PASSHE), which have formed an innovative collaboration with LearningCounts.org and the Council for Adult and Experiential Learning (CAEL). Together, this group will ensure that prospective students receive credit for college-level learning they have gained through their work, military or other prior learning experiences, including completion of online instruction such as Massive Open Online Courses (MOOCs). (Marshall 2012) The expansion of online and competency-based educational delivery models will help push the boundaries of lower-cost higher education. This has been a current focus of many policymakers, including the governors of Texas and Florida, who recently called on the public colleges in those states to finds ways to offer bachelor's degrees for as little as \$10,000. (AASCU 2013) [As mentioned, Georgia Tech has announced that for \$7,000, students can get a degree in computer science through mass courses they author.]

It will be interesting to see if traditional colleges will lose students to institutions who attempt to offer whole degrees through mass open platforms.

OTHER MISCELLANEOUS TRENDS

Flexibility

The smartest planners know things will change. Flexibility is the goal. At Cornell Tech, on the first Academic Building, "second, third and fourth stories of a five-level structure are entirely undefined, dominated by large, uninterrupted spaces. Classrooms? Faculty offices? The building will have little of the former" and, for the latter, "office zones, to be filled with workstations. Those seeking some form of enclosure can enter a 'huddle room,' 'swing space', 'collab' room, or 'hub lounge.'" Another idea is to have a structure where all of the building-maintenance functions – heating, cooling, ventilation, lighting, fire safety—are automated and share data with each other on a campus network. For example, the light fixtures in Cornell Tech's first academic building will have sensors" that can read room occupancy. "What really accomplishes things is getting the data to actually be exchanged between all of these different systems and applications", e.g., to interact with room scheduling software. Where does it really get radical? The campus will not build a data center. Server space will all be in the cloud. In a nutshell, the Cornell Tech planning team is determined to commit to nothing, "How do you create a new institution in an age when everything – office design, intelligent infrastructure, cloud computing, classroom technology – presents some opportunity to break with the past? What do you build? What do you wire? What kind of interactions do you encourage?... at Cornell Tech...those responsible for building the campus of the future won't pretend to know what the future holds." (Arent 2014)

Appendix 1: ETS Scaled Scores and Percentile Rankings

	Tot Sco	al re	Criti Thinl	ical king	Read	ing	Writ	ing	Mathem	natics	Human	ities	Socia Scienc	al ces	Natur Scienc	al es
	Avg score	%ile	Avg score	%ile	Avg score	%ile	Avg score	%ile	Avg score	%ile	Avg score	%ile	Avg score	%ile	Avg score	%ile
FR 2007	444	69	112	67	118	60	115	65	112	54	114	61	113	59	116	64
FR 2009	440	62	110	54	116	52	114	55	112	54	113	53	112	52	114	53
FR 2011	437	54	109	50	115	44	113	47	111	47	112	47	110	42	113	46
FR 2013	436	53	109	50	115	44	113	47	111	47	114	61	112	52	113	46
SR 2009	445	48	112	47	119	44	114	39	112	38	115	44	114	45	116	44
SR 2011	444	46	112	47	118	38	115	48	112	38	115	44	114	45	115	42
SR 2013	438	35	110	34	116	31	113	31	110	25	114	43	112	34	114	33

%tile rankings are relative to all participating four-year institutions between July 2008-June 2013. Brenau Freshmen are compared to entering Freshmen (those with 0 credit hours) and Brenau Seniors are compared to Seniors (those with more than 90 semester credit hours).

Appendix 2 ETS Criterion ("Proficiency") Results

(numbers are %ages)

Reading 1	Seading 2	Crit Think	Writing 1	Writing 2	Writing 3	Math 1	Math 2	Math 3	Seading 1	Reading 2	Crit Think	Writing 1	Writing 2	Writing 3	Math 1	Math 2	Math 3
-----------	-----------	------------	-----------	-----------	-----------	--------	--------	--------	-----------	-----------	------------	-----------	-----------	-----------	--------	--------	--------

										Students who scored "Not
Students who sco	ored "I	Profici	ent"							Proficient"
FR 2007	73	30	3	78	15	4	51	24	4	FR 2007 8 43 74 3 30 67 19 50 8
FR 2009	60	24	3	67	11	4	47	19	3	FR 2009 14 56 83 6 45 69 19 55 80
FR 2011	47	21	4	56	14	4	37	17	4	FR 2011 28 60 89 11 52 75 26 58 8
FR 2013	46	17	1	40	14	4	39	14	5	FR 2013 32 67 92 20 62 78 40 62 8
SR 2009	72	36	7	72	17	6	53	21	6	SR 2009 9 41 70 5 37 68 23 50 8
SR 2011	71	35	4	71	19	5	47	19	6	SR 2011 10 41 73 5 35 67 25 54 8
SR 2013	57	26	5	60	16	5	33	11	2	SR 2013 24 56 82 14 51 75 33 63 9
*Freshm. Natl										*Freshm. Natl
Avg	50	23	3	51	13	5	43	20	5	Avg 26 60 87 17 57 77 29 57 8
*Seniors Natl										*Seniors Natl
Avg	71	42	8	67	23	10	60	34	10	Avg 13 38 71 9 40 62 17 41 7

*National averages are computed across all participating four-year institutions between July 2008-June 2013.

Proficient + Not Proficient do not total to 100% because students who scored "Marginally Proficient" are not included in totals. Per ETS.org, "A student classified as marginal is one whose test results do not provide clear enough evidence to classify the student as proficient or not proficient."

Appendix 3 Essay Tests

% of students achieving Essay score within given range					
	1-3	4-6			
FR 2007	46%	55%			
FR 2009	48%	52%			
FR 2011	35%	64%			
FR 2013	32%	66%			
SR 2009	38%	62%			
SR 2011	28%	71%			
SR 2013	36%	64%			

Differences Year to Year in average Essay Score					
		1-3	4-6		
FR 2007 - 2009		2%	-3%		
FR 2009 - 2011		-13%	12%		
FR 2011 - 2013		-3%	2%		
SR 2009 - 2011		-10%	9%		
SR 2011 - 2013		8%	-7%		

Differences Fr to Sr in average Essay Score (not the same as matched pairs)

	1-3	4-6
FR 07 - SR 2011	-18%	16%
FR 009 - SR		
2013	-12%	12%

Appendix 4

Delbanco's book describes the current state of higher education in the context of its place in tradition: Here are some excerpts:

College life: lecture with interaction

- By the later fifteenth century, the cloistered structure of the Oxbridge college had emerged in its modern form: rooms accessible from an inner courtyard connected by walkways to chapel, library, and hall. The hall— a great room with rushes strewn on the floor to be gathered up and burned from time to time as a means of controlling dirt— was the center of college life. It was in hall that dining, lectures, and sometimes musical and theatrical performances took place; at one end stood the "high table," Delbanco, Andrew (2012-03-22). College (p. 38). Princeton University Press. Kindle Edition. Part of the point—an important part— was for undergraduates to witness social and intellectual exchange among their superiors, in the hope that they would aspire someday to be worthy of sitting among them. Delbanco, Andrew (2012-03-22). College (p. 38)
- It is what Nathaniel Hawthorne (Bowdoin, class of 1825) had in mind when he remarked that "it contributes greatly to a man's moral and intellectual health, to be brought into habits of companionship with individuals unlike himself, who care little for his pursuits, and whose sphere and abilities he must go out of himself to appreciate." It is what Newman had in mind when he spoke of college as a place where students are "brought, by familiar intercourse" into a relation where "they learn to respect, to consult, to aid each other." It's what Dewey meant when he described education as "a mode of social life" in which "the best and deepest moral training is precisely that which one gets through having to enter into proper relations with others in a unity of work and thought." It's why William Perry insisted that maturity in a college student means realizing there is something to learn from one's peers. Delbanco, Andrew (2012-03-22). College (pp. 54-55).
- The educational premise is simple: a class should be small enough to permit every student to participate in the give-and -take of discussion. (Delbanco, Andrew (2012-03-22). College (p. 57)
- Puritanism also had within it a proto-democratic conception of truth emerging through discussion and debate among human beings who are inherently equal. Delbanco, Andrew (2012-03-22). College (p. 60). Princeton University Press.
- At its best, a small class is an exercise in deliberative democracy, in which the teacher is neither oracle nor lawgiver but a kind of provocateur. Delbanco, Andrew (2012-03-22). College (p. 58).
- the average churchgoer could expect to attend roughly seven thousand sermons in a lifetime, which amounted (since a sermon might last two hours or more) to nearly "fifteen thousand hours of concentrated listening." This was the context— a world saturated by the spoken

word— in which the American college first arose, and from which the modern college lecture derives. Delbanco, Andrew (2012-03-22). College (p. 62).

Faculty:

In order to create the best conditions for it to take hold, such a teacher avoids exhibitionistic erudition, speaks in plain rather than florid language, and, humble before the subject, understands himself as merely the human instrument by which God may choose to convey to the student the "spirit of discernment." Such a teacher also knows there is no telling when, or whether, the transmission will take place.
 Delbanco, Andrew (2012-03-22). College (p. 48).

Curriculum: "all branches of knowledge"

- A college aspired to be a place (in Newman's later formulation) where "all branches of knowledge" are "connected together, because the subject-matter of knowledge is intimately united in itself, as being the acts and the work of the Creator." Its subject was nothing less, in Edwards's words, than "the university of things," a phrase that preserves the root meaning of the word "university": the gathering of all knowledge into a unified whole. Until the last third of the nineteenth century, this effort to grasp what Frederick Barnard (the man for whom the women's college at my university was named) called "the beautiful truths which are to be read in the works of God" remained the official purpose of America's colleges. Delbanco, Andrew (2012-03-22). College (p. 41). ... "There is not one truth in religion, another in mathematics, and a third in physics and in art," as one Harvard graduate (class of 1825) put the matter. "There is one truth, even as one God." Delbanco, Andrew (2012-03-22). College (p. 41). Princeton University Press. Kindle Edition.
- Senior and junior professors, along with graduate student instructors, gather weekly to discuss the assigned texts— a rare opportunity for faculty from different fields, and at different stages of their careers, to consider substantive questions. And, not least among its benefits, it links all students in the college to one another through a body of common knowledge: once they have gone through the Core, no student is a complete stranger to any other. Delbanco, Andrew (2012-03-22). College (p. 30).

College purpose: Character and Discernment

- Yet despite its history of misuse and abuse, there is something worth conserving in the claim, as Newman put it, that education "implies an action upon our mental nature, and the formation of a character." Delbanco, Andrew (2012-03-22). College (p. 43).
- Writing in 1886, the founding president of Johns Hopkins, an institution mainly devoted to advanced research where undergraduates were initially absent, insisted that a university must never be "merely a place for the advancement of knowledge or for the acquisition of learning;

it will always be a place for the development of character." 14 Today, this assertion that a college should concern itself with something called character will strike us as a throwback to another time and world. Delbanco, Andrew (2012-03-22). College (p. 42).

- Book learning alone might be got by lectures and reading; but it was only by studying and disputing, eating and drinking, playing and praying as members of the same collegiate community, in close and constant association with each other and with their tutors, that the priceless gift of character could be imparted to young men. Delbanco, Andrew (2012-03-22). College (p. 42).
- to push oneself from the easy part to the hard part; to listen to criticism and use it; to reject one's own work and try again." Delbanco, Andrew (2012-03-22). College (p. 42).
- so it should be obvious that the best chance we have to maintain a functioning democracy is a citizenry that can tell the difference between demagoguery and responsible arguments. Delbanco, Andrew (2012-03-22). College (p. 29). Princeton University Press. Kindle Edition.
 ...studies will be of the slightest possible use to you in after life— save only this— that if you work hard and intelligently you should be able to detect when a man is talking rot, and that, in my view, is the main, if not the sole, purpose of education." 35 Americans tend to prefer a two-syllable synonym, bullshit, for the one-syllable Anglicism, rot— and so we might say that the most important thing one can acquire in college is a well-functioning bullshit meter. It's a technology that will never become obsolete. Delbanco, Andrew (2012-03-22). College (p. 29)
- students still come to college not yet fully formed as social beings, and may still be deterred from sheer self-interest toward a life of enlarged sympathy and civic responsibility. Delbanco, Andrew (2012-03-22). College (p. 44).
- "getting to know," in Matthew Arnold's much-quoted phrase, "the best which has been thought and said in the world" is helpful to that pursuit. Delbanco, Andrew (2012-03-22). College (p. 33). Princeton University Press. Kindle Edition. Arnold makes clear by the (seldom quoted) phrase with which he completes his point: "and through this knowledge, turning a stream of fresh and free thought upon our stock notions and habits." 40 In other words, knowledge of the past helps us to think critically about the present

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