

Undoubtedly, opposites often attract, and maybe it's time to think of business and design as having "good chemistry."



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Creating Innovation Leaders: Why We Need to Blend Business and Design Education

by Sebastian K. Fixson and James M. Read

Innovation is needed. It is the only way to deal with the increasing level of uncertainty that characterizes our world. But innovation is difficult. It is still considered something of an art.

We believe that innovation is a capability that exhibits certain characteristics. It's possible to teach this capability, to help instill these characteristics in people who want to

be innovation leaders, but only if the education combines skills from two separate disciplines with two very different thought worlds, traditions, and rationales.

Today's economy presents a challenging environment for companies and organizations of all kinds. The new normal of weak national economic recovery, increasing global

competition, and environmental challenges creates a business context characterized by increasing uncertainty.¹ This increasing level of uncertainty reduces the lifetime of any current advantage that a company may have. Consider the auto industry.

1. This trend is also visible in the business press. For example, *Harvard Business Review* recently published a special issue on the topic ("Managing Uncertainty," HBR OnPoint Executive Edition, May, 2012).

A generation ago, the North American automobile market knew essentially three competitors—GM, Ford, and Chrysler. In each category, new models were launched every couple of years, with minor facelifts in the years in between. Today, in addition to the three North American car makers, there are at least 11 serious additional competitors selling cars in the US—five Japanese (Toyota, Honda, Nissan, Mazda, and Subaru); two Korean (Hyundai and Kia), and four German (VW, Audi, Mercedes, and BMW)²—and today all of these competitors launch more new vehicles

and at a faster pace than automakers did a generation ago.³ Despite this, the size of the overall US automobile market in 2011, 13 million vehicles, is about the same as it was in 1992.⁴

Many other industries exhibit similar patterns of faster emergence of new technologies, decreasing product lifecycles, and increasing competition, resulting in higher volatility of who leads an industry. For example, leadership in the mobile phone indus-

2. VW and Audi are owned by the same holding company.

3. In 2010, 47 motor vehicle (cars and trucks) manufacturers globally were selling more than 120 brands (International Organization of Motor Vehicle Manufacturers, 2010).

4. Deutsche Bank Research, *dbresearch.com*, January 2012.

try switched from Motorola to Nokia to Research in Motion to Apple in just the course of the past decade. More generally, this trend toward higher volatility in industry leadership has been found across 69 industries over the last several decades.⁵

Increasing uncertainty has two major consequences. First, it makes many traditional strategies less valu-

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able and less reliable, which in turn suggests the need to develop new strategies and new ways of doing things. Second, high levels of uncertainty also suggest that any newly created strategy will not last long either, which puts a premium on the ability to develop and create new ways of doing things. In other words, the capability to identify, shape, and exploit new opportunities for new products, new services, and new business models is becoming critical. In other words, we need to support the ability to innovate!

5. See M. Reeves and M.S. Deimler, "Strategies for Winning in the Current and Post-Recession Environment," *Strategy & Leadership*, vol. 37, no. 6 (2009), pp. 10-17.

Recent data and intellectual discussions support this assessment. For example, at the company level, recent surveys suggest that many CEOs now regard innovation among the top three drivers of their companies' future growth.⁶ We already live in a world in which more and more routine activities threaten to become uncompetitive in high-cost regions

due to automation and outsourcing. To remain competitive, the best response to this threat is to improve the creative portion of the contribution.⁷ In summary, innovation is becoming increasingly important

for the competitiveness of firms, individuals, regions, and even countries.

At the same time, achieving this innovation continues to be difficult. In fact, even as they acknowledge the importance of innovation, many CEOs are dissatisfied with the actual innovation performance of their organizations. For example, only 55 percent of

6. See J. Barsh, M.M. Capozzi, and J. Davidson, "Leadership and Innovation," *McKinsey Quarterly*, January 2008, pp. 37-47; and J.P. Andrew, J. Manget, et al., "Innovation 2010: A Return to Prominence —and the Emergence of a New World Order" (Boston, MA: The Boston Consulting Group, 2010).

7. This insight extends from companies to individual workers. See R. Florida, *The Rise of the Creative Class: How It's Transforming Work, Leisure, Community, and Everyday Life* (New York: Basic Books, 2003), and D.H. Pink, *A Whole New Mind: Why Right-Brainers Will Rule the Future* (New York: Riverhead Books, 2006).

executives report that they are satisfied with their company's "return on innovation" investment.⁸ Two major reasons can explain this outcome. First, the shift to addressing higher-level needs makes it less obvious which innovations will be successful. Simply offering incremental increases in the dimensions of existing functional performance produces diminishing returns; instead, customers prefer solutions that offer new experiences, solutions that speak to their desires and emotions. However, innovations that manage to capture customers' emotions are much harder to create, thus rarer. A second reason that is making innovation more important but also more demanding is that the issues that humans will have to address in the near future are increasingly complex. For example, major challenges like global population dynamics and the environmental degradation of our planet make the need for innovative solutions more pressing but also more difficult than ever. These problems are challenging in nature in that they defy simple, conventional solutions.

In summary, while increasing levels of uncertainty create a growing need for innovation, to actually produce those required innovations is **more and more challenging**.

8. J.P. Andrew, J. Manget, et al., op. cit., p. 4.

We need more innovation leaders

How can companies become more innovative in an environment that is increasingly challenging? Where do we expect these innovations to come from? Who do we expect to generate and develop them, and to usher them into the marketplace? Since the innovative capability of any organization is ultimately rooted in its members, we believe that people we call *innovation*

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leaders could help with this important but difficult task.

Innovation leaders exhibit a set of characteristics that help them succeed in their task. They listen, understand, show, and lead—sometimes to an unprecedented extent. The design researcher who checked himself into the emergency room of a hospital to help him (and, via video, his team) explore the details of the experience is a fair example.⁹

By communicating with internal team members and external stakeholders, innovation leaders also develop a deep understanding of

9. See T. Brown, *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation* (New York: HarperBusiness, 2009), p. 50.

the complexity and intricacy of the problem at hand, with an eye toward who is involved. They explore situations in which some tradeoffs are unavoidable, while overcoming others by re-framing the initial problem statement. They see the possibilities inherent in a situation, the opportunities lying beneath challenging circumstances. They do this through various formats—visual, oral, written, or electronic—and in the languages and contexts made necessary by the nature of the professional communities involved, from designers to engineers and marketing staff.

Finally, as the name implies, innovation leaders *lead*. This leadership can take on various forms—developing a compelling vision for a project, firm, or organization; moderating a challenging team conflict over some tradeoff decisions; helping internal and external stakeholders to grow through their work and engagement in the project.

How to create innovation leaders

Having identified the critical characteristics innovation leaders exhibit, the obvious follow-up question is: Where can people learn and develop these characteristics? While recent articles in the press advocate replacing busi-

ness schools with design schools,¹⁰ we believe that both business and design education provide essential pieces to this puzzle, and jointly can have a profound impact on creating innovation leaders.¹¹ To make our case, we invite the reader to think of professional work as composed of disciplines—just as the world of matter is composed of chemical elements. In this metaphor (which is illustrated in Figure 1), business and design are ele-

10. See, for example, M. Korn and R.E. Silverman, "Forget B-School, D-School is Hot," *Wall Street Journal*, June 7, 2012.

11. We build our argument here on the foundation of the work of prominent advocates of design thinking in business, such as Roger Martin, Tim Brown, and Thomas Lockwood.

	6 B Business	7 Br Branding	8 Mk Marketing
13 Ma Manufacturing	14 S Service	15 Dn Design	16 L Legal
17 Gd Graphic design	18 E Engineering	19 It Information tech	20 Sd Service design

Figure 1. The periodic table of professional disciplines.

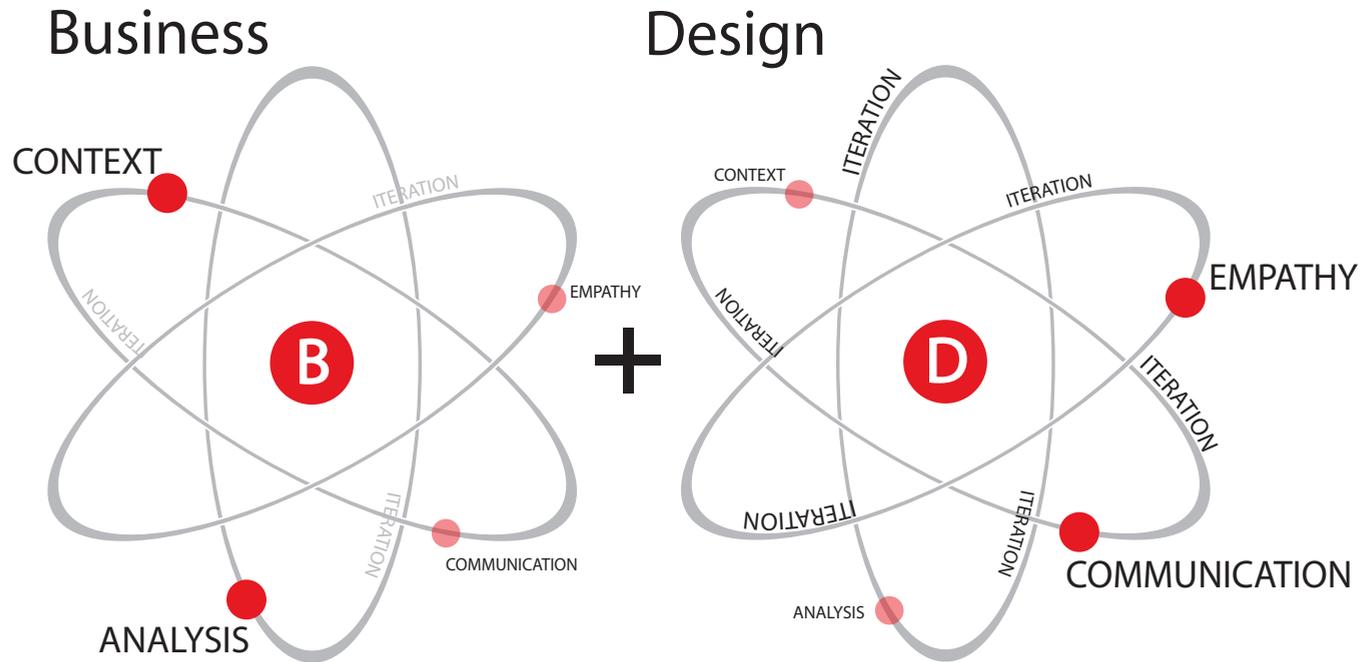


Figure 2. The shells of the elements business and design emphasize different characteristics.

ments, as are branding, manufacturing, engineering, and service design.

Focusing on their core characteristics and putting aside the overlap that does exist, let's briefly examine the most important contributions offered by business and design (Figure 2 on previous page).

One and one make three

Most business education today is organized around business functions. As a consequence, business students take a set of courses in business subdisciplines—marketing, finance, operations, strategy, human resources, accounting, economics, and law. Depending on the school's emphasis, other subdisciplines (entrepreneurship, for instance) can complete the picture. This collection of knowledge from various functional areas provides *context* for a business problem or, more specifically for this argument, for an innovation problem. Many of these subdisciplines favor an *analytic* perspective that emphasizes quantitative analysis and evaluation techniques. More broadly, the approach tends to be reductionist in trying to break down complex problems into their parts, and finding solutions for these parts individually before reassembling the overall solution. This approach

tends to progress rather linearly, iterating only through sets of quantitative assessments to run sensitivity analyses.

Design education, in contrast, helps students develop problem-solving approaches by actively encouraging iterations along the way. Skills that are required to create new solutions thus typically include understanding, translating, and

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articulating functional, emotional, and form requirements. Consequently, design students often are trained well in techniques that build *empathy*, such as design research, visual language, and drawing and form-giving skills. Although they are often complemented by courses in more theoretical knowledge areas, such as art history, literature, or the social sciences, many of these techniques are taught in project-based studio classes. This educational approach differs from the one prevalent in business education in two distinct ways. First, design education is far more application-focused than the rather abstract form that most

business education exhibits. Second, design education teaches much more to understand the world qualitatively, as opposed to business education often favoring quantitative analysis perspectives. In other words, designers are taught to *communicate* in more ways than focusing on numbers. This difference becomes apparent when one compares presentation styles of these two groups: business students

present tables and numbers to convince their audience, whereas design students engage in storytelling and evoke emotions to make their point.

On some level, the different viewpoints reflected in these two educational

traditions can serve as a template for a discussion of two different positions that are often debated in businesses. In assessing a company's health and prospects, business leaders sometimes argue over which should take primacy, top-line growth or bottom-line growth? The top line represents the sales captured by a company (it is so called because revenue appears as the first line, or top line, of a company's income statement). Top-line growth can be achieved through a number of ways—new product introductions, acquisitions, intense marketing, or aggressive sales campaigns (more broadly, developing and offering more,

better, or less costly solutions to the customer). However, top-line growth tells only part of the story about a company's health. In some situations, costs grow faster than revenue. When they do, a sole focus on revenue growth distracts from simultaneously decreasing margins, or even increasing losses.

Bottom-line growth refers to the growth of profits in some form. It is typically listed at the end of a company's income statement—hence bottom line. Again, on first view, profit growth seems eminently desirable, but only closer inspection can reveal whether the gain is short-lived because it was achieved through short-term product growth, or solely through harsh cost-cutting in such areas as manufacturing, where reduced costs may affect product quality; or in research and development, where reduced costs affect the number of new products that are designed. Profit growth attained by these measures may threaten a company's long-term prospects.

The long-term health of a business depends, of course, on improving both top- and bottom-line measures. For this reason, business leaders must keep an eye on both aspects. In other words, to survive and prosper, businesses need to develop new and better products and services, and they

must do so profitably. Blending business and design education can help substantially to prepare students for achieving this goal.

Returning to our chemistry metaphor, fusing business and design education to form innovation leaders is equivalent to forming a compound out of two elements, and our new compound is more than the sum of its parts (Figure 3). In addition to infusing the four characteristics of empathy, analysis, context, and communication in the innovation

leader, two additional characteristics of the new compound are particularly noteworthy. First, because the elements *business* and *design* live in different spheres, they have developed their own vocabularies, their own languages. The ability to translate between two languages and being comfortable switching between two different thought worlds is an ideal skill with which to identify and make completely new connections. It also enables the formation and leadership of a team whose members inhabit

Innovation Leader

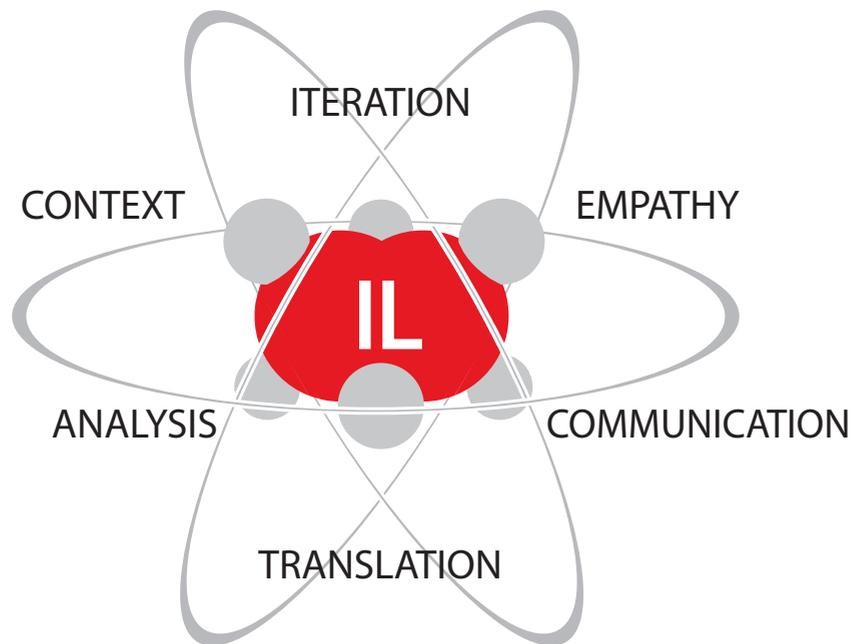


Figure 3. The innovation-leader compound combines characteristics from business and design to create something new.

these different thought worlds and work in different languages. Second, the notion of *iteration*, already significant in design education, less so in business education, now needs to go beyond merely the design world. Instead, iterations have to oscillate *between* creative and analytical considerations. This ability to iterate between creating new options and testing them is critical for navigating in uncertain environments, for developing and testing assumptions and hypotheses in the real world, and for understanding some failures as necessary experiments toward learning.

Necessary elements for educating innovation leaders

In order for future innovation leaders to develop the four characteristics of empathy, context, analysis, and communication, and to grow the two additional abilities (to function in an interdisciplinary role and to work iteratively between the two thought worlds), we believe the corresponding education model must exhibit the following qualities:

• *Truly interdisciplinary team set-ups.*

There are multiple points at which this form of education should take advantage of a blend of two disciplines. First, the teaching faculty

should work as a team composed of a mix of different disciplinary backgrounds. Their interactions, discussions, and tensions offer living examples for the students, and can provide starting points for

Embedding the learning in real projects is also critical. Blending business and design approaches with experiential learning will allow much deeper connections compared with simple lecture-style teaching.

interesting discussions. Second, the teams in which the students work should exhibit a diverse composition to give students the opportunity to work through similar challenges. For example, in our experience teaching interdisciplinary projects involving business and design students, those teams whose members took the time to immerse themselves in their teammates' discipline tended to outperform the teams in which each member clearly stuck to his or her own discipline.¹² Experience shows that interpersonal learning gained

12. S.K. Fixson and J. Rao, "Creation Logic in Innovation: From Action Learning to Expertise." In D. Greenberg, K. McKone-Sweet, and H.J. Wilson (eds.), *The New Entrepreneurial Leader: Developing Leaders Who Shape Social and Economic Opportunity* (San Francisco: Berrett-Koehler, 2011), pp. 43-61.

from working in multidisciplinary teams can be significant.

• *A focus on problem-based learning.*

Embedding the learning in real projects is also critical. Blending business and design approaches

with experiential learning will allow much deeper connections compared with simple lecture-style teaching. For example, such activities as (re-) framing a problem, in-depth research of user needs, and exploring a solution space by developing, articulating, and communicating ideas

are critical skills for an innovation leader.

• *A focus on learning to iterate.*

Deliberately blending business and design approaches will lead to purposeful iteration among creative and analytical activities—a skill at a premium in uncertain environments. In interdisciplinary project-based classes with built-in requirements for real-life testing, students will refine this skill while developing multiple options, purposefully identifying assumptions upon which the different options rest, articulating hypotheses and designing, executing, and interpreting experiments to test them. This form of iteration requires switching between creative and

analytical skills, as well as improving one's judgment around when it is appropriate to employ one or the other. An example from one of our courses is a team that developed a concept to support physical therapy exercises, but found out through careful target-user testing that the complexity of the solution actually negated its usefulness.

• *Appropriate use of physical space.*

With interdisciplinary, project-

people become innovation leaders. One way to enact this blended approach is to conduct interdisciplinary courses—for example, in product design and development. Over the past 20 years, a variety of these courses have been developed and introduced at universities and colleges across the US. Common across all these courses is the participation of members from different educational backgrounds and skillsets in interdisciplinary

In this article, we advocate for a new form of education that blends business and design elements to help people become innovation leaders.

based classes, the space should accommodate team collaboration. The ideal space would provide a place for the teams to collect, present, and review the findings of the project research phase. It would also provide quick access to simple prototyping materials and equipment, supporting the teams' need to engage in iterative concept development and testing.

Going forward

In this article, we advocate for a new form of education that blends business and design elements to help

teams, and the engagement in a hands-on experiential learning exercise. For example, Babson College has worked with Olin College of Engineering and the Rhode Island School of Design, and Massachusetts College of Art and Design has worked with Northeastern University to develop such courses, in which interdisciplinary teams engage in semester-long product development projects. Currently, more integral collaborations are being developed, such as dual degree programs and joint programs, and we are optimistic that these initiatives will help create the type of innovation

leaders who are comfortable navigating our increasingly uncertain world.

Suggested Reading

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