TIAA Institute

Cultivating strategic innovation in higher education

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About this Research

College and university leaders realize they need to be more strategic in cultivating a climate for creativity and innovation in their organizations. Yet the concept of innovation remains nebulous, the theory of disruptive innovation is frequently inappropriately applied, and the conditions that enable a culture of innovation are not well understood.

To help campus leaders address these concerns, the TIAA Institute invited this work by William Tierney and Michael Lanford. They posit that the theory of disruptive innovation is of limited utility for a sector as complex as higher education. Instead, research demonstrates that three conditions are crucial for promoting an organizational climate that fosters strategic innovation: diversity of people, proficiencies and opinions; intrinsic motivation rather than external rewards; and autonomy of the individuals working to effect an institution's mission.

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About the TIAA Institute

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Executive Summary

In an environment undergoing rapid and far-reaching change, colleges and universities need to be more strategic in creating a climate for creativity and innovation in their organizations. We reject the notion that individuals are born creative, as if it is an intrinsic quality for some and absent in others. Instead, our argument is that an organization's leaders can strategically enhance creativity and build a culture of innovation. First, we clarify the often-confusing concept of innovation by defining it alongside related concepts, such as creativity and entrepreneurship. Our definition of innovation is unique in that it not only emphasizes the importance of implementation on an organizational level, but it also details how the perception of novelty within a given field is essential for a product or process to be considered innovative. We suggest that no product or process should be identified as "innovative" until it has had time to undergo a diffusion process and make a discernable impact on a given field.

We also posit that the theory of "disruptive innovation," while intriguing for its encapsulation of today's dynamic business climate, is ultimately of limited utility for a sector as complex as higher education. Instead, research demonstrates that a strategic understanding of innovation can be more effective in spurring needed changes in the higher education landscape, and we outline the necessary conditions to foster it. A culture of creativity will not happen organically. Rather, three dimensions—diversity of people, proficiencies and opinions; intrinsic motivation rather than external rewards; and autonomy of the individuals working at colleges and universities—are crucial to promote and nurture an innovative climate.

Key Takeaways

- *Creativity* refers to inventiveness grounded in field-specific knowledge and expedited by intrinsic motivation.
- *Innovation* pertains to the implementation of a creative product or process and its perceived novelty and impact within a given field once it has undergone diffusion and evaluation by a critical audience.
- Organizations need to consider strategically the conditions that foster creativity and innovation. Positive affective states, a focus on potential gains, and a concentration on distant outcomes each enhance creativity in individuals. Since creativity is dependent upon the development of expertise within a given field, and the ability of an individual to both thoroughly understand and build upon the work of others, it also may be enhanced through social interaction.
- A diverse range of backgrounds, proficiencies, and voices augments the creative impulses of individuals, as well as the innovative potential of a group.
- Higher education institutions need to stimulate the intrinsic motivations of researchers, administrators, instructors, and other employees to create and nurture an innovative work environment. The individual agency associated with self-determination is vital for the cultivation of innovation.
- Researchers need the autonomy to debate concepts and investigate theories without fear of censorship or rebuke for an “incorrect” or an “unproductive” outcome.

Introduction

In a world where scientific breakthroughs and new technological gadgets grab headlines on a variety of media portals and capture the imagination of the general public, every institution wants to be recognized as "innovative." Indeed, *U.S. News & World Report* recently began publishing an annual "most innovative schools" ranking, and *Forbes*, *FastCompany*, and *Fortune* each annually publish rankings of the "most innovative" companies. The potential for long-term economic growth is often linked with a region's innovative activity (Rosenberg, 2004). From fields as diverse as the armed forces (Fastabend & Simpson, 2004) and the legal profession (Mazzone, 2013), the motto "adapt or die" has been embraced as a rallying cry that promotes transformative change through innovation. Many even assert that a culture of innovation is necessary for survival, lest a rival seize a competitive advantage in the marketplace of ideas, making its erstwhile peers obsolete. Consequently, the inevitability of innovative progress is reinforced on a daily basis.

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Higher education has not been immune to this escalating global interest in innovation. As public higher education continues to suffer from decreased state funding, institutions are seeking new ways to increase revenue through entrepreneurial ventures that emphasize innovative research and teaching (Daniels & Spector, 2016; European University Association, 2014; Marginson, 2013; Slaughter & Rhoades, 2004). That entrepreneurial spirit has led to the establishment of education hubs in various countries throughout the world. Ministries of education in these countries hope that university-led research and development might stimulate the next Silicon Valley or Oxbridge (Knight, 2011; Olds, 2007).

Additionally, the theory of disruptive innovation has become omnipresent in discussions about the future of higher education. Critics have long argued that the value of many higher education credentials are no longer worth the cost of tuition, curricula do not match the needs of the workforce, business models that continue to invest in residential education are broken, and contemporary pedagogical methods of instruction are archaic. Hence, in their minds, higher education continues to be an industry ripe for disruption. Whether an insurgent disruption is institutional in nature (e.g., Western Governors University) or driven by the potential for mass education through Massive Open Online Courses (MOOCs) (e.g., Coursera, EdX, and Udacity), these critics contend that traditional colleges and universities face a looming existential threat.

The demands of a knowledge-intensive economy also have induced considerable change in colleges and universities. Classes focusing on innovation and entrepreneurship are taught not only in business schools, but also in education, fine arts, public policy, and numerous other programs as well. Furthermore, an entire academic field—innovation studies—has recently fostered scholarship through academic conferences and journals devoted exclusively to the deeper investigation and understanding of innovation (Fagerberg & Verspagen, 2009; Fagerberg, Fosaas, & Sapprasert, 2012).

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The concept of innovation remains nebulous, "disruptive innovation" is frequently misinterpreted, and conditions enabling a culture of innovation are not well understood.

Nevertheless, the concept of innovation remains nebulous, the theory of disruptive innovation is frequently misinterpreted and inappropriately employed, and the conditions that enable a culture of innovation are not well understood. The purpose of this paper, then, is to address these three concerns and consider how they pertain to higher education.

First, we clarify the concept of innovation by defining it alongside related concepts, such as creativity and entrepreneurship. Our definition of innovation is unique in that it emphasizes not only the importance of implementation on an organizational level, but it also details how the perception of novelty within a given field is essential for a product or process to be considered innovative. Further, no product or process should be identified as "innovative" until it has had time to undergo a diffusion process and make a discernable impact on a given field (Rogers, 2003).

Second, we elucidate the topic of "disruptive innovation" by very briefly explaining its core theoretical precepts. As part of this discussion, we consider the applicability of disruptive innovation as a theoretical lens for understanding current and future trends in higher education. We also discuss three potential ways in which the theory of disruptive innovation might not be applicable to higher education.

Third, we summarize existing empirical research that establishes three dimensions—diversity of people, proficiencies and opinions; intrinsic motivation rather than external rewards; and autonomy of the individuals working at colleges and universities—as crucial for the promotion of an innovative climate. This research is indispensable for administrators, scholars, and other campus leaders interested in promoting creativity and fostering a culture of innovation at their colleges and universities.

I. Clarifying the concepts of creativity and innovation

One is likely to discover an abundance of definitions (Baregheh, Rowley, & Sambrook, 2009) among the thousands of books, articles, and reports concerning innovation. Even though it is difficult to parse various definitions to produce a single definitive explanation, one common distinction that is made between creativity and innovation involves the following:

"Creativity is thinking up new things. Innovation is doing new things."

Is such a distinction sufficient? Or, are the concepts of creativity and innovation more complex than these definitions indicate? We suggest that additional rigor is needed in defining these concepts; otherwise, they are liable to become ambiguous to the point of insignificance. Even worse, the concept of innovation is likely to be dismissed as hollow jargon due to its overuse by publicists and marketing professionals.

So, keeping in mind this first set of definitions, let's consider the following scenario: A child is assigned by her art teacher to draw and color a picture, using a cat as a model. In turn, the child creates a drawing that is somewhat abstract by modifying the cat's position, changing the color of the cat's fur, and providing a thought bubble above the cat in which it is imagining a saucer of milk. Is such a drawing creative or innovative? Or, could it be neither?

We would argue that the drawing is creative in that it reimagines the cat in a personal manner and offers a unique interpretation. This assessment already invalidates the above definition of creativity, which contends that creativity is merely related to the act of "thinking." Instead, the child produced a tangible, creative artifact.

But is the child's drawing innovative? Probably not. One can easily imagine that other people have produced similar drawings (which means it is lacking in *novelty*), and it is unlikely that the child's drawing will deeply influence the future work of a broad spectrum of artists (which means it is lacking in *diffusion* and *impact*).

From this example, we can see that commonly understood differences exist between creativity and innovation—and yet the two concepts still resist simple explanation. Nevertheless, through this example, we have identified three key terms—novelty, diffusion, and impact—which can help formulate definitions of creativity and innovation. To establish more specific definitions for creativity and innovation, it may be helpful to compare the work of two twentieth-century writers who were exceptionally creative—and potentially innovative—individuals.

"Creativity" and "innovation" resist simple explanation.

William Faulkner, recipient of the Nobel Prize for Literature in 1950, received tremendous critical acclaim for his idiosyncratic depictions of life in rural Mississippi. In works such as *The Sound and the Fury* and *As I Lay Dying*, he employed the narrative techniques of stream of consciousness and shifting first-person narration in an attempt to capture the psychological states of his characters. Other prominent twentieth-century authors and filmmakers were deeply influenced by Faulkner, utilizing some of the same narrative techniques to advance their stories. From the perspective of American literature scholarship, then, Faulkner is widely considered to be an innovative author, and his novels are regularly assigned in both high school and college literature classes. And yet, many of his most experimental novels never achieved commercial success during his lifetime.

By contrast, Agatha Christie is the best-selling novelist in history, eclipsed in overall sales only by Shakespeare and the Christian Bible. Her novels, short stories, and plays—each exhibiting a masterful control over characterization and narrative direction—are certainly no less creative than Faulkner's. Nevertheless, Christie never experimented with the sorts of literary devices that would be considered "novel" by literary scholars, and many might

argue that her detective novels were not necessarily groundbreaking, but rather pinnacle achievements within a specific genre (i.e., the detective novel). Thus, from the perspective of literary scholarship, novels like *Murder on the Orient Express* and *Death on the Nile* are seen as more creative than innovative. They are rarely assigned in college literature classes, even though Christie achieved tremendous popular and commercial success during her lifetime.

Novelty

Building on this comparison between Faulkner and Christie, the first characteristic that differentiates innovation from creativity is *novelty*. Joseph Schumpeter (2005) most famously addressed this defining characteristic of innovation in a 1932 article entitled "Development." Schumpeter's understanding of novelty asserts that both time and hindsight are necessary to determine the difference between a novel product or process and a truly innovative one. We agree, only adding the qualification that novelty is also dependent upon the view from the *field* in which novelty is being assessed. A group of literary scholars who value experimentation in the use of language and psychological states are predisposed to view Faulkner as an innovative author and Christie as a creative one. However, a group of mystery novel aficionados might have a different perspective, asserting that the bold plot devices in *And Then There Were None* (in which every major character dies) and *Murder on the Orient Express* (in which nearly every major character is involved in a single murder) have influenced subsequent literary works, theatre productions, and screenplays. Thus, they might view Christie as the more innovative of the two authors.

What differentiates innovation from creativity?

1. implementation
2. diffusion and evaluation
3. novelty and impact

Implementation

A second important concept that distinguishes innovation from creativity is *implementation*. Although Christie and Faulkner were both successful at implementing their ideas, a number of other artistic works could have been influential—and innovative—had they been fully realized and undergone a process of diffusion. One such example is Orson Welles' unfinished film, *The Other Side of the Wind*. Shot over six years during the 1970s, *The Other Side of the Wind* anticipated the mockumentary style that would later be popularized by "innovative" films such as *Take the Money and Run* and *This Is Spinal Tap*.

Implementation is particularly relevant to an organizational understanding of innovation. Without an implementation stage, an organization cannot give a creative idea the opportunity to undergo *diffusion* and *impact* the industry in which it might operate or be subject to evaluation. Whereas *novelty* is subject to the assessment of external forces (Wang & Ahmed, 2004), the process of *implementation* requires internal evaluation by an organization (Crossan & Apaydin, 2010). Typically, an innovative organization is also creative. However, one organization may recognize another organization's innovative product or process and implement it in a more effective fashion. In 1981, for example, Microsoft purchased the

DOS operating system from Seattle Computer Products. After making a few modifications, Microsoft then convinced IBM to use DOS on their new line of 16-bit personal computers. Since Microsoft retained the rights to sell DOS to other software companies interested in writing software for the new IBM PCs, it not only became known as a company that specialized in software innovation, but it rapidly achieved market dominance by the mid-1980s.

Definitions of creativity, innovation, and entrepreneurship

Having discussed the basic differences between creativity and innovation, we now offer definitions that capture the complexity of the two concepts. *Creativity refers to inventiveness grounded in field-specific knowledge and expedited by motivation*. *Innovation pertains to the implementation of a creative product or process and its perceived novelty and impact within a given field once it has undergone diffusion and evaluation by a critical audience.* While creativity is a necessary condition for innovative thinking, not all creative individuals or organizations have been innovative.

Creativity is a necessary condition for innovative thinking, **but not all creative individuals or organizations have been innovative.**

A third concept, entrepreneurship, follows from these definitions. In business literature, innovation is often defined as an "original and marketable idea." Accordingly, when definitions of innovation are transferred from the business world to higher education, they are conflated with entrepreneurship. For our purposes, entrepreneurship is distinguished from innovation by the nature of its goal. Innovation in higher education can encompass a broad variety of product- or process-oriented activities with a diverse set of goals, such as social influence, cultural impact, or financial gain. On the contrary, entrepreneurship has, as its primary end, the accumulation of wealth through new or existing ideas. As such, an entrepreneur is primarily focused on the marketization of an innovation. Based on our previous discussion, Faulkner would likely not be considered an entrepreneurial author. However, Christie's financial success is certainly entrepreneurial in nature. Entrepreneurs do not necessarily have to be innovative, but they do have to focus on business goals, management, and financial imperatives when considering the potential impact of an innovation (in particular) or their product (in general).

Three implications of these definitions

One implication of our perspective is that organizations need to consider strategically the conditions that foster creativity and innovation. Creativity is often associated with individual artistic endeavor, especially in dramatic portrayals of tortured artists working in solitude. Like many stereotypes, though, the image of the "starving artist" endowed with transcendent, perhaps even prophetic, creative powers that require distance from society is more mythology than fact. Additionally, no research supports the misguided belief advocated by many of today's companies, such as Amazon (Kantor & Streitfeld, 2015), that conflict brings about innovation.

Researchers have discovered that positive affective states (Amabile et al., 2005; Fong, 2006), a focus on potential gains**.** (Friedman & Forster, 2001; Lam & Chiu, 2002), and a concentration on distant outcomes (Okhuysen, Galinsky, & Uptigrove, 2003; Forster, Friedman, & Liberman, 2004) each enhance creativity in individuals. In other words, people working within an organization need to feel excited about the work they undertake and believe that their work has meaning, even if diffusion and impact are many years down the road. When job satisfaction is high, the creative abilities of individuals are maximized. Since creativity is dependent upon the development of expertise within a given field, and the ability of an individual to both thoroughly understand and build upon the work of others, it also may be enhanced through social interaction. Artists and inventors may require occasional solitude to concentrate on cognitive tasks that are especially taxing; nevertheless, creative individuals need to exchange ideas and receive feedback from similarly accomplished peers so that they can consider different perspectives, understand the limitations of their own work, and transcend existing boundaries. For years, the fine and performing arts programs within colleges and universities have stimulated creative work through seminars, exhibitions and juries that socialize artists in precisely this manner (Amabile et al., 1996).

A second implication of our perspective is that the temporal conditions surrounding the creation and diffusion of an innovation must be strategically considered (Sartorius & Zundel, 2005). We have previously established that the connection between time and innovation can be considered in one of three ways: 1) the rate of development; 2) the moment in which an innovation is unveiled to the public; and 3) the rate of adoption or acceptance by a given participant base (Tierney & Lanford, 2016a). These three stages provide a useful framework for considering the viability of an innovative idea, the resources necessary to realize the development of an innovation, and the likelihood of an innovation's adoption or acceptance by targeted audiences.

To nurture an innovative climate in colleges and universities, **a certain degree of autonomy from external evaluative measures is necessary.**

A third implication of our perspective on innovation is that an innovative college or university needs to strategically create its own measures for assessment and not be overly concerned about outside evaluation that lacks institutional relevance. In fact, one trend that threatens to inhibit innovation in higher education is the excessive prevalence of external evaluative measures. The current obsession with "world-class universities" and their associated ranking systems is but one example. Although we have previously argued that rankings serve a useful purpose as an informational tool (Tierney & Lanford, 2016b), we also believe they have accrued too much significance in the decision-making processes of higher education institutions. To nurture an innovative climate in colleges and universities, we maintain that a certain degree of autonomy from external evaluative measures is necessary, as we explore in greater detail later in this document.

II. Disruptive innovation: prophetic vision or belabored buzzword?

In 1942, Schumpeter (2003) extended his ideas from "Development" by declaring that innovation could initiate a "process of creative destruction" (p. 83). According to Schumpeter, markets for new technologies (like oil and steel) had the potential to transfigure economic sectors and potentially cause social upheaval. These revolutions could then conceivably result in monopolies from which successful innovators could establish market dominance and benefit from extraordinary profit margins. As evidenced by the fiery rhetoric with which he occasionally conveyed his ideas, Schumpeter believed that institutions needed to focus on innovation for competitive survival (Dodgson & Gann, 2010).

The theory of disruptive innovation, first developed by Harvard business professor Clayton Christensen (1997), has a similar view of the relationship between innovation and the business sector, offering a cautionary tale to incumbent businesses dependent on legacy technologies. It has also had a profound influence on business scholarship and contemporary discourse concerning the intersection of industry and technology.

According to Christensen, a disruptive innovation initially serves the bottom of a given market and has four distinguishing characteristics from its competitors: 1) simplicity, 2) affordability, 3) convenience, and 4) the capacity to offer a product or service to individuals who were previously excluded due to exorbitant costs or specialized skill requirements. Initially, a disruptive innovation is generally inferior to incumbent products and requires continuous upgrades. After a certain period of time, however, a disruptive innovation starts to be a viable option, especially once the cost becomes attractive and the convenience is apparent. Eventually, the mature version of the disruptive innovation emerges as a new market leader, ultimately displacing companies focused on sustainable innovations.

The prophetic rhetoric surrounding disruptive innovation has caused anxiety among many in higher education who worry that universities will soon join the ranks of Borders bookstores and the VHS cassette. A number of books, media outlets, and other commentators have proclaimed that higher education is destined for disruption by online education providers, MOOCs, and other technological breakthroughs that promise a simpler, cheaper, and more convenient alternative to the acquisition of much-needed degrees and credentials (Christensen & Eyring, 2011; Christensen, Horn, Caldera, & Soares, 2011; Craig, 2015; Hixon, 2014; McCluskey & Winter, 2012). These developments would notionally please both "student-consumers" (who need credentials for the job market) and governments (who are increasingly defunding higher education even while they are demanding a more skilled workforce). Even Christensen is on record as arguing that "higher education is just on the edge of the crevasse" (Nisen, 2013).

Some say higher education is destined for disruption by online education providers and technological breakthroughs promising a simpler, cheaper, and more convenient alternative to obtaining degrees and credentials.

Indeed, by the second decade of the twenty-first century, online learning has started to follow the trajectory of other disruptive innovations. Just as computers became ubiquitous through improvements in processor manufacturing, software development, and a better understanding of how customers interact with technology, online learning is underscoring how a technology can grow and quickly adapt. Working adults are being joined by more traditional postsecondary students in online classes. Based on their definitive survey research, Allen and Seaman (2013) estimate that from 2002 to 2011 online enrollment jumped from approximately 10% to 32% of all enrollment in U.S. degree-granting postsecondary institutions.

The appeal of disruptive innovation as a theory has far exceeded the proof that it is likely to invade the corridors of higher education.

Is the current model of higher education ripe for disruption? Possibly, but critics have started to question the basic precepts of disruptive innovation theory. Lepore (2014), for instance, has contended that companies focused on sustainable, or incremental, technologies are frequently more resilient and prosperous than proponents of disruptive innovation are willing to concede. Recent research by King and Baatartogtokh (2015) further demonstrates that only seven of the original sample of 77 disruptive innovations first cited by Christensen and Raynor (2003) correspond to the theory. At this point, the appeal of disruptive innovation as a theory has far exceeded the proof that it is likely to invade the corridors of higher education and end college as we know it.

For this reason, it remains important to interrogate the efficacy of disruptive innovation theory for colleges and universities. Four unique features of the higher education sector could stymie the types of disruption often assumed to be on the horizon. First, higher education is a positional market (Hirsch, 1976) in which scarcity is induced by societal competition. Within this competitive field, one person's gain is another's loss; when individuals possess a highly valued positional good, their social status is higher than their peers. In other words, prestige matters—particularly since an individual carries their institutional credential for a lifetime. Naturally, this institutional prestige normally takes a considerable period of time to accrue through endowment funds, impactful research, and alumni. Virtually no one in the business world asks a potential employee where they went to high school. However, research on the hiring practices of eminent banks, consulting firms, and law firms convincingly demonstrates that the name brand of a college degree carries a tremendous amount of weight (Rivera, 2011, 2015).

Four unique features of the higher education sector could stymie the types of disruption often assumed to be on the horizon.

Second, research by Raffaelli (2015) shows that legacy technologies, like the Swiss watch, can thrive as status goods even while potentially disruptive technologies, such as the digital watch, achieve mass production. If Raffaelli's thesis holds true for higher education, institutions that have a certain degree of "status" may remain unaffected by disruptive forces. Meanwhile, "open admissions" institutions that serve a broader segment of the college student population might be impacted.

Another way to consider Raffaelli's work is through the example of the academic publishing industry. From the outside, the business model of academic publishing must seem rather peculiar. After a peer review process that costs virtually nothing for an academic publisher to facilitate, scholars generally hand over their research for free, even if it was subsidized by public money. Later, that same research resides behind a closed retrieval system that costs college and university libraries millions of dollars to access. As a result, some publishers have enjoyed healthy profit margins. A 2013 article in the *Economist* reveals that Elsevier recently had a 38% profit margin on $3.2 billion in revenues, while Springer enjoyed a 36% margin on $1.1 billion in revenues ("Free-for-all," 2013).

Given the turmoil experienced by the newspaper and bookstore industries in today's age of tablets and smartphones, academic publishing would seemingly be a perfect target for disruption. Indeed, some in academia have called for changes to the academic publishing industry, arguing from an ethical perspective that such important research should not reside behind a cost-prohibitive barrier. Theoretically, researchers could conduct the process of peer review through their own academic societies, set up a centralized website, and distribute their vetted research through PDF documents. The Society for Neuroscience has created a new journal called *eNeuro* along those lines, and the Society for Music Theory has been producing *Music Theory Online* for years. The entire process is all reasonably simple, inexpensive, and convenient.

However, researchers are under pressure to publish in venues that have established decades of credibility. Young researchers, especially, cannot place their careers at risk by abjuring an opportunity to publish in a top journal. Further, the incentives for spending time editing, promoting, and disseminating an alternative journal are weak at best. Thus, academic publishing presents one example where disruption of an entrenched system built on prestige and tradition has proven to be challenging.

Academic publishing is one example where disruption of an entrenched system built on prestige and tradition has proven challenging.

The third feature of the higher education sector that could stymie the types of disruption that are often assumed to be on the horizon is that the relationship between higher education and government is different from that of the technology sector. An international perspective is helpful in considering this point. In most countries, the activities of colleges and universities are subject to the oversight of a Ministry of Postsecondary Education, or some similar governmental entity. Student enrollment in higher education is capped at a certain level and based on results of high-stakes examinations. Students who are successful in such exams are allowed to enroll in universities that are heavily subsidized by the government. As such, tuition costs at these state-subsidized institutions are much lower than the tuition costs at private institutions. While it is conceivable that an entrepreneur could develop a niche product to educate the substantial proportion of students who are purposefully kept out of these state-subsidized universities, a number of hurdles exist

relating to accessibility, convenience, and affordability. Student technological literacy, as well as the high-tech infrastructure of a country, may be lacking. Finding a way to offer a privately supported degree that is less expensive than an established public incumbent that can rely on public coffers is challenging. The United States, on the other hand, is an anomaly in that a substantial proportion of its prestigious institutions are private. In the rest of the world, credentials from state-subsidized universities are invariably far more prestigious (and desired by employers) than those from private institutions.

Fourth, colleges and universities are fundamentally different from many businesses in that they serve multiple missions, such as workforce development, research into societal problems, the advancement of disciplinary knowledge, and community service. For this reason, it is important for higher education professionals to question any value system that romanticizes "disruption." The quest to create a simple, affordable, convenient, and accessible path to a degree is a laudable goal—and one we believe is essential for the continued health of higher education and society. Nevertheless, quality—evaluated through the production of intellectually and artistically rigorous work—is also of central importance to the mission of any higher education institution. It is a simple matter to replace a 700-student class that meets in a lecture hall with an online class. Both environments provide a questionable educational experience, where quality is suspect. A well-run seminar, however, that enrolls fewer than 15 students, employs the Socratic Method, and sharpens students' critical thinking abilities through consistent feedback to weekly writing assignments is far more difficult to supplant. Bromidic academic and artistic production should be anathema to those who believe that a university's mission is to raise the level of discourse, educate students, and improve the human condition through innovation.

The drive for disruption must be balanced by **considerations of an institution's stakeholders, history, identity, and perceived strengths.**

The drive for disruption in higher education must be balanced by thorough considerations of an institution's stakeholders, its history, its identity, and its perceived strengths. Christensen's theory of disruptive innovation is a useful prism through which administrators, researchers, and other stakeholders in higher education can potentially gain a deeper understanding of technological advances in today's rapidly changing, globalized environment. However, former students of Christensen have become increasingly dismayed that "[disruptive innovation] is frequently overused. Clearly, the term has sometimes become a cliché among those who don't understand. This is a reality of today's business environment" (Gilbert, 2014). Michelle Weise, a Senior Research Fellow at the Clayton Christensen Institute, has elaborated that 'disruption' is one of the most overused buzzwords in education today:

> There is this tendency for pundits, policy makers and institutional leaders to take any kind of technological advancement, call it a 'disruptive innovation,' cram it into the classroom experience and then hope that somehow efficiencies are going to magically appear. Obviously, it's not that simple.

Finally, Christensen himself has expressed concern about the use of "disruptive innovation" as a tool to "justify whatever anybody—an entrepreneur or a college student—wants to do" (Bennett, 2014).

Likewise, institutions of higher education should be cautious in embracing the mantra of "disruption" as a convenient rationalization for eliminating, transforming or creating academic programs. Therefore, the degree to which crises are being manufactured to fit the preconceived beliefs and value systems of a few influential individuals is a topic worthy of closer examination in higher education. In recent years, boards of trustees have become increasingly activist in demanding the closure of important academic departments, the implementation of online degrees, and the transformation of degree curricula. While such changes may be labeled as "innovative," they are perhaps more accurately described as "impulsive." Such decisions too often fail to consider, for example, how the closure of one academic department can negatively impact the scholarship of an entire college, how a poorly executed online degree program can damage the reputation of the entire university, or how the imposition of a top-down hierarchical structure in a university can drive away talented individuals who cherish autonomy.

Higher education leaders should take care not to use the concept of "disruption" as a convenient rationalization for eliminating, transforming or creating academic programs.

Some changes labeled as "innovative" may be more accurately described as "impulsive."

As stated in the previous section, only the judgment of institutional stakeholders over time can evaluate whether or not such changes are truly innovative. The growing number of academic programs being pre-emptively dismantled under the guise of "disruptive innovation" has not received the same level of scholarly scrutiny as the handful of businesses that actually have been displaced by a disruptive technology. Any individual or organization developing a strategy for handling the potential technologies that could disrupt an institution's student intake or revenue stream also should be mindful of the institution's areas of strength, as well as the impact of cuts on the culture of the organization as a whole (Tierney, 1988).

III. Three vital factors for strategic innovation

If disruptive innovation is not the most optimal theoretical framework from which to promote improvements that could transform the landscape of higher education, then how can strategic innovation foster necessary change and improvements for the long run? What is known about fostering an innovative climate within higher education? Scholarship from the fields of business, innovation studies, management, and psychology point to three factors that almost invariably affect innovation in a positive manner, including diversity, intrinsic motivation, and autonomy.

Research points to three factors that help spark innovation: **diversity, intrinsic motivation, and autonomy.**

Diversity

Research has repeatedly demonstrated that the innovative potential of an organization is unleashed when individuals from a diverse range of backgrounds, proficiencies, and voices are brought together. Feldman (2002), in fact, contends that "innovation, at a fundamental level, is a social process that bridges individuals from different disciplines with different competencies, distinct vocabularies, and unique motives" (p. 48). Unfortunately, conceptualizations of diversity in higher education are often deficient. They tend to take a narrow view of individuals and focus exclusively on inherent characteristics such as ethnicity or gender, and presumptions of like-mindedness based on observable differences. To be sure, research on inherent diversity indicates that companies that actively promote diverse hiring practices have substantial financial returns (Hunt, Layton & Prince, 2014). Companies that are in the top quartile for gender diversity are 15% more likely to have financial returns above the national median. Similarly, companies that are in the top quartile for ethnic diversity are 30% more likely to have financial returns above the national median. Nonetheless, one also must consider *acquired* characteristics in order to fully conceptualize the types of diversity that support innovation.

For example, one important acquired characteristic—especially in today's age of globalization—involves an individual's multicultural experiences. Studies show that multicultural experiences are positively correlated with desirable creative abilities, such as insight learning, remote association, and idea generation (Leung et al., 2008). Other examples of acquired characteristics include the ability to speak multiple languages, and to translate sophisticated concepts from one discipline to another. In recent years, liberal arts education has come under attack for offering courses that are not directly translatable to the marketplace. However, other educational systems (such as those in Hong Kong) have come to realize that the liberal arts provide students with the ability to develop acquired diversity characteristics that are necessary for a contemporary knowledge economy. Therefore, they have initiated comprehensive educational reforms so that students might develop cross-cultural fluency, an interdisciplinary mindset, and critical-thinking skills that can stimulate greater creativity and innovation (Lanford, 2016).

On an organizational level, research by Hewett, Marshall, and Sherbin (2013) has established that companies with high levels of inherent and acquired diversity among leadership and staff are more innovative and more likely to capture new markets. The reasons are manifold: In such environments, leaders more frequently delegate authority, encourage feedback, and allow for multiple perspectives to be heard. Employees, in turn, feel comfortable proposing new concepts, and information about clients and processes is quickly disseminated throughout the organization. For these reasons, such companies are 45% more likely than non-diverse companies to grow market share within a given market within a year. By drawing upon the acquired knowledge and experience that their employees possess, diverse

companies are also 70% more likely than non-diverse companies to capture a new market. In short, an innovative institution is one that remains open to the insights and insider knowledge of individuals who hail from a broad range of life experiences.

Intrinsic motivation

One critical mistake made by many organizations is to exclusively incentivize performance through extrinsic incentives, such as the promise of financial gain or professional advancement. Extrinsic incentives may have some utility in professions where the accumulation of financial wealth or personal accomplishment is a superseding goal. However, they do not generally support the types of meaningful innovation that require sustained cognitive engagement and the tenacity to solve complex problems. When administrators use extrinsic incentives, individuals generally lose interest once a clearly defined objective is met. As a result, progress on an innovative idea stops at a premature stage. As stated by Amabile (1998), extrinsic motivation does not "make employees passionate about their jobs. A cash reward can't magically prompt people to find their work interesting if in their hearts they feel it is dull."

When administrators use extrinsic incentives, individuals generally lose interest once an objective is met. Extrinsic motivation does not make employees passionate about their jobs.

Another problem is that workers will find shortcuts to meet extrinsic, predefined objectives. The field of education has long acknowledged that students who are motivated via extrinsic factors are more likely to cheat on exams or plagiarize papers than those who are motivated intrinsically (Murdock & Anderman, 2006). As evidenced by the recent scandal involving Wells Fargo, people who work in business environments are no different. When Wells Fargo set quotas that were widely perceived as unreasonable, thousands of employees invested their "creative" energies on opening fraudulent deposit and credit card accounts simply to meet extrinsic goals that seemingly had little purpose. If Wells Fargo had found a way to stimulate its employees' intrinsic motivation to work with customers and develop personal relationships, it might have avoided an embarrassing scandal that tarnished the company's reputation and led to the abrupt exit of its chairman and CEO.

In a college or university environment, most creative thinkers do not enter their chosen fields because they hope to make vast sums of money. Instead, they are motivated by a desire to investigate a specific field. They also have an interest in being surrounded by knowledgeable peers who can provide constructive feedback and improve novel ideas. To stimulate an innovative work environment, higher education institutions need to carefully consider the resources that support individual curiosity and intrinsic motivation. Such resources can vary tremendously, depending on the type of institution, the researcher's disciplinary training, the area in which an administrator works, and other factors. However, one important, universal resource is time. Christensen and van Bever (2014) have astutely argued that far too many companies are currently engaged in "efficiency innovations" that reduce costs on a product or a service. These innovations are attractive because they are often easy to conceptualize and provide a quick return on investment.

Society, however, needs "empowering innovations" that grow the economy and improve the overall quality of life for millions of people. One company that developed numerous "empowering innovations" was Xerox PARC. From the 1970s to the 1990s, Xerox PARC was a powerhouse of innovation, developing laser printing technology, graphical interfaces, and many other technologies that powered the personal computing industry. As described by Ness (2015), two factors that enabled the company to be so innovative included "funding" and "concentrated brainpower" (p. 37). Indeed, in his work on the innovation economy, Janeway (2012) has called efficiency the "enemy of innovation" due to its negative impact on the trial and error process so essential for innovative progress. Most important, however, researchers at Xerox PARC were given a considerable period of time to develop their ideas and bring them to market. This temporal dimension is essential for innovation, as "empowering innovations" may take anywhere from five to ten years for development, introduction and diffusion.

Intrinsic motivation is vital for strategic innovation, and is **deeply intertwined with autonomy.**

Autonomy

Colleges and universities need to be particularly careful about institutionalizing deep cultural traits that can thwart creativity and extinguish promising innovations before they have an opportunity to make an impact. Many institutions with proud traditions like to tout "The X University Way," presumably to distinguish themselves from similar institutions. On the surface, such branding strategies are relatively innocuous. However, if these deep cultural traits start to guide every aspect of institutional life, administrators, instructors, and researchers alike may lose their intrinsic motivation to propose and test new ideas. And, as previously discussed, intrinsic motivation is a vital factor for strategic innovation. Psychological research consistently shows that intrinsic motivation is deeply intertwined with autonomy (Fisher, 1978; Ryan, 1982): the loss of autonomy begets the loss of intrinsic motivation, and such losses invariably lead individuals to seek out new working environments.

Excessive evaluation can negatively affect innovation.

Excessive evaluation is another institutional process that can negatively affect innovation (Amabile et al., 1996). Some evaluation procedures are, of course, necessary to align program goals with the institution's mission statement, provide data for continued self-assessment, and ensure quality. Nevertheless, onerous evaluations can consume energy, divert precious resources better allocated to other tasks, and discourage individuals from considering a creative (and potentially innovative) idea that could positively impact the university community. Evaluations that penalize individuals for piloting novel concepts are even worse, as people need the autonomy to debate and implement ideas even if a "negative" outcome results. Albert Einstein famously emphasized the importance of failure to his own work, observing, "that fellow Einstein makes things convenient for himself. Each year he retracts what he wrote the year before" (Ohanian, 2008, p. 253). The process of experimentation and peer review necessary for scientific progress requires a certain amount

of tolerance for error. Hypotheses are regularly proven false, the methodologies employed to investigate a particular problem are often found inadequate, and changing cultural and societal conditions necessitate the continual reevaluation of longstanding theories. Over time, progress occurs because researchers learn from their mistakes. If external evaluations focus too narrowly on short-term results without a broader view of the progress that is being achieved, innovation will be stifled.

One important feature of American higher education that has preserved autonomy for many is the concept of academic freedom. Traditionally, colleges and universities in the United States have recognized that scientists need to challenge conventional wisdom and occasionally advance unpopular theories. Although such work may initially be derided as "impractical" or "whimsical," it also can lead to important scientific breakthroughs that impact society in a meaningful way—such as the mapping of the human genome. Hence, a delicate balance must be maintained. On the one hand, colleges and universities need evaluative measures that maintain institutional focus and provide actionable information. On the other hand, the professional expertise of individuals working in higher education institutions needs to be respected. No institution can be innovative if it is micromanaged in a way that hinders intrinsic motivation and autonomy.

An important American higher education feature that has preserved **autonomy for many is the concept of academic freedom.**

Conclusion

Creativity is not simply an individual trait that some possess and others do not. Furthermore, innovation within an organization is not simply organic, nor something that just "happens." Organizations have the potential to nurture creativity in their members and enable innovative climates. To do so, an organization's leaders need to be strategic.

Action that derives from a crisis mentality—or is driven by the notion that things need to be disrupted—is certainly not optimal. Instead, decision-makers should carefully consider an institution's history, its culture, and its strengths and weaknesses relative to its peers and emerging innovative forces. Rather than adhere to processes that may have worked a generation ago, postsecondary institutions need to foster the conditions that reward intrinsic motivation, autonomy, and diversity—and take into account the temporal conditions that lead to successful organizational change. Such a framework requires internally-derived assessment measures that focus attention on creative inquiry and innovative discovery, not externally-derived measures that promote conformity. Through such deliberate and informed choices, an institution can strategically build a culture that actively supports and nurtures creativity and innovation on the part of its members.

To nurture creativity and enable innovative climates, institutions need to foster the conditions that reward intrinsic motivation, autonomy, and diversity.

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