Cornell College

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From President Jonathan Brand

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This is a special issue of the White Papers Series featuring Jonathan Brand's chapter in the new book "Making College Better: Views from the Top" (Joseph L. DeVitis, editor. Peter Lang Inc., International Academic Publishers, 2018). President Brand welcomes comments or observations at 319.895.4324 or jbrand@cornellcollege.edu

Foundational Truths About Higher Education

Introduction

An education should prepare graduates for a democratic society. It should teach them how to lead enriching lives. And, of course, a college education should help students to achieve career success, especially obvious following the 2008 recession. Yet, there is no widespread agreement on what that preparation should include or how colleges and universities will know when their students "get there."

At the same time that they face external criticism, many colleges and universities confront nearly insurmountable financial pressures. For multiple years now, demographic patterns in the United States have presented a challenge not only to small residential liberal arts colleges but to all of higher education. There are fewer traditional students available to attend college, and, as a result, there is fierce competition for them. Colleges continue to close each year, and many others fear for their future.

The current political push for workforce development and a proposed over-simplified collegiate rating system[1] that focuses on degree completion, job acquisition, and starting salary have also put these institutions in a defensive and awkward position. The last decade has been marked by dramatic scrutiny of higher education institutions, not only by government officials[2] but also by the media that seem to exacerbate the issues. As one example, an increasing number of print and online articles in national and international *fora*, and several articles in leading news venues have placed student loan debt within the context of the long-term value of a college education.[3] Put another way, people are strongly questioning the worth of college, especially in relation to its perceived cost.

In response, colleges and universities are spending significantly more time and energy trying to measure and communicate the quality of their students'

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experiences. But, significant tensions have hindered the progress. For example, students and their parents may seek one outcome from a college education, while colleges and universities may believe that students need something else. Higher education institutions have different histories and missions. They are thus fragmented in their responses to families. Many colleges and universities struggle to find a balance between a broad liberal arts education and a more narrowly focused professional one. Finally, employers, for their part, have expectations in terms of preparedness for their new hires, and they presume that colleges and universities will automatically meet them.

In the aggregate, the environmental factors and these points of contact create the perfect storm for colleges and universities within this highly charged climate. Wealthier institutions can withstand the criticism better; under-resourced ones struggle and even fail. Such obstacles also provide an opportunity for improvement, no doubt, neither obvious nor easy, but helpful all the same.

There is, thus, a particular urgency for colleges and universities to present a cogent case for the education they offer—to measure student learning, student success, and the career benefits of a liberal education.[4] And, it's a good story. After all, even if unemployment persists and wages stagnate, employment remains highest among college graduates. What better reason to attend and graduate?

In this essay, I argue that colleges and universities must dig deeper into learning goals in order to: (1) bridge the perceived gap between a liberal education and professional preparation; (2) graduate students with the skills employers covet; (3) ease the temporal disconnect between a dynamic external environment and the pace of institutional change; and (4) make clearer the value of higher education for students, their parents, and employers. The aim of this essay, thus, is to suggest a set of global, foundational learning goals that would prepare future generations of students. Further, a college education would be uniformly recognized as invaluable.

The Disconnect Between Higher Education and Families

Imagine Alex and Angelica, two "average" public high school seniors preparing for college. They communicate differently than their predecessors. They have always known cellphones and the Internet. They spend, on average, two to three hours per day in their various media/communications activities such as texting and social media.[5] They are comfortable communicating their ideas in 140 characters or fewer.

There has been more and more pressure on new generations of students to do everything. Alex and Angelica both run cross country and participate in band and choir. They are members of the debate team. Alex works at the local supermarket and Angelica at the pizza parlor. Together, they do community service two Saturdays each month through a local organization. And, of course, they have their homework. In addition, in their high school, they have been tested—and tested more than previous generations. Alex and Angelica prefer to do their research online, finding the specific information that they need to support their ideas. On average, they have about 1 hour of homework each day, including weekends.[6] That must be all that they need to do because Alex and Angelica are both near the top of their class. Their parents dismiss the issue of grade inflation; Alex's and Angelica's good grades are all that matter. When asked, Alex and Angelica state that business is the major that most interests them, consistent with the national trend.[7]

Alex and Angelica have also been raised with significant financial pressures surrounding their college choices, especially in light of the Great Recession in 2008. The recession was hard on their parents who have already endured decades of wage stagnation. Alex and Angelica's parents know that tuition, until recently, has risen at a rate that eclipses a number of other sectors, and feel strongly that college for their children has to be affordable.

The fact of the matter is that, even though college graduates, on average, have higher rates of employment than noncollege graduates and out-earn them over a lifetime, they also believe that college students nationwide struggle to find gainful employment. Alex and Angelica's parents also believe that many graduate with significant debt that limits their post-graduate options. As a result, debt is out of the question for Alex and Angelica because it only limits what they can do after college, and they must graduate in four years.

Alex and Angelica's parents are interested, above all else, in ensuring that their children are gainfully employed after college and have the ability to live independently.[8] For them, employment is the primary measure of a successful college education and, in turn, of a successful college. College is about job preparation and the most direct path to it. Like many parents, Alex and Angelica's want a guarantee that Alex and Angelica will be employable the moment they graduate from college, but they can't articulate specifically what those skills are that lead to employment. That is why, in their eyes, engineering or business is the perfect major because they know that many employers seek graduates with those degrees.[9] Particularly in a tougher economy, Alex and Angelica's parents are looking for the value-added aspect of a college education. They rightly ask, "Can my child get a job straight out of college, especially when I believe that I will have to pay so much for my child to get that education?" It goes without saying that Alex and Angelica need to go to the college with the best reputation at the best price and whose graduates get the best jobs; the reputation of a school is important insofar as a college's reputation increases its perceived value.

The Divide Within Higher Education

Though there is widespread belief that higher education needs to take measuring itself more seriously, the variation in assessment approaches fosters great disagreement about the utility of each.[10]

There remains a growing gulf between the wealthiest, most prestigious institutions and every other college nationally. The former schools have the financial luxury of not worrying about their existence and continue to secure a larger portion of the student pie. And, these same schools are significantly less interested in measuring student learning: "For almost every category of assessment activity, the more selective an institution's admission standards, the less likely it is to employ various assessment approaches or use the results."[11] After all, these same schools have nothing to gain from these assessments. The value is either hard to establish or the value is self-evident based primarily on reputation. Further down the financial continuum, schools with more limited resources struggle to stay afloat.

In addition, some institutions consider what they do as self-evident *ex post* justifications of what they already think that they do well. Rather, they should honestly reexamine their academic offerings within the context of what is foundational for students and adjust them based on what they actually learn from those measurements.

There is also a profound disconnect between the rate of change in society and that accommodated by institutions of higher learning. No doubt, all schools endeavor to meet the changing expectations of students. However, colleges and universities implement change slowly. They struggle in the face of acute competition and financial pressures to continually make themselves relevant to their "customers" and the world into which they will go after college. This inability to move quickly hinders the capacity of schools to respond to their cultural realities.

If you ask Alex and Angelica's parents about colleges and universities, especially the elite liberal arts colleges, they repeat the cultivated media stance that they should be wary: they believe that higher education institutions provide little value to students, and do so at an excessively **high price**, and allow students to graduate with limited skills,

few employment opportunities, and staggeringly high debt (on which many students default). Further, colleges and universities **resist accountability** and do not measure student learning in ways that are useful to students, their families, and the larger world. They raise tuition annually at **rates faster and exponentially greater than do other services or sectors**. They **clandestinely operate welfare states**, in which they subsidize poorer students by providing aid to them that is funded by wealthier students who pay the full, advertised sticker price for college. Their decision-making processes—rooted in notions of sharing governance with faculty (and students)—are both **inefficient and medieval**, and allow faculty to resist needed changes. **They build palaces for their students simply because they can**—such as luxury residence halls, new comprehensive athletic facilities (with climbing walls), lazy rivers to float down, and well-appointed student centers.

While this hyped stance may sell newspapers and magazines, it's generally pulled out of context, highly anecdotal, and certainly not the full picture. And, these perceptions surely do not speak to the vast majority of colleges and universities in the United States.

The Divide Between The Broad And Focused

A further problem, debated for years, is between a broad-based liberal education in which one studies across many academic disciplines versus a more professional or practical focus in which one studies for one kind of job.[12] Increasingly, over the last few years, colleges and universities have focused more and more on how individuals can apply their abilities to any content and in any context—as compared to the strict transmission of substantive knowledge. It would be folly, however, to think that an education should be all about the instruction of process. Ultimately, employers assume either broad or specific knowledge as the basis for any undertaking. Critical thinking requires a base of **substantive knowledge**. It is hard to imagine being a productive scholar in, say, French literature, without having direct knowledge of French texts. It is hard to imagine assessing the existence of gravitational waves without an understanding of physics.

Alex and Angelica's parents want them to get a practical education—geared toward getting a job. And, it is unpersuasive to them that studying, for example, Russian literature might prepare students in ways that employers want. But, Accounting 101 does. On the other side of the ledger, proponents of the liberal arts claim that Alex and Angelica are likely to have multiple careers over their lives and, thus, need preparation not for one job but for many. They need to evolve with the world, being ready to assume jobs that don't yet exist.

No doubt, if there is any good to emerge from the Great Recession, it is that it has more quickly healed the split between the arts and sciences and professional fields on college campuses. More colleges and universities are adding professional programs within their liberal arts curricula. But under the current scheme of learning outcomes, the divide will never fully disappear. One camp sees the importance of an education that prepares students to be leaders in a democratic society. The other believes that the primary outcome of college is job acquisition. These two schools of thought rely on different learning outcomes.

But even the term "learning outcomes" misses the point. It suggests that there is an endpoint to learning—that learning is about checking a box or crossing a finish line. Done and moving on. And it supports the misguided impression that college provides a finished product with degree conferral, which implies that learning is for all intents and purposes over. However, life is never about a finite endpoint. One is always moving past something or on to something else, or addressing something unforeseen. There is no finish line. The orientation toward learning outcomes suggests the mastery of skills that allow people comfortably to arrive somewhere. In reality, though, it is the beginning of their professional lives. It is not an arrival anywhere; it is another start.

Educators question whether they can effectively reconcile the dichotomy that a college education is either a broad exposure to the academic disciplines OR a laser focus on career preparation. Leaders in higher education increasingly recognize that the distinction between the liberal arts and professional fields is an illusion generated by history and the media. I share the belief that the liberal arts as an educational philosophy is preparation for **any** profession. It has always been and still is. The nondiscipline-specific skills advanced by the liberal arts are sought devoutly by employers in **all** fields.[13] Now we can ask the question: how, then, can one argue that a liberal arts education is anything but professional preparation?

The Disconnect Between Higher Education And Employers

On the face of it, numerous published surveys elucidate the abilities as well as the gaps that employers expect from college graduates. Survey results regularly indicate that employers wish to hire good communicators and find, in fact, the opposite. College graduates simply cannot write at the level expected. They also don't adequately focus on details, as another example indicates.[14]

A 2013 study by Eduventures found a split between what prospective students seek in a college education, and what employers look for in employees. Students identified three *sine qua non* goals of college: (1) in-depth knowledge and expertise in a major; (2) pursuit of personally fulfilling career prospects; and (3) skills to help enter into a specific career path. Career preparation is clearly on their minds. Meanwhile, the top three skills that employers seek are: (1) the ability to work in a team structure; (2) the ability to communicate verbally with people in and out of an organization; and (3) the ability to make decisions and solve problems. In fact, the study indicated that, "only two of the traits employers look for are in the top ten goals students want to achieve." And colleges are in the middle of these disjunctions as they try to meet the needs of their students as well as of those whose responsibility it is to hire them.

Reports, including one undertaken by PayScale/Future Workplace, tell a relatively similar story. Gaps exist in student preparedness in relation to the well-established learning outcomes affirmed, for example, by the Association of American Colleges & Universities (AAC&U).[15] Colleges and universities teach critical thinking; hiring managers still emphatically state that that skill eludes college graduates. In their opinion, it is actually the largest gap in student abilities. Attention to detail matters in every endeavor, including college. But students aren't gaining that skill either according to employers. Communication is central to a college education but is a shortcoming routinely noted.

From the perspective of colleges and universities, it would be easy to become defensive in the face of these claims. However, they contain a measure of truth regarding higher education as a sector that requires serious attention. For example, one study stated that college students don't make significant progress in developing their critical thinking skills over four years of college.[16] At some institutions, they do not make adequate progress in their writing. And, what about problem-solving and decision-making skills? Though more schools are trying to provide opportunities for students to hone these skills, they still remain highly theoretical.

Nonetheless, colleges and universities, for their part, provide data and anecdotal reports on all the ways they ready students for their futures. These data are subsequently used at both ends of the college pipeline as evidence to employers and prospective students alike that higher education institutions are indispensable. A dizzying array of third-party rankings, ratings, and scorecards insert another layer of information that either supports or refutes them.[17]

From the practitioners' perspective, it's always about the employer's needs because college is just a passage into the more permanent period called real life, including employment. But, as we know only too well, college is not an end after all. It is both a beginning and a means to an end. The purpose of higher education is to educate future leaders and community citizens in a pluralistic democracy. Students should learn how to lead enriched lives, grounded in themselves such that they can develop meaningful relationships and give full expression to their personal interests. They must be open to discover new experiences. And, such learning is near impossible to measure.

The Corner Office

Hard as it is to do, responsive and courageous are the terms I would use to characterize how colleges and universities should approach measuring learning. Assessing learning has value, and students, families, regulators, accreditors, alumni, and governmental officials either require it or, at a minimum, expect it.

One answer to the debate about appropriate student learning goals lies with The Corner Office, a weekly New York Times column that provides an opportunity to listen directly to employers across multiple sectors. These employers discuss their leadership philosophies, lessons they have learned in their professional careers, as well as the skills and attributes that they value in employees and what they look for when interviewing candidates. A total of 100 columns between August 21, 2014, and July 8, 2016, was analyzed in order to determine whether a consensus existed. Not surprisingly, CEOs interviewed over the last two years were aligned; these CEOs consistently mentioned eighteen separate skills and abilities they consider significant, seven of which emerged in particular (Figure 1).[18]

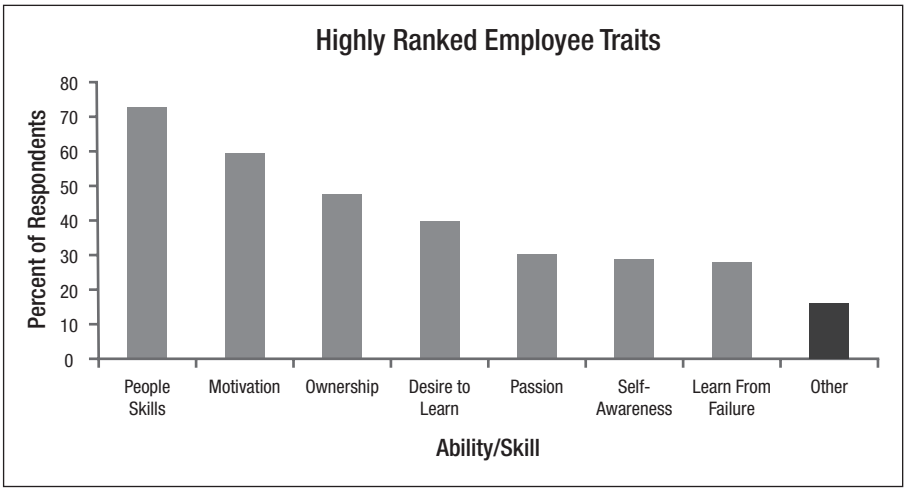

Figure 1. Results of survey of 100 "Corner Office" interviews. The most common responses may be assigned to three general "trait classes." The category labeled "other" includes a variety of skills that were mentioned by 3% to 26% of respondents; the average value is 16%. Additional information is presented in Appendix B.

Those attributes identified through The Corner Office are not precisely what students, on average, value today, what schools are necessarily teaching, or what anyone is necessarily measuring as goals. Employers interviewed in The Corner Office believe that college graduates/employees must know themselves well and know how to apply themselves to larger efforts through a team. Specifically, the information gathered from these CEO interviews would suggest that employers assume a basic intelligence and a wish to learn that manifest themselves in three "trait classes"— teamwork/collaboration represented by people skills (the first bar in Figure 1), high motivation (the second, third and fourth bars), and considerable self-awareness (the fifth, sixth, and seventh bars).

Like many American high school students, our hypothetical prospective college students Alex and Angelica "recognize that it is most important for recent graduates to be proficient in skills and knowledge that cuts across

majors, including critical thinking skills, the ability to apply knowledge in real-world settings, written and oral communication skills, teamwork skills, and ethical decision-making."[19] Notice, though, that the term, critical thinking, *per se*, appears **nowhere** among the most central traits in The Corner Office interviews.[20] It is not that these employers don't value critical thinking. Rather, it is that they are identifying capabilities that, together, **undergird** it. They offer skills that are embedded in critical thinking.

Thus, the answer may lie in the question: what are the skills or appreciations that are even anterior to capabilities like critical thinking, analysis, or teamwork? For example, would it be important for students to learn, above all else and in *all* instances, that they may not know all that they think they know on a topic or that what they know is incomplete? Can students then be convinced otherwise or be receptive to learning what they don't know? There is value in learning how to give and take—to disabuse others and to be capable, in turn, of being convinced otherwise with new evidence and facts. Might these skills be essential to a lifetime of personal and professional success in any undertaking?

I do it. You do it. At some point, we all do it. We are guilty of enforcing our own ideas by selectively curating our own information. In ways that merely conform to our beliefs, we miss the opportunity to take a broader view or learn from others. Further, students who are not receptive to the possibility that they may not know everything, or that what they know may either be wrong or incomplete, will not impress their future employers with critical thinking skills or the ability to work on a team. It is vital that students "come to appreciate context, trade-offs and data ... master how to recognize complexity, to argue effectively for their positions and to reconsider and challenge their own beliefs ... [or learn that] actions inevitably have multiple implications and that many decisions involve not simply choosing between "good" or "bad" but evaluating a set of consequences and uncertainties, both desired and undesired."[21]

Foundational Skills

The answer rests in *going deeper* in terms of essential learning goals. That is, there exists an even more fundamental set of learning goals, including capabilities, that could provide the bedrock of learning, an optimal focus for a college. Without attaining certain basic skills, these larger learning goals as delineated, for example, by the AAC&U, are simply not possible to master. Thus, what I would like to suggest is a structure for foundational goals that could bridge the divide between the liberal arts and preprofessional education and prepare students to thrive in any number of settings.

1. **Recognition of One's Inability to Know Everything**. The AAC&U defines critical thinking as "a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion."[22] There appears to be widespread support among colleges/universities, accrediting bodies, the U.S. Department of Education, and employers for the notion that critical thinking is a vital learning goal. In fact, increasingly there are claims that people today confuse opinions with facts or reach opinions that are not rooted in established evidence.[23] Professors today increasingly report that more students cherry-pick their information from the Internet to support the outcomes or conclusions that they seek. The sheer accessibility of information leads many to think that they know more than they do. In cherry-picking information, students might ignore existing evidence that invalidates the conclusions that they have reached. Yet, students can't experience a critical thinking process without first knowing that they don't know everything. Students must question observations, assumptions, values, and opinions. Failing to grapple with contrary evidence entirely negates critical thinking.

   By nature, individuals, not just students, embrace their ideas. That can make it difficult to accommodate the ideas of **others**. Thus, colleges and universities cannot hope to eliminate this practice in one class or two or

even through an academic major. It is far too engrained for simple retraining. It takes **multiple** years and **multiple** experiences in **multiple** settings in order for individuals to appreciate and act on the reality that one's understanding is limited to what one knows and may not be as complete as one might think. It takes an act of breathtaking humility to undergo this process.

At bottom, colleges and universities would do well to focus on helping students learn that **they may not know everything** or that **what they know may be incomplete or inaccurate**.[24] The trend away from facts exacerbated by the Internet's cheap access to information, both valuable and unreliable, presents a major threat to the academic enterprise and the work that graduates will undertake after college. Maintaining an open mind is essential as a preface to critical thinking. In so doing, students should realize that they need others who can offer additional and/or more accurate perspectives.

2. **Grit**. The significance of grit has been in the public eye under several names: resilience, perseverance, resolve, follow-through, and stick-to-it-iveness. At one level, it might seem obvious that persisting through challenges is critical to success, particularly because things rarely go as one expects. Such claims square nicely with past experiences that many of us have had in overcoming obstacles.[25] One countervailing body of evidence suggests that grit is overrated relative to intelligence;[26] however, it must have value if a student is to make the most of his or her intelligence.[27] The response falls to higher education to encourage situations in which students are required to persevere—and to learn how to persevere wisely.

3. **Ethical decision-making**. Ethics is consistently listed as a *sine qua non* goal of student learning and thus noted by the AAC&U. The value of learning how to make principled decisions is the moral center of the world of higher education. It is the very germ of our existence, and cannot be overestimated in its ubiquity as the substrate for one's life. Students need guidance in learning how to make "good" decisions—appreciating how decisions might impact others or the larger social good. Simply, right and wise choices assume a black-and-white world with clear correct and wrong answers. However, education forces us to see the gray and to make hard decisions that are neither right nor wrong in some immutable way. What we really want students to gain over time is wisdom. Ethical choices spread democratically through higher education in every discipline, bar none.

4. **Communication**. This is a widely accepted learning goal, whether it be in written, oral, or some other form. However, communication presumes several essential skills that make it effective. For example, communication requires a committed and honest **ability to listen**. It requires individuals **to ask effective questions**, which indicates an ability to identify assumptions, biases, misinformation, and omissions.[28]

   Further, it is often the case in the work setting that members are not expected to think only of their ideas but also are actually expected to develop the ideas of others then and explain, refine, and/or defend them. Therefore, there is value in teaching students **how to develop, modify, and refute other people's ideas**. Finally, effective communication is compromised if students have not learned.

   Open and respectful conversation is particularly central to high-functioning teams. Without it, a group cannot expect to arrive at their best results. The current generation of students believes strongly in an environment that is conducive to everyone.[29] They are redefining courtesy and diplomacy. In so doing, they are struggling to find a civil way to discuss incredibly difficult topics. Students need to be capable of hearing someone else's position, which may differ from their own, and wrestling diplomatically with it. They need to challenge and be challenged, all with respect and maturity. Thus, learning how to hear someone out and even advance her ideas is a particularly essential learning goal at this time.

5. **Teamwork**. Colleges and universities often identify teamwork as a vital learning goal. But, many schools hope that one way or another students will get the importance of teamwork by simply offering them opportunities

to work with others. That is not adequate. Students need guidance in learning **how to choose a team**, **how to contribute to a team**, **and/or how not to contribute to a team**. High-functioning teams have members who serve different purposes (as a function of their different strengths), which is why the highest functioning teams are also diverse.[30] Students need to learn those intricacies. They also need to understand how **others** can contribute to a team, not only themselves. Further, high-functioning teams require **effective** communication. They also require strong **interpersonal skills**, which involves **empathy** and **respect**.

6. **Motivation/Drive**. Individuals who are motivated to excel find greater success. They have the ability to resist distractions and to be mindful of the subject undertaken. In brief, motivation is based on, but not limited to, our biology—our predispositions. Motivation is changeable. It can be cultivated, based on the context. Psychologists to corporate executives maintain that motivation is that from which grit springs as well as the will to do or think about most anything. The recognition that individuals are **accountable for their work** also powers motivation.

Colleges now gravitate to several forms of experiential learning, including internships in organizations or businesses, service learning/community service, off-campus study, and academic research, as effective complements to in-class work. In fact, studies establish that "working on a project that took a semester or more to complete, having a job or internships where they applied what they were learning, and being extremely involved in extra-curricular activities" sharpen students' strengths.[31] Thus, students need out-of-class opportunities to apply what they have learned.

Intelligence and Substantive Knowledge

1. Broad intelligence
2. Core knowledge in a discipline and broad knowledge

Foundational Skills (Some of Which Make Critical Thinking/Cognition Possible)

1. Recognition of one's inability to know everything
2. Grit
3. Ethical decision-making
4. Communication
    a. Listening effectively
    b. Asking constructive questions
    c. Learning how to modify, refute, or develop the ideas of others
    d. Acting with respect and civility
5. Teamwork
    a. Choosing a team
    b. Identifying one's productive role on a team
    c. Supporting others on a team
    d. Having strong interpersonal skills
        i. Demonstrating empathy and respect
6. Motivation
    a. Resisting distractions and remaining focused
    b. Willingness to think about or try new things
    c. Recognizing one's accountability
7. Application through experiential learning
    a. Undertaking internships
    b. Participating in service learning/community service
    c. Traveling for off-campus study
    d. Engaging in academic research

Challenges

Of course, if these are the learning priorities, there are many obstacles that could sabotage them. For example, what if students and their families are unable to overcome the financial obstacles? What if they are not interested in these goals—because they either believe that they are trivial or are unwilling to invest the time and effort to achieve them? After all, parents say that their children need to know how to make widgets so that they are employable. Employers, though, say that they need employees who know how to make *better* widgets. In this instance, it won't matter what colleges and universities try to do to improve the educational experience. They are left in the middle of warring goals. And, the learning taxonomy is rendered useless.

Which of these goals can a college realistically teach or students realistically learn? For example, if a professor hopes to teach U.S. history in a manner that will also teach listening skills, can that professor develop class exercises or activities that will accomplish those goals? How would such a class function? Can it be done? What if faculty members are cynical or skeptical about measuring student learning, believing that it either cannot be measured or it just happens serendipitously? Academic freedom generally means that professors have the liberty to teach in the manner that they see fit or that best accommodates their strengths. Further, would shared governance and faculty autonomy impede these goals? Academic departments within colleges and universities tend to operate in decentralized and autonomous ways, which can compromise efforts to unify learning across an institution. These present additional challenges in harmonizing teaching to specific goals.

Would the lack of uniformity across higher education also undermine such work? After all, the United States has over 4000 colleges and universities. Each is different. Each has its own location, geographically and historically, and its own mission and values. It is unrealistic to think that each institution should embrace a universal set of learning goals. Each institution needs to interpret such a taxonomy within its unique context. At the same time, colleges and universities confer degrees and prepare students to excel after college. Employers still expect students to graduate with a foundational set of skills. Thus, schools need to be earnest not only about those areas where students succeed, but also about those where students do not. This honesty means a willingness to make changes in light of ongoing results.

There is also a risk that such learning cannot be accomplished in only four years. For example, data show that students nationwide don't make progress in critical thinking while in college.[32] This result may not be a function of poor teaching in higher education. Many factors contribute to it. It may reflect that learning takes years, or that high schools are not geared to these goals. It would, thus, be necessary to achieve curricular alignment with secondary schools and even graduate schools, and is that even possible? Likewise, at the other end, the question arises as to articulating these skills with those in the professional world and beyond. Over a lifetime, foundational skills are a work in progress.

Appendix A

AAC&U Current Learning Measurements

The Association of American Colleges and Universities (AAC&U) released a commissioned study in 2007 delineating what employers seek from college graduates-employees.[33]

1. The ability to work well in teams—especially with people different from yourself
2. An understanding of science and technology and how these subjects are used in real-world settings
3. The ability to write and speak well
4. The ability to think clearly about complex problems
5. The ability to analyze a problem to develop workable solutions
6. An understanding of global context in which work is now done
7. The ability to be creative and innovative in solving problems
8. The ability to apply knowledge and skills in new settings
9. The ability to understand numbers and statistics
10. A strong sense of ethics and integrity

These skills square nicely with the essential learning goals that the AAC&U articulated through its LEAP Campaign, which groups its goals into the following areas:

1. Knowledge of human cultures and the physical and natural world
2. Intellectual and practical skills, including
    a. Inquiry and analysis
    b. Critical and creative thinking
    c. Written and oral communication
    d. Quantitative literacy
    e. Information literacy
    f. Teamwork and problem solving
3. Personal and social responsibility, including
    a. Civic knowledge and engagement—local and global
    b. Intercultural knowledge and competence
    c. Ethical reasoning and action
    d. Foundations and skills for lifelong learning
4. Integrative and applied learning, including
    a. Synthesis and advanced accomplishment across general and specialized studies

These abilities then need to be honed and "demonstrated through the application of knowledge, skills, and responsibilities to new settings and complex problems."[34] This is what colleges and universities refer to as "experiential learning."

Eight years later, a similar AAC&U study revealed that "[w]hen it comes to the types of skills and knowledge that employers feel are most important to workplace success, large majorities of employers do NOT feel that recent college graduates are well prepared. This is particularly the case for applying knowledge and skills in real-world settings, critical thinking skills, and written and oral communication skills— areas in which fewer than three in ten employers think that recent college graduates are well prepared. Even in the areas of ethical decision-making and working with others in teams, many employers do not give graduates high marks . . ."[35]

Appendix B

Most Commonly Cited Corner Office Learning Goals (Number of Citations by CEOs, *n* = 100)

Teamwork/Communication
People skills/collaboration/community/teamwork (73)—This factor was the most sought after attribute: how do people fit into the existing structure, how do they treat others, how do they build the culture of the company? At its most basic level, how likeable is a particular person? If a person cannot work well with others or does not collaborate well, their contribution will be compromised.

Motivation/Detail-Focused
Motivation (60)—This is a significant trait that employers look for. Why do these candidates want this particular job? What do they intend to achieve in this job? What are their aspirations? Motivating factors, within and without the workplace, allow employers to get a feel for an individual's commitment and determine if they will be an asset to the company.

Ownership (48)—Employers want employees to be invested in the company, to have ownership. If an employee feels a sense of ownership, he or she will care about the company's success and outcomes and tend to work harder.

Growth mindset (40)—Employers want employees who have a growth mindset. They are curious and are not only willing to learn but also wish to learn.

Passion (31)—In the workplace or out of the workplace, passion is a positive trait in an employee. "If they're passionate about something, I know they're going to bring that passion to the workplace" (Sally Smith, 12/13/2014).

Self-Awareness
Self-discernment (29)—Do candidates for employees know themselves? Are they aware of the areas in which they struggle? Are they willing to ask for help? If they are aware of the areas where they have room to grow, they can work to improve them.

Learn from failure (28)—This relates to the idea of a growth mindset. Failure is a learning opportunity. It is common for employers to ask: "what is a mistake you have made and what would you have done differently." A person who recognizes or acknowledges their mistakes and takes ownership will learn from them, not making the same mistake again.

Many of the same findings were confirmed in another recent study, "How Hiring Managers Rate the Skills Gap," conducted by PayScale/Future Workplace.[36] These hiring managers noted that new employees have shortcomings in such areas as:

1. Critical thinking/problem-solving
2. Attention to detail
3. Communication
4. Writing proficiency

Public speaking and interpersonal skills/teamwork also show up in the top eight major gaps.

Notes

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1. In the fall of 2015, the Department of Education abandoned an actual college ranking system in favor of the "College Scorecard"—a "customizable consumer-oriented website" that potentially allows students and their families to compare colleges according to many different metrics. Retrieved from https://collegescorecard.ed.gov/
2. See Sophie Quinton, More States Start Funding Colleges Based on Outcomes, August 15, 2016, in Stateline, Pew Charitable Trusts. Retrieved from http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2016/08/15/more-states-start-funding-colleges-based-on-outcomes?utm_source=Sailthru&utm_medium=email&utm_campaign=Issue%3A%202016-08-16%20 Higher%20Ed%20Education%20Dive%20 Newsletter%20%5Bissue%3A6914%5D&utm_ term=Education%20Dive%3A%20Higher%20Ed
3. See *U.S. News and World Report* 6/26/15 and *Real Clear Policy* 7/3/15, for examples.
4. These outlets include *The Washington Post* (6/19 and 8/30, 2015), *The Financial Times* (8/25/15), *Forbes* (5/18 and 8/17, 2015), and, from Jonathan Brand in *Huffington Post* (6/30/15).
5. https://www.hhs.gov/ash/oah/adolescent-health-topics/americas-adolescents/day.html
6. https://www.hhs.gov/ash/oah/adolescent-health-topics/americas-adolescents/day.html
7. See Aina Katsikas,"Same Grades, Better Performance," *The Atlantic*, January 13, 2015. Retrieved from https://www.theatlantic.com/education/archive/2015/01/same-performance-better-grades/ 384447/
8. See https://www.washingtonpost.com/posteverything/wp/2016/09/02/meet-the-parents-who-wont-let-their-children-study-literature/?utm_term=.c9c8f4d6f12c&wpisrc=nl_most-draw7 &wpmm=1
9. See Susan Adams, "The College Degrees Employers Most Want," *Fortune*, March 29, 2012 at: https://www.forbes.com/sites/susanadams/2012/03/29/college-degrees-employers-most-want/#6e06e1b8661e
10. See Malcom Gladwell, "The Order of Things," in *The New Yorker*, February 14 and 21, 2011.
11. See page 11, George D. Kuh et al., "Knowing What Students Know and Can Do: The Current State of Student Learning Outcomes Assessment in U.S. Colleges and Universities," National Institute for Learning Outcomes Assessment, Urbana: University of Illinois and Indiana University, 2014.
12. See "Re-Educating Rita," *The Economist*, June 23, 2016. Retrieved from http://www.economist.com/news/special-report/21700760-artificial-intelligence-will-have-implications-policymakers-education-welfare-and
13. See *Fortune Magazine*, "What Future Leaders Need to Learn in College," June 2, 2016. Retrieved from http://fortune.com/2016/06/02/what-future-leaders-need-to-learn-in-college/
14. See Scott Jaschik, "Well-Prepared in Their Own Eyes," *Inside Higher Ed*, January 20, 2015, at: https://www.insidehighered.com/news/2015/01/20/study-finds-big-gaps-between-student-and-employer-perceptions
15. See Appendix A for a fuller delineation of the AAC&U learning outcomes, including from its LEAP initiative.
16. See the results related to Critical Thinking from the Fall 2015 ACT College Assessment of Academic Proficiency survey. There, the national average for **first-year students** at all levels of institutions was 59.7 out of a possible score of 80. The national average for **seniors** at all levels of institutions remained unchanged at 59.7.
17. See *U.S. News and World Report, The Princeton Review, The Wall Street Journal,* and *Forbes*.com as examples of different rankings, and the U.S. Department of Education's Scorecard.
18. See Appendix B for more information on the learning goals culled from the interviews in The Corner Office.

19. See page 9, Hart Research Associates, *Optimistic About the Future, But How Well Prepared? College Students' Views on College Learning and Career Success*, commissioned by The Association of American Colleges & Universities, April 29, 2015.
20. Of the 100 CEOs, only 10% of them identified critical thinking as a general construct.
21. Robert, J. Zimmer, "Free Speech Is the Basis of a True Education," *Wall Street Journal*, Eastern edition (New York, N.Y.) August 26, 2016: A.11.
22. See *Assessing Outcomes and Improving Achievement: Tips and Tools for Using Rubrics*, edited by Terrel L. Rhodes. Copyright 2010 by The Association of American Colleges and Universities.
23. The most prominent matters that have involved claims of cherry-picking have been in the scientific arena. See, for example, Ryan Buxton, "Neil deGrasse Tyson's Warning for Politicians Who 'Cherry-Pick' Science," *Huffington Post*, August 28, 2015.
24. See the Socratic Paradox: "I know that I know nothing."
25. See Angela Duckworth, "*Grit: The Power of Passion and Perseverance*," New York: Scribner, 2016.
26. See Jerry Useem, "Is Grit Overrated," *The Atlantic*, June, 2016.
27. And, the additional work that occurs as a result of someone being persistent also has to be work that is done in the right ways (see Claude Steele, *Whistling Vivaldi: How Stereotypes Affect Us and What We Can Do*, New York: W. W. Norton & Company, 2010). Working hard in the "wrong" or counter-productive ways does not achieve anything.
28. See Yoni Appelbaum, "Why America's Business Majors Are in Desperate Need of a Liberal-Arts Education," *The Atlantic*, June 28, 2016.
29. http://www.latimes.com/opinion/op-ed/la-oe-chemerinsky-gillman-free-speech-on-campus-20160331-story.html
30. L. Hong and S. E. Page, Working paper, *Diversity and Optimality* [Loyola University (Chicago) and University of Michigan (Ann Arbor): 2002].
31. See "Real Data Revolution," *Trusteeship*, The Association of Governing Boards of Universities and Colleges, July/August, 2016, p. 15.
32. See again the results related to Critical Thinking from the Fall, 2015 ACT College Assessment of Academic Proficiency survey. There, the national average for **first-year students** at all levels of institutions was 59.7 out of a possible score of 80. The national average for **seniors** at all levels of institutions remained unchanged at 59.7.
33. Peter D. Hart Research Associates, Inc., *How Should Colleges Prepare Students to Succeed in Today's Global Economy?*, commissioned by the Association of American Colleges & Universities, released on January 10, 2007. Retrieved from https://www.aacu.org/sites/default/files/files/LEAP/2007_full_report_leap.pdf
34. From "Essential Learning Outcomes," which is a part of the Association of American Colleges and Universities' LEAP campaign. See https://www.aacu.org/leap/essential-learning-outcomes for more on the LEAP campaign.
35. See page 12, Hart Research Associates, *Falling Short? College Learning and Career Success*, commissioned by the Association of American Colleges and Universities, released on January 20, 2015. Retrieved from https://www.aacu.org/sites/default/files/files/LEAP/2015employerstudentsurvey.pdf. See also Scott Jaschik, "Well-Prepared in Their Own Eyes," *Inside Higher Ed*, January 20, 2015. Retrieved from https://www.insidehighered.com/news/2015/01/20/study-finds-big-gaps-between-student-and-employer-perceptions
36. https://www.payscale.com/data-packages/job-skills