

# *Putting Creativity and Innovation to Work: Continuing Higher Education's Role in Shifting the Educational Paradigm*

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**W**e hear the refrain again and again, especially recently: The success of the US economy has always been its ability to innovate, create, invent, and commercialize groundbreaking discoveries. Today, we seem to be losing our edge and have begun to suffer an “innovation deficit,” a phrase coined by Secretary of Commerce Gary Locke in his remarks to the President’s Council of Advisors on Science and Technology, January 7, 2010. As Locke further noted:

- Our balance of trade in advanced technology products turned negative in 2002.
- Industries that used to be dominated by American companies are now led by companies in Europe and Asia.
- America has created no net new jobs over the past decade, and median wages have remained flat.

As a society, our appreciation for analytical, predictive, and linear abilities and how to teach them has taken precedence over more creative,

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open-ended, ambiguous, artistic abilities, much to our detriment. As Daniel Pink observed:

Sequential, literal, functional, textual, and analytic [functions are] highly prized by our broader culture. . . [whereas right-hemisphere functions] so often disdained and dismissed—artistry, empathy, taking the long view, pursuing the transcendent—will increasingly determine who soars and who stumbles. (26-7)

The emphasis on quantitative measures like GPA and standardized test scores in college and university admissions supports Pink's assertion.

Leaders from management, education, psychology, and neuroscience generally agree that whatever you call them—right-brain aptitudes, integrative thinking, creative problem solving, 21<sup>st</sup>-century skills—they can be taught. As educators we need to embrace and master new topic areas and new ways of teaching and evaluating learning outcomes.

From the world of neuroscience, Gregory Berns made this key observation:

The efficiency principle [of brain functioning] dictates that the brain will take shortcuts based on what it already knows. . . and because imagination comes from perception, these same categories hobble imagination and make it difficult to think differently. (57)

Executive development experts have begun to identify specific and simple techniques to challenge the human brain to counteract its natural tendencies for pattern recognition.

For example, Rubenstein and Firstenberg propose a number of simple practices to create a "state of chaos" at the beginning of any problem solving process:

When we are in a state of chaos, our perceptions are diffused and divergent, we expand the search in many directions and raise new questions, we break pieces and inspect them, we separate parts, we look from many different plateaus (or vantage points), and see conflicting pictures that do not fit together. (92)

Like Rubenstein and Firstenberg, Roger Martin recommends "embracing the mess" to counteract normal cognitive function, because, as Martin further notes, "the best answers arise from complexity". (41)

From these and other readings we developed a set of dichotomies to describe the emerging paradigm shift needed in education:

<i>New skills, abilities, perceptions</i>	<i>Established conventional view</i>
synthesis	analysis
flexibility	rigidly defined roles
cross-disciplinarity	organization chart focus
openness	protectiveness
risk (failure = OK)	caution (failure = bad)
chaos and ambiguity	predictability
pattern recognition	theories to prove
leaps	incremental steps
diversity	homogeneity
disruption	routine
preparation	preparation

### **HOW MIGHT WE ENCOURAGE AND ACCELERATE THIS SHIFT?**

Re-engineering the entire US educational system in order to foster and enhance necessary creativity and innovation skills is daunting. However, because of its ability to adapt, change, and develop educational programs rapidly in response to social, economic, and workforce trends, the field of continuing higher education should be particularly well suited to making an impact in this area. From this platform, we developed specific research questions to guide our inquiry:

- Are continuing higher education programs in the US offering courses, programs, or activities designed to enhance students' skills and abilities for creativity and innovation beyond the obvious subject areas of art and design?
- If so, what classes and programs are continuing higher education units offering?
- What are the perceptions of continuing higher education leaders on the subject?
- What are some novel and practical ideas for addressing this important and emerging curricular area?

### **WHAT DID WE FIND?**

We began with a review of a broad range of scholarly and more popular literature in the areas of business and design, as well as social science-related writing. Some books focused on broader justifications for the importance of developing creativity and innovation skills among the US workforce. Most also provided practical suggestions and exercises for doing so.

As a major feature of this study, we conducted a web-based survey of continuing higher educators to assess the current state of education designed to enhance general creativity and innovation knowledge and skills. Results are reported here. Finally, we selected a few case studies of unique programs, events, and activities from different types of organizations that could be incorporated in various ways into professional development curricula, in the hope of motivating our colleagues.

### **SURVEY RESULTS**

We distributed a total of 352 e-mail prompts, linked to a brief web survey, to all US based University Professional and Continuing Education Association (UPCEA) member institutions. The e-mail was directed to the institutional representative, only one individual per UPCEA member institution. The web survey collected responses for a two-week period, March 2–16, 2010. The survey included questions about courses, programs, and activities designed, in some way, to enhance and improve the ability of students to be more creative or innovative. We asked respondents to exclude explicitly art and design classes.

We received responses from 163 institutions (including 25 partial responses) for a response rate of 46 percent. Based on demographic information provided, responding institutions were generally representative of region, size, and type of institution within the full population surveyed.

According to the survey, 37 percent of institutions responding currently offer distinct classes principally related to fostering creativity and innovation, and 14 percent of institutions responding plan to offer such classes in the future. Creativity/innovation-related classes tend to fall in the following academic disciplines (more than one response was allowed):

- Management and leadership (62 percent)
- Sustainability (62 percent)
- Education (38 percent)
- Engineering and technology (31 percent)

Creativity/innovation-related classes offered by UPCEA member institutions tended to fall in the following formats:

- Classroom open enrollment (87 percent)
- Online (49 percent)
- Custom (38 percent)
- Other/blended (18 percent)
- Creativity/innovation-related classes tended to be offered as:

- Intensive short courses (77 percent)
- Full-term courses (55 percent)
- One-day classes (36 percent)
- Titles of some of these courses included:
  - Innovation in Organizations
  - Ignite Your Creativity the Artist's Way
  - Entrepreneurship and Innovation
  - Innovation Management
  - Creative Problem-solving
  - Innovation: Creativity and Risk-taking
  - Critical and Creative Thinking
  - Introduction to Engineering Design
  - Innovative Architecture: Green Building Design
  - Managing Organizational Change
  - Discovering Creative Energies
  - Engaging Learners through Inquiry
  - Thinking Creatively
  - Freeing Your Creativity
  - Introduction to Personal Creativity

Despite our request to exclude such programs, some UPCEA member institutions included more traditional arts or writing disciplines:

- Stained Glass
- Jewelry
- Creative Writing
- Art Appreciation
- Writing Fantasy Fiction
- Ceramics
- Creative Writing
- Creative Nonfiction

In addition, respondents provided a couple of examples we might not have expected:

- How the Body Talks
- Capstone in Social Change

One question assessed respondents' awareness of literature in the areas of creativity and innovation by providing a list of book titles and asking respondents to indicate whether they had read the book, knew of the book, or had never seen the title.

The following indicates the percentage of respondents reporting that they had never before seen a particular book title:

- Out of Our Minds* (78 percent)
- The Opposable Mind* (76 percent)
- This Will Change Everything* (75 percent)
- A Whole New Mind* (71 percent)
- Five Minds for the Future* (68 percent)
- Flow* (65 percent)
- The Creative Habit* (65 percent)
- 21<sup>st</sup> Century Skills* (60 percent)
- The Ten Faces of Innovation* (56 percent)
- Change by Design* (53 percent)

We also collected information on attitudes and perceptions of continuing higher education leaders toward the topic of fostering creativity and innovation in the US workforce. The following list indicates the respondents indicating they “agreed” or “strongly agreed” to the following statements:

- Tools to foster creativity and innovation can be taught. (87 percent)
- Anyone can become more creative and innovative. (77 percent)
- Innovation and creativity are key drivers of UC global competitiveness. (71 percent)
- CE units should offer classes and programs that foster innovation and creativity. (71 percent)
- Innovation, R&D, and design cannot be easily outsourced to other countries. (51 percent)
- Offering classes in creativity and innovation would enhance our reputation in the community and on our campus. (45 percent)
- Our campus and community would not value CE classes or programs designed to foster creativity and innovation. (13 percent)
- There is no market for classes on innovation and creativity in my institution’s service area. (10 percent)
- Engineering, design, and art schools should be the main disciplines to teach innovation and creativity. (8 percent)
- Innovation and creativity cannot be taught. (4 percent)

Continuing higher educators see the value and importance of offering an innovation- and creativity-related curriculum, believe such content can be taught, and acknowledge the relationship of this education to workforce

and economic factors. At the present time, however, these survey results show a gap between perceptions about the importance of such a curriculum and continuing higher educators' background knowledge on the topic and their willingness or ability to offer classes in the area.

We asked respondents who indicated their programs did not offer distinct classes designed to enhance creativity and innovation skills to provide descriptions of other ways continuing higher education units are incorporating this content. Representative open-ended responses included:

- "Small-business development center trainings"
- "Entrepreneurship programs with schools of business"
- "Through exercises/ assignments"
- "Activities and projects with 'ill-defined' problems and opportunities to address"
- "Some of our business courses include some components of creativity and innovation."
- "We encourage creativity to be blended into appropriate content."
- "I am hopeful that many of the social sciences and humanities courses encourage innovation, but I am unsure if they do."
- "Much like sustainability, we do not have discrete courses in this area, but we do ask our instructors to integrate aspects of being environmentally responsible and fostering an environment of creativity into their curriculum."
- "We have many art, craft, cooking, and writing programs that surely serve to foster creativity and innovation, though I am not sure that we frame it that way in the context of the course."

The survey also offered the opportunity for respondents to provide other comments. These included:

- "Our faculty generally consider the classes I've listed to be 'light-weight,' but the course evaluations say otherwise. We see lots of 'this course changed my life in radical ways'—not something adult students often say."
- "Faculty need to lead these courses by example, not 'same old' teaching styles."
- "It is an excellent idea that we have not discussed."
- "We start by helping others learn to think out of their comfort zone or 'out of the box.'"

- “We recently completed the creativity survey from the Center for Leadership with the expectation that we could foster more creativity among our staff.”
- “I did not see the word ‘curiosity’ in this. We do offer courses in this area... education primarily.”
- “I think we need to at least test the waters and offer a course in creativity and innovation for CE students; then perhaps a series of courses and then, perhaps, a major or minor.”
- “We offer only academic credit-bearing online classes—no noncredit or CEU classes. Innovation and creativity are important, but they are integrated into classes.”

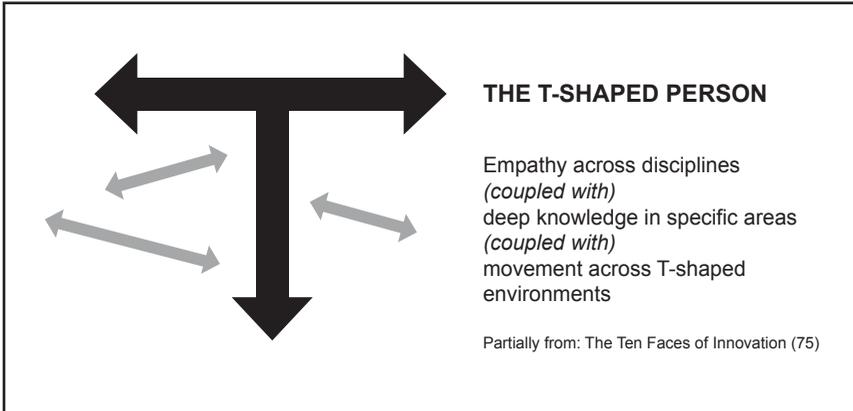
### CASE STUDIES OF NEW APPROACHES

To provide some ideas and inspiration for fellow continuing education leaders, we looked at three specific case studies of novel ways organizations are shifting the educational paradigm away from the more commonly taught left-brain, logical-analytical skills and skills related to innovation and creative problem solving. These case studies span three organizational segments: university, nonprofit, and for-profit.

#### *University segment: UCLA Extension*

The first example focuses on our own efforts at UCLA Extension. The Design Communication Arts Program at UCLA Extension recently developed two courses in the area of innovation: “Integrative Thinking” and “Your Idea as Innovative Solution.” The courses challenge students to combine seemingly disparate elements in new ways, work with opposing ideas, do rapid prototyping through physical projects, and learn the process of “failing often” to move toward innovative solutions. These courses are not targeted only at design students, but are appropriate for students from all disciplines. Within these new courses we attempt to address Roger Martin’s assertion that what is needed are more people ready to take on mysteries rather than design-minded business people or business-minded designers.

Both courses aim to create students as “T-Shaped” people, described by Tom Kelley in *The Ten Faces of Innovation*. This type of person is not overly specialized, but has broad and empathetic skills across disciplines, as well as deep knowledge in specific areas (Breadth + Depth). Martin adds the idea of movement to this model to create an ability to move between deep and broad-based information in order to realize opportunities.



To provide more understanding of how this subject matter can be taught, specific weekly topics for these courses include:

- Creativity vs. Innovation
- Reliability vs. Validity
- And vs. Either/Or
- Developing/finding a common language
- Experimentation and iteration
- Persona and observation
- Broadening the context
- Avoiding paralysis
- Navigating between depth and breadth (T-shape chart)

*For-profit segment: IDEO*

IDEO is an innovation and design firm whose tagline is “Impact Through Design.” IDEO claims a “human-centered, design-based approach” to help organizations in various sectors solve many types of problems well beyond product or visual design recommendations one might expect from a traditional design firm. IDEO defines the basis of its three-pronged approach:

Identify new ways to serve and support people by uncovering their latent needs, behaviors, and desires.

Visualize new directions for companies and brands and design the offerings—products, services, spaces, media, and software—that bring innovation strategy to life.

Focus on the intersection of insight and inspiration, informed by business, technology, and culture.

IDEO has refined a holistic approach to working through the creative process. The company aims to listen, engage, and produce by being present in multiple spaces, including blogs ([ideo.com](http://ideo.com)), books (*The Ten Faces of*

*Innovation; The Art of Innovation*), and products that invite participation, design-thinking, observation, and empathy. Their "Method Cards" (like a regular deck of playing cards with a single creative-thinking exercise on each) are a practical example of how to disrupt students' more normal patterns of perception and linear problem solving.

IDEO has shown that fostering innovation is good business. IDEO's accomplishments include over 1,000 patents issued since 1978, which is highly unusual for a design firm. In addition, the firm claims to have conducted over 3,500 field interviews in 2007, had over 800 internal blog posts this year, accrued about 4,500 Facebook fans of "big conversations and small talk," and amassed over 350 awards since 1991.

### *Nonprofit segment: TED Conference*

TED (Technology, Entertainment, Design) is an organization that believes in the power of ideas to change attitudes, lives and, ultimately, the world. Its tagline is "Spreading Ideas that Matter."

TED began as an annual conference bringing together thought leaders and industry and political luminaries such as Bill Gates, Steve Jobs, Al Gore, and Bill Clinton, to share big ideas across industries and disciplines. TED has evolved into a major clearinghouse that offers presentations by world thinkers from all walks of life, and enables a community of curious people to engage in a robust exchange of ideas.

The conference is built around ideas that lead to meaningful results and is not organized by industry or profession. Major mainstage presenters are limited to 18 minutes and are forbidden from selling a product. The conference has evolved to include three-minute talks delivered online by a large number of TED participants, many of whom are just as powerful as the mainstage presentors.

The annual TED conference is currently designed to promote voices and ideas that are not yet well known, and the TED audience has grown larger through free access to talks on their website ([ted.com](http://ted.com)). In addition, the organization has established a new program called TEDx in which local events, modeled on the annual TED conference, can be created on a local scale. University campuses are excellent venues for TEDx events. The University of Southern California attracted over 1,200 attendees to their TEDx event in February 2009, and over 500,000 people later watched the talks online.

## PRACTICAL NEXT STEPS

From our work here we have observed that to some degree continuing higher educators recognize the need for developing skills and abilities for greater creativity and innovative thinking for a broad range of students beyond the traditional and obvious art and design fields. Most also acknowledge the positive role continuing higher education can play. Early adopters in the field of continuing higher education have developed novel new classes and activities and/or have made the commitment to integrate the subject matter throughout the curriculum. Applying some of the techniques for creative problem solving described in this article, we extrapolated this list of practical next steps:

- Talk about it—raise general awareness and interest in creativity and innovation.
- Develop specific classes.
- Encourage extreme interdisciplinarity, beyond the usual combinations.
- Challenge your faculty to integrate the topic throughout the curriculum.
- Implement best practices in your own organization (e.g., “mistake of the week”).
- Require an art/design/photography class as part of a degree or certificate.
- Take an art/design/photography class yourself.
- Read some of the books featured in this presentation, or even one book.
- Purchase some of the books for your staff and faculty and discuss them.
- Address the topic in your social marketing (blogs, tweets, etc.).
- Engage your boards or advisory committees for ideas on how to foster creativity and innovation.

Despite the good work our colleagues have undertaken so far, the proportion of early adopters appears small. We hope that in some way this article will inspire others to attempt to embrace continuing higher education's important role in developing the next generation—and next-generation skills—among all our student populations. We hope our discipline can begin to live by Ken Robinson's words: “Creativity now is as important in education as literacy and we should treat it with the same status” (TED Conference). 

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