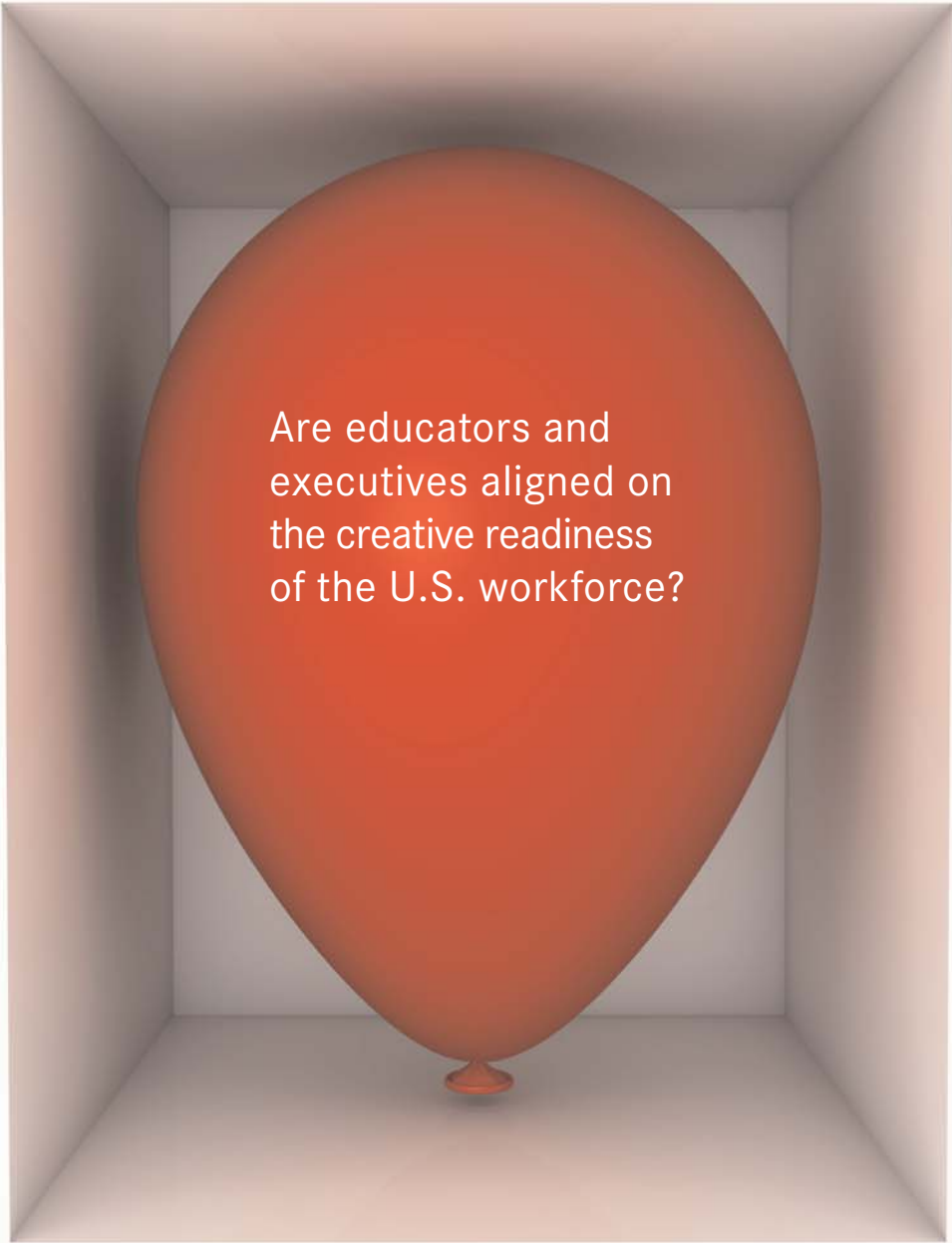




Ready to Innovate

RESEARCH REPORT
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Are educators and
executives aligned on
the creative readiness
of the U.S. workforce?

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Ready to Innovate

Are Educators and Executives Aligned on
the Creative Readiness of the U.S. Workforce?

by James Lichtenberg, Christopher Woock, and Mary Wright

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Introduction

Businesses in every country are competing in an increasingly global marketplace. To meet the challenges of tomorrow's business environment, employers need the best talent they can find—employees with twenty-first-century basic and applied skills who are ready to transition from an industrial-based economy centered on the production of commodities to a knowledge-based economy focused on delivering services and highly customized products.

Businesses must be able to compete in a world of constant innovation pushed by, among other forces, accelerating waves of new technology that empower the customer and increase the speed of commerce. Are U.S. businesses and K–12 school systems making the link between creative skill sets in the workforce and innovation?¹ Are businesses finding the creative talent they need to generate the innovative solutions and products demanded by the marketplace? And what efforts are both of these groups making to train employees in the needed creative skills?

The Conference Board and Americans for the Arts, working with the American Association of School Administrators, surveyed 155 U.S. business executives (“employers”) and 89 school superintendents and school leaders (“superintendents”) to determine the skills and abilities that cultivate creativity. The survey results reflect employers’ recognition that building an innovative workforce will depend on developing employees’ creative abilities. The survey also reveals that school superintendents recognize their own role in preparing tomorrow’s workers for a creative economy and that many of the educators’ perceptions about critical skills are consistent with those of employers.

¹ We define “creativity” or “creative ability” as a skill set that employees bring; “innovation” is an end product—an idea refined, tested, and supported by the marketplace—for which creativity is necessary.

Innovation in the Global Marketplace

Several related business issues that have attracted increasing attention recently—the transformation of the global marketplace, the rise of the service economy, innovation in American business, and the education and training of America’s students and new employees—are leading concerns for senior management. These business leaders see innovation as a fundamental element of sustainable success and growth in an increasingly competitive world. Pushing innovation also requires more corporate resources. According to the 2007 edition of the Boston Consulting Group’s annual innovation survey, two-thirds of respondents predicted their spending for innovation would increase, with one-third expecting increases of 10 percent or more.²

Past research by The Conference Board has confirmed that having the right talent is essential for creating and maintaining a culture of innovation. But employers express serious concerns about finding the right hires, preparing them for the workplace, and identifying employee skills critical to a culture of innovation within a company:

- Respondents to the 2007 edition of The Conference Board CEO Challenge Survey ranked *stimulating innovation/creativity/enabling entrepreneurship* their ninth greatest challenge overall. When chief executives were asked to rank their top innovation challenges, they chose *acquiring/developing the right talent* as their top concern.³
- In the biannual survey of The Business Council CEOs conducted by The Conference Board in late 2006, two of the top three barriers to successful innovation were *lack of qualified management personnel* and *lack of qualified technical personnel*.⁴
- When companies participating in the 2006 Ready to Work survey on education and the workforce conducted by The Conference Board, Corporate Voices for Working Families, The Partnership for 21st Century Skills, and the Society for Human Resource Management were asked to name the skills that will increase in importance over the next five years, *creativity/innovation* was selected as one of the top five.⁵

The Need for Talent

Two of these surveys also revealed that employers face difficulties finding talent in general. When the results for the 2007 CEO Challenge Survey were compared with the results of the previous year’s survey, *finding qualified managerial talent* rose from 11th to 4th place, and the ranking for *finding a qualified skilled workforce* jumped from 25th to 14th place.⁶ Less than a quarter (23.9 percent) of employers responding to the 2006 Ready to Work survey reported new entrants to their U.S. workforce with four-year college degrees brought “excellent” basic knowledge and applied skills, which included *creativity/innovation*.⁷ Employers participating in that survey also said that crucial deficiencies existed among entrants at every level. In the survey conducted for this report, 57 percent of the 155 employer respondents indicated they had difficulty finding qualified applicants with the desired creative skills. All of the research makes it clear that businesspeople and educators must work together to develop the workforce talent needed to enable continuous innovation.

Establishing the Link between Creativity and Innovation

Are business and school leaders aligned on the importance of creativity to workforce readiness and how to encourage it? In 2007, The Conference Board and Americans for the Arts, in association with the American Association of School Administrators (AASA), surveyed businesses executives (“employers”), who are creating the high demand for creativity, and AASA members (“superintendents”), who are influential in developing curricula to encourage creativity in students:

- The employer survey asked respondents to define creativity within an employee’s skill set and describe how senior corporate executives identify it in current and potential employees.
- The superintendent survey asked participants to identify the skills that best demonstrated creativity in their students – and which skills might signify creativity to potential employers.
- Superintendents and employers were also asked to rate high school graduates and new employees, respectively, on their possession of skills that demonstrate creativity.

² James P. Andrew, Harold L. Sirkin, Knut Haanæs, and David C. Michael, *Innovation 2007* (Boston: Boston Consulting Group, 2007), pp. 7-9.

³ *CEO Challenge 2007: Top 10 Challenges*, The Conference Board, Research Report 1406, 2007, pp. 3, 6.

⁴ *The Business Council Survey of Chief Executives: CEO Survey Results*, The Business Council and The Conference Board, 2006, Chart 4, p. 7.

⁵ The Conference Board, Corporate Voices for Working Families, Partnership for 21st Century Skills, and Society for Human Resource Management, *Are They Really Ready to Work? Employers’ Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce*, 2006, p. 49.

⁶ *CEO Challenge 2007: Top 10 Challenges*, p. 27.

⁷ *Are They Really Ready to Work?* p. 31.

What Is Innovation?

Innovation is not a skill or an ability, but an outcome of business and entrepreneurial activity. It is a complex concept that has been defined as:

- Not being “invention, and still less [...] scientific discovery.”^a
- “Fresh thinking that creates value.”^b
- “The implementation of a new or significantly improved product (good or service) or process, a new marketing method, or a new organizational method in business practices, workplace organization, or external relations.”^c
- “The design, invention, development, and/or implementation of new or altered products, services, processes, systems, organizational structures, or business models for the purpose of creating new value for customers and financial returns for the firm.”^d

- a Jason Pontin, “The Geography of Innovation: The global culture of valuable, fresh thinking,” *Technology Review*, January/February 2008.
- b Richard Lyons, chief learning officer at Goldman Sachs, in “Something New under the Sun,” *The Economist*, October 11, 2007.
- c *The Measurement of Scientific and Technological Activities: Guidelines for Collecting and Interpreting Innovation Data: Oslo Manual*, 3d ed., prepared by the Working Party of National Experts on Scientific and Technology Indicators, Organisation of Economic Co-operation and Development, paragraph 146.
- d Working definition of innovation used by the Measuring Innovation in the 21st Century Economy Advisory Committee charged with making recommendations on the subject to the Department of Commerce.

What Does It Take to Be Innovative?

Fostering and managing innovation is a continuous challenge for any business. A principal part of meeting that challenge is building a workplace culture that supports disruptive new ideas along with the inevitable false paths and failures necessary for innovation. Gary Hamel, visiting professor of strategic and international management, London Business School, says, “We have to accelerate the pace at which companies are able to reinvent themselves [and] really challenge their business model, their very reason for being.”^e The results of the 2006 CEO Survey by The Business Council reflected this need for a culture of innovation: respondents ranked *visible commitment from top leaders* and *establishing/promoting an innovation culture* as the second and third most important organizational practices for innovation. Only *acquiring and developing the right talent* ranked higher.^f

- e Allen Alter, “Strategist Gary Hamel Re-Imagines Management,” *CIO Insight*, September 2007.
- f *The Business Council Survey of Chief Executives: CEO Survey Results*, October 2006.

A growing need for creativity

Both the superintendents (99 percent) and employers (97 percent) agreed that *creativity is of increasing importance in the workplace*. And while not all employers were concerned with finding creative people—28 percent reported that finding creative individuals was not a primary concern in the hiring process—85 percent of employers seeking creative employees said they were having difficulty finding qualified applicants with the right characteristics.

What kinds of changes are making creativity more important in business? Both superintendents (54 percent) and employers (78 percent) pointed to the *demand for customized products and services* (Chart 1). (Both groups named *talent shortage* one of the least important influences on the rising demand for creativity.) But school superintendents focused more on an *emphasis on continuous innovation* (77 percent) and *globalization* (71 percent), while employers emphasized a *rise in consumer power* (53 percent) and *pressure due to disruptive innovation* (47 percent).

The reasons behind these differences in emphasis are not clear from either the survey results or related research. Since both groups overwhelmingly acknowledge the increased importance of creativity, it is likely that different perspectives drives the disparities (e.g., the processes of continuous innovation are a logical and necessary response to disruptive innovation). To bridge these gaps, both groups should engage each other more to comprehend the other’s perspectives and priorities.

Skills and behaviors that determine creative ability

When schools or businesses say “creativity,” what do they really mean? What skills are required by the corporate environment? Which lessons and areas of concentration will prepare students to be part of a creative workforce?

Employers who replied to the survey believe creativity has less to do with finding solutions than with the ability to spot problems or patterns others cannot see.

When asked to choose three qualities from a list of 11 attributes of creativity, business respondents selected *problem identification or articulation* (47 percent) and *ability to identify new patterns of behavior or new combinations of actions* (46 percent) as their top two (Chart 2). More than one-third of corporate respondents also characterized creativity in the workplace as the *integration of knowledge across different disciplines*, the *ability to originate new ideas*, and being comfortable with the *notion of “no right answer.”* Only 24 percent of employers identified *problem solving* as a critical element of creativity.

By contrast, 48 percent of superintendents gave *problem solving* their highest ranking for any of these attributes—reversing the divide in the *problem identification* category.⁸ The next top two indicators of creativity for superintendents—*integration of knowledge across different disciplines* (42 percent) and *ability to identify new patterns of behaviors or new combinations of actions* (40 percent)—are aligned with those of employers.

Chart 1

What changes in the business environment are making creativity increasingly important?

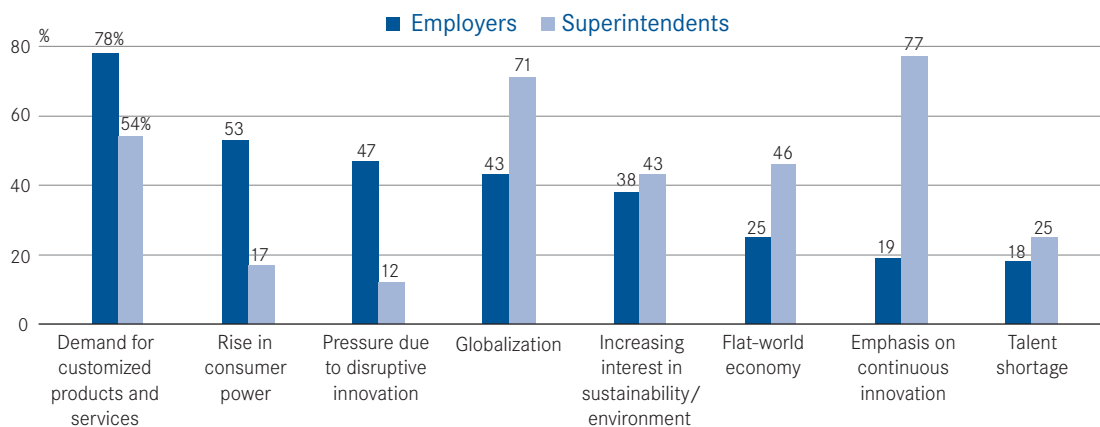
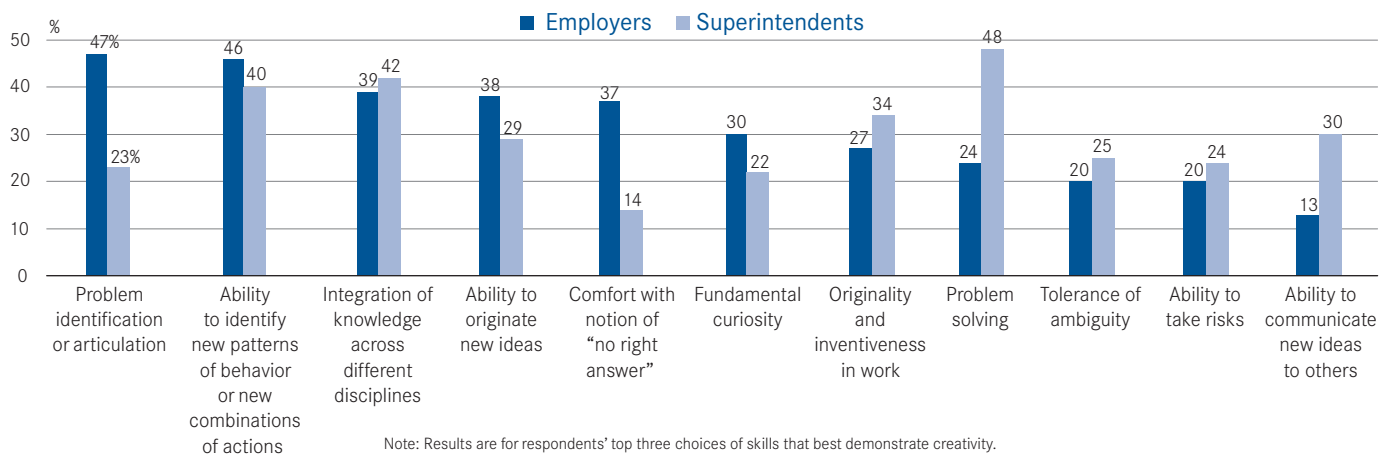


Chart 2

When asked to name the skills that best demonstrate creativity, the top choice of employers was “problem identification” and the foremost pick of superintendents was “problem solving.”



⁸ Whether or not problem-solving skills are a critical ingredient in creative ability, business executives desire them. In *Are They Really Ready to Work?* employers identified *problem solving* as an important applied skill for the overall success of new workforce entrants, separate and distinct from *creativity/innovation*. Thus, school administrators can confidently continue to include problem solving among the fundamental skills students need, while further work is needed to resolve whether problem solving is a key creative skill or a highly desired skill that is independent of creativity.

Curiously, both school superintendents and employers placed low importance on the *ability to take risks* and *tolerance of ambiguity* indicators. While both attributes are necessary for channeling creative ideas into successful innovation, they may not signify creativity in and of themselves.

Experiences and educational backgrounds that indicate creative ability

For both employers (56 percent) and superintendents (79 percent), a degree in the *arts* was the most significant indicator of creativity (Chart 3).⁹ The different percentages don't necessarily mean employers lack appreciation for the arts; they may simply reflect that the educational system is more homogeneous than the business world. Both sets of respondents also ranked *communications* second

(58 percent for superintendents, 45 percent for employers). Superintendents rated *engineering or computer science* third (47 percent) and employers rated it fifth (40 percent).

From the perspectives of employers and superintendents, work and volunteer experiences were equally important indicators of creativity (Chart 4). Almost the same percentage of employers who viewed an *arts* degree as an indicator of creative ability (56 percent) chose *self-employed work* as a sign of creativity (57 percent). Employers ranked work experience in a *business different from your company's focus* their second most significant work or volunteer experience indicating creativity (51 percent), consistent with the high value employers placed on *integration of knowledge across different disciplines* (Chart 2 on page 7).

Chart 3

Respondents considered degrees demanding abstract or critical thought the best educational indicators of creativity.

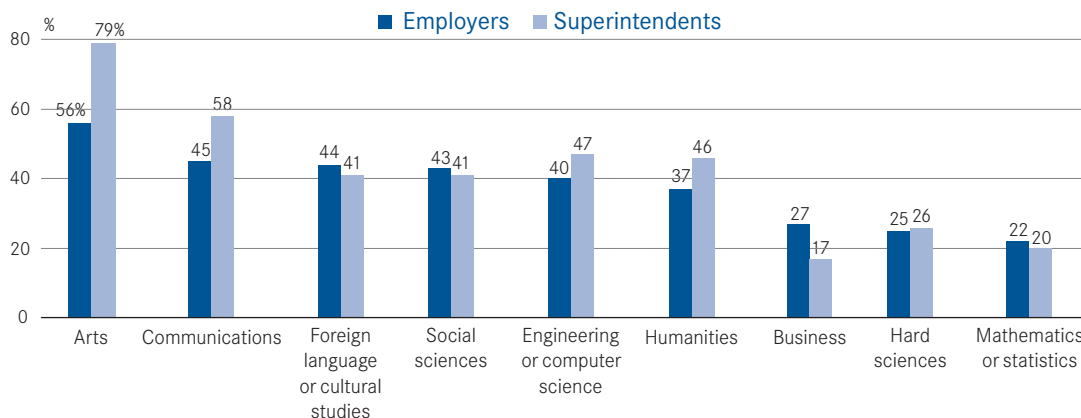
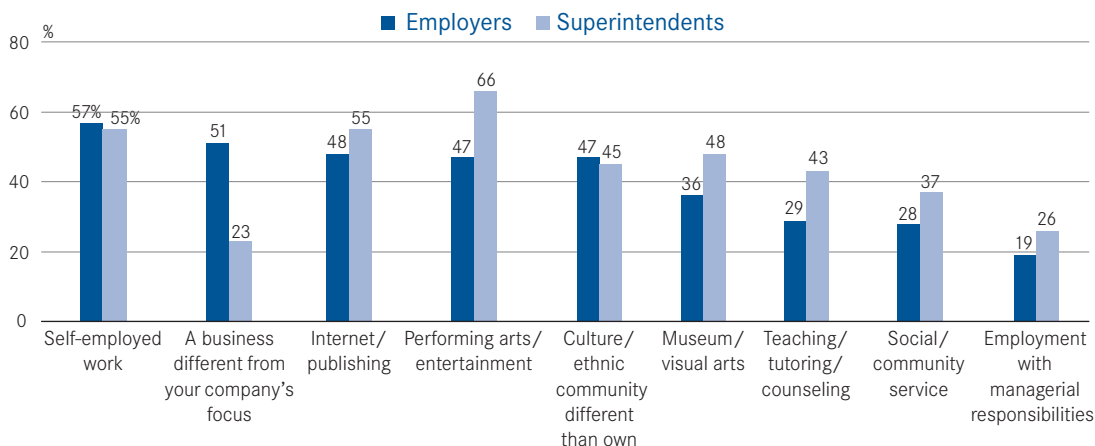


Chart 4

Respondents viewed work and volunteer experiences that provide a different perspective as the most valuable.



⁹ Arts, admittedly, is a broad category that covers a wide array of disciplines: dance, painting, drama, music, sculpting, etc.

While superintendents ranked *performing arts/entertainment* (66 percent) over *self-employed work* experience (55 percent), the latter still outranked every educational background except *arts* and *communications*. With minor differences, employers and superintendents generally agreed on the academic disciplines—and work or volunteer experiences—that represent the most significant indicators of creativity.

A look at the superintendents' combined ratings for academic backgrounds and work/volunteer experiences reveals that they placed more emphasis on educational background as an indicator of creativity, with *arts* and *communications* coming in first and second. In contrast, employers listed only one academic background (*arts*) among their top six indicators of creativity. In other words, employers expressed much more support for work and volunteer experiences as indicators of creativity.

While 97 percent of employers considered creativity of increasing importance in their workplace, 28 percent reported that finding creative individuals was **not** a primary concern in the hiring process. Because these employers were relatively similar demographically to the employers who did consider it a primary concern, a comparison of their responses on this point (and several others) is both valid and illuminating. Employers who did name creative ability as a primary concern during the hiring process cited a greater mix of educational backgrounds and work/volunteer experiences as top indicators of creativity (Chart 5). *Arts* and *communications* ranked among these employers' top three indicators of creative ability, a perspective more in line with the school superintendents.

“We need people who think with the creative side of their brains—people who have played in a band, who have painted, been involved in the community as volunteers. It enhances symbiotic thinking capabilities, not always thinking in the same paradigm, learning how to kick-start a new idea or how to get a job done better, less expensively.”

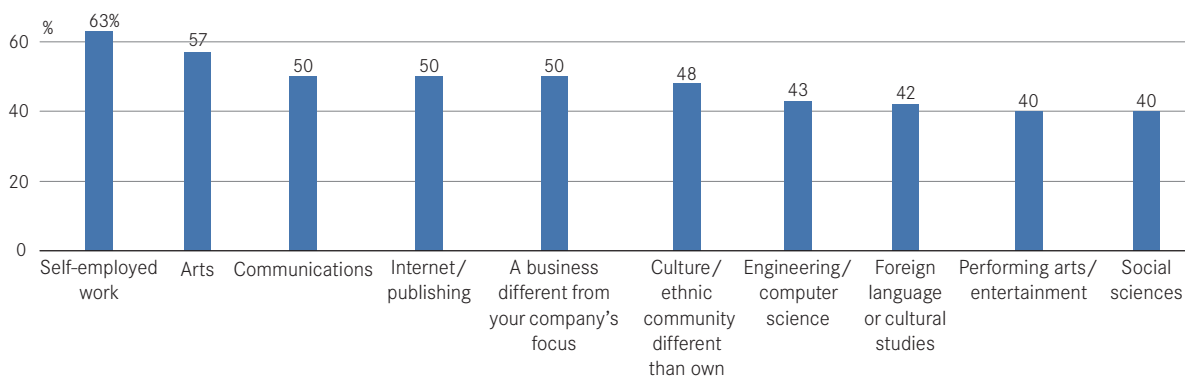
Annette Byrd

Manager, Healthy Work Environment, GlaxoSmithKline
Quoted in *Are They Really Ready To Work?* pp. 50–51.

These findings suggest two conclusions. First, employers who consider creativity a primary concern in hiring view certain academic disciplines (e.g., *arts*, *communications*) as better indicators of creativity among hires. Second, the high value placed on work and volunteer experiences in relation to educational background suggests that schools should encourage students to pursue outside activities. Since employers value work experience in a *business different from your company's focus* as an indicator of creativity, experience that might seem irrelevant may, in fact, prove advantageous. Schools can also improve the workforce readiness of their students by looking for ways to provide them with opportunities to develop these highly valued experiences, including self-employed work and access to positions in the performing arts or entertainment.

Chart 5

Employers who considered creativity during the hiring process preferred a varied mix of educational and work experiences.



The Creative Skills of Workforce Entrants

What creative skills are employers looking for in new entrants into the workforce? Do new hires bring these capabilities?

When employers were asked how well new workforce entrants displayed the creative attributes previously discussed, more than half of the employer respondents agreed that prospective employees met or exceeded expectations for seven out of the 11 skills (Chart 6).¹⁰ Three of these seven—*problem identification/ articulation* (67 percent), *integration of knowledge across different disciplines* (57 percent), and the *ability to originate new ideas* (55 percent)—were also three of the four highest-ranked indicators of creativity.

When it comes to assessing mastery of creative skills among high school graduates, school superintendents offer even stronger appraisals, and more than half reported that graduates met or exceeded expectations on all 11 skills. Seventy-five percent of superintendents reported students surpassed expectations in *problem identification or articulation*—the skill business leaders rank the best indicator of creativity.

Likewise, a similar subset of superintendents (73 percent) reported graduates met or exceeded expectations in *problem solving*, the skill superintendents said best demonstrated creativity. Their approval far exceeded that of employers (45 percent). Similar gaps appear between superintendents and employers when it comes to confidence in graduates' *fundamental curiosity* (75 percent versus 56 percent), *ability to identify new patterns* (58 percent versus 35 percent), and *comfort with notion of "no right answer"* (57 percent versus 33 percent).

These discrepancies are worrisome because of the potential implication that business leaders are running workplaces that stifle creativity. They might also mean that newly hired workers in unfamiliar corporate environments feel hampered by business constraints and may initially behave in a more restrained manner than during their school years. Alternatively, the gap could indicate that school superintendents are unable to accurately judge how their students will demonstrate creative skills and abilities in the workplace that match employers' expectations. It's equally plausible that some creativity is lost between graduation from high school and entry into the workforce. Whatever the cause, it's obvious that the educational and business communities' assessments of the creative readiness of the new workforce are out of sync, which could possibly result in misdirected investments in creativity development.

Chart 6

More than half of the superintendent respondents thought high school graduates met or exceeded expectations for all creative skills, while employers' ratings for new entrants to the workforce were mixed.



Note: Employers were asked to rate the degree to which new workforce entrants demonstrated these qualities, and superintendents were asked to assess high school students. Percentages represent a combination of the scores for the "meet expectations" and "exceed expectations" survey categories.

¹⁰ See Chart 2 on page 7 for the ratings for these attributes as determinants of creativity.

Creative Skills in the High School Curriculum

What types of high-school courses help develop the creative skills employers seek? As shown in Table 1, more than 90 percent of superintendents agreed on *creative writing* (99 percent), *music* (97 percent), *dramatic arts* (97 percent), and *studio arts* (94 percent). (*Creative writing* and *music* were also identified as the two leading activities for all grade levels.)

This consensus is supported by a survey on the arts and employability conducted by DTZ Consulting & Research for the Scottish Executive Tourism, Culture and Sport Information and Analytical Services.¹¹ The survey found that young people who had studied music or graphic communication were among the most employable of those who leave school at the earliest opportunity. The authors of the report also said that there was a clear link between drama and music and a high level of confidence, which, in turn, had an impact after students left school. According to the authors, “Young people from lower socioeconomic backgrounds gaining confidence at school, as demonstrated by drama or music students, are more likely to enjoy higher salaries and enter professional or managerial jobs.”¹²

Despite their high marks for these skills, superintendents said that, with the exception of *creative writing*, classes in these disciplines were mostly available to high school students on an elective basis only. *Music* was required in only 17 percent of the districts, while *dramatic arts* and *studio arts* were required in less than 10 percent of high schools. It is also worth noting that, while the scores were notably lower than those given for the arts categories, 78 percent of school superintendents said courses typically identified with the more basic skills—*Biology/chemistry/physics* and *math/statistics/computer science*—were also indicators of creativity.

Placed against the skills and educational backgrounds employers view as indicative of creative ability, these results are unsettling. Even though employers value the arts when seeking new hires with creative ability, most of the school districts we surveyed did not require classes in these disciplines. In fact, 15 percent did not offer any classes in studio arts. The question then becomes: how many students are not enrolled in these classes altogether and, as a result, are not adequately preparing themselves for a world where creativity is a critical skill businesses are looking for?

Table 1

Developing creativity in high school

Activity	Percentage of superintendents who said the activity develops creativity in high school	Percentage of high schools where activity was:		
		Required	An elective	Not available
Creative writing	99%	54%	43%	3%
Music	97	17	81	2
Dramatic arts	97	4	87	9
Studio arts	94	7	77	15
Independent study	87	5	84	11
Foreign language	85	30	68	1
Travel/study abroad	85	1	55	44
After-school enrichment	81	7	66	27
Math/statistics/computer science	78	80	20	0
Biology/chemistry/physics	78	76	21	3
Coaching/mentoring	77	7	70	22

Note: Due to rounding, percentages may add up to more or less than 100.

¹¹ Richard Marsh, Irene Mosca, and Dr. Fabian Zuleeg, *Arts and Employability* (Edinburgh, Scotland: Scottish Executive Social Research, 2006).

¹² Marsh, Mosca, and Zuleeg, *Arts and Employability*, p. 6.

Who Is Responsible for Instilling Creativity?

When the discussion turns to instilling creativity in the workforce, the conversation often begins and ends with education. The Council on Competitiveness claims “new curricular and teaching approaches are needed.”¹³ Yet the results from our survey suggest that this responsibility should in fact be shared broadly—by educators, employers, and other interested individuals.

Most superintendent and employer respondents believed they were responsible for cultivating creativity. More than 80 percent of superintendents—compared to less than half of employers—said *K-12 schools* are responsible (Chart 7). Nearly two-thirds of employers felt it was *the hiring employer’s* responsibility, but less than one-third of the school superintendents agreed. *Parents* are responsible as well, according to both superintendents (64 percent) and employers (43 percent).

Hiring the Creative Worker

Responses to a survey question about hiring preferences demonstrated superintendents’ belief that creativity should be nurtured and developed in students prior to entering the workforce. The two survey groups were asked to choose which of the following statements characterized either their

workplace environment (employers) or the workplace they were preparing students for (superintendents):

Employers prefer to take an individual who is technically skilled at performing tasks associated with the job, and provide a working environment that develops and cultivates creative capabilities.

or

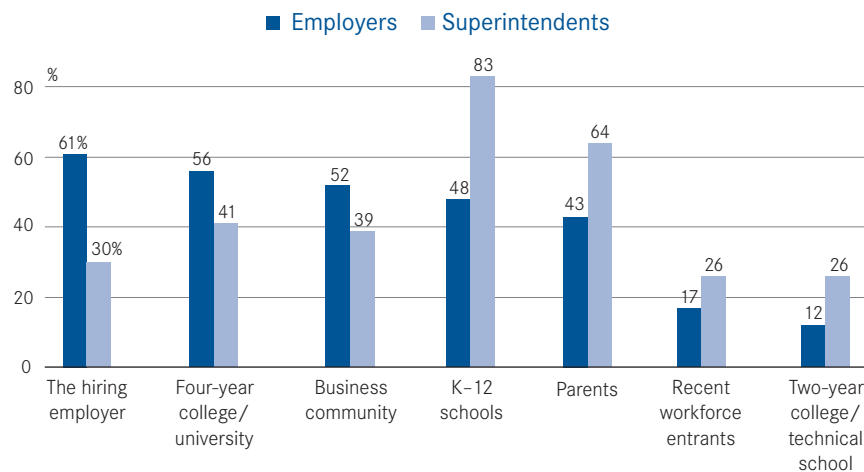
Employers prefer to take an individual who is a creative thinker and willing to take creative risks, and provide a working environment that develops and cultivates the technical skill needed to perform the tasks associated with the job.

While 70 percent of superintendents said employers prefer “creative thinkers” over “technically skilled” individuals, employers themselves were evenly split (49 percent to 51 percent). To understand this contrast, it helps to sort employer respondents by views on whether creative ability is a primary concern during the hiring process.

Responses from employers who considered creative ability a primary hiring concern were closer to those of school superintendents than those of their business peers who did **not** consider creative ability a significant hiring issue.

Chart 7

Both employers and superintendents said their respective professions bear the greatest responsibility for encouraging creativity.



Note: Results reflect respondents’ top three choices for the communities that are primarily responsible for instilling creativity.

¹³ *Innovate America: Thriving in a World of Challenge and Change*, National Innovation Initiative, Council on Competitiveness, July 2004, p. 8.

Sixty-three percent of employers who considered creative ability a primary concern in the hiring process preferred the creative employee over the technically skilled individual, compared to 16 percent of employers for whom creative ability was not a primary hiring concern.

Not all employers share a commitment to creativity. A practical lesson for employers, school superintendents, and individual job seekers is that workforce entrants with stronger creativity skills may be better served by seeking out companies that consider creative ability an important quality for new hires.

Playing a Guessing Game

The first step in making a hire—or in developing programs to instill creativity in employees—is to ascertain the creative abilities of potential workers. More than 70 percent of employers revealed that finding qualified applicants with creative characteristics is a primary concern; of these, more than eight in 10 said they were having difficulty finding qualified creative applicants. But few employers used *profile tests to assess creative skills of potential employees*; even among employers who valued creative hires, only 20 percent had potential hires take such tests. Instead, these employers said they relied on face-to-face interviews, weighing an applicant's *ability to look spontaneously beyond the specifics of a question and present other aspects of the subject under discussion* (78 percent) and *responses to hypothetical scenarios* (70 percent). Another 40 percent analyzed *elaboration on extracurricular activities or volunteer work*; 27 percent said they appraised a candidate's *appearance* (style of dress, accessory, hair, etc.) to assess creative skills/ability.

Evaluating the Creative Employee

More than half of the employers evaluated creative skills in their employees through either performance evaluations or other structured measures. Processes to evaluate creativity appear to have become more systematic, although a gap exists between employers concerned with finding creative employees and those for whom creativity was not a strategic imperative in hiring. To cite just one example, 32 percent of employers who were seeking creative employees said they had a structure *to insulate innovation from revenue/profit pressures*, while only 8 percent of employers who did not consider creativity a chief hiring factor provided the same protection for innovation (Table 2).

“I believe that any person can be trained to become a creative person and a solution provider. But the training must include the core knowledge—and not just the tools and techniques of their job—as well as innovation skills with a relentless focus on bottom-line impact. A majority of hiring managers look for employees with only the tools and techniques to maintain the company's current business. Their training is also limited to such task-oriented skills.”

Krishnamoorthy Subramanian

Director, Surface Preparation Technologies
Saint-Gobain Corporation.

Table 2

Comparing efforts to encourage creativity

	Employers who made creativity a primary concern during the hiring process	Employers who did not make creativity a primary concern during the hiring process
Creativity skills or behaviors included in performance evaluations	70%	24%
Define a process/pathway for bringing new ideas to the attention of senior management	62	40
Reward new ideas, regardless of success	37	24
Create structures to insulate innovation efforts from revenue/profit pressures	32	8
Set annual revenue percentage targets for goods and services less than five years old	23	4

Cultivating Inventive Workers

In the overall employer ratings, 86 percent considered *working in departments other than their own* an activity that developed creativity (Table 3). Only 9 percent of employers said they made that experience possible for all employees, however, and 69 percent only offered it on an “as-needed” basis. *Mentoring*, *working with outside innovation/creativity consultants*, and *managerial coaching* are also important ways of developing creative skills, according to over two-thirds of respondents. Almost a third of business respondents indicated that *specific “forced”/recommended weekly creativity time* helps develop creative skills, but only 11 percent of that group provided the opportunity on an “as-needed” basis and none of the companies provided this opportunity to all employees.¹⁴

Even employers who valued creativity among new hires did not offer company-wide activities aimed at developing creativity. Their provision of these opportunities “as needed” was only slightly better. More than three in four were providing opportunities “as needed,” including those activities believed to most strongly develop creativity—*managerial coaching* (86 percent), *mentoring* (85 percent), and *working in departments other than their own* (69 percent).

Encouraging Creativity: Strengths and Weaknesses

As previously noted, almost all of the superintendents and business executives surveyed for this report agreed that creativity is of increasing importance. But how did their views on what is effective in developing creativity match up with what they provided at the time of the survey? More than half of the employers surveyed provided four of the eight activities/types of training listed in Table 3 on an “as-needed” basis only (upper right-hand quadrant of Exhibit 1), and less than 10 percent offered seven of the eight to all employees (upper left-hand quadrant of Exhibit 2). (None of the survey companies had *specific “forced”/recommended weekly creativity time* available for all employees.)

Among employers who said creativity was a primary concern during the hiring process, five activities were provided on an “as-needed” basis by at least half of the respondents (upper right-hand quadrant of Exhibit 3). The findings for this subgroup regarding provision of activities for all employees was similar to the overall group, with less than 10 percent extending opportunities to all employees (upper left-hand quadrant of Exhibit 4). *Peer coaching* is the only training/activity offered more widely by employers who considered creativity a primary concern than by employers in general.

Table 3

Developing creativity within company walls

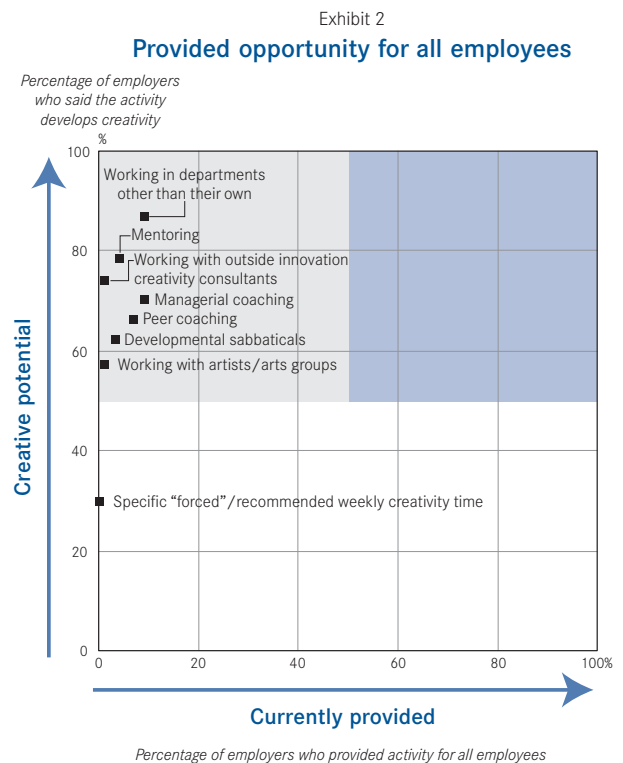
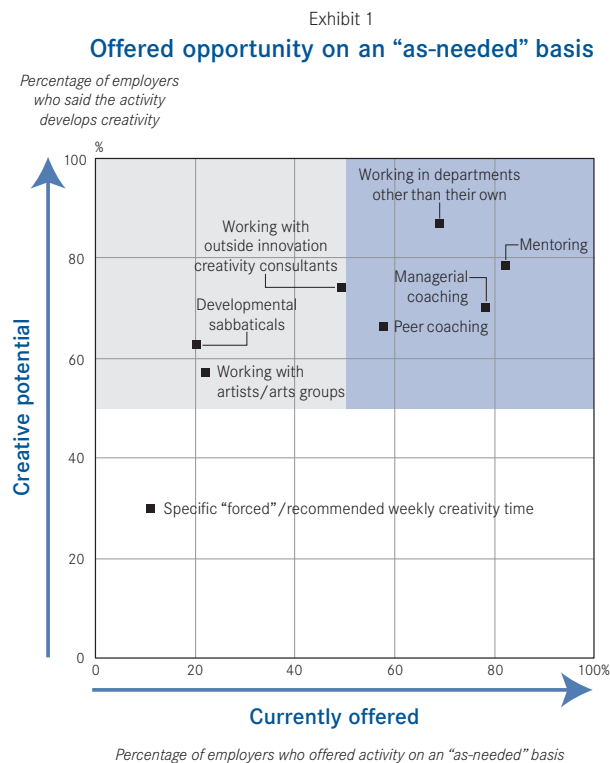
Activity	Percentage of employers who said the activity develops creativity	Percentage of employers who:		
		Provided for all employees	Offered on an “as-needed” basis	Did not provide
Working in departments other than their own	86%	9%	69%	22%
Mentoring	78	4	82	14
Working with outside innovation creativity consultants	74	1	49	49
Managerial coaching	71	9	78	13
Peer coaching	68	7	58	35
Developmental sabbaticals	63	3	20	77
Working with artists/arts groups	57	1	22	77
Specific “forced”/recommended weekly creativity time	30	0	11	89

Note: Due to rounding, percentages may add up to more or less than 100.

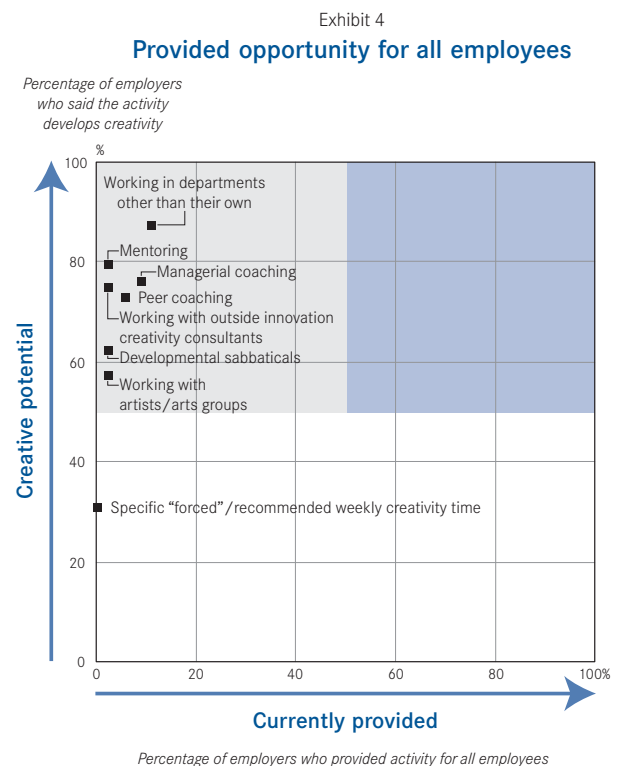
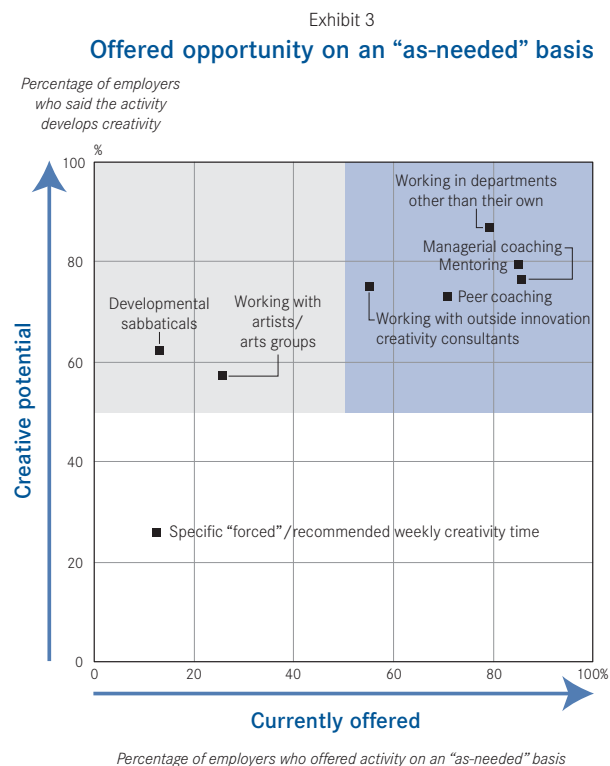
¹⁴ The highly publicized practices of Google or Apple are in stark contrast to these results. See, for example, Rick, Wartzman “Google: A Druckerian Ideal?” *BusinessWeek.com*, October 25, 2007; “Apple’s Other Legacy: Top Designers,” *BusinessWeek.com*, September 6, 2005.

Do Current Programs Reflect Convictions about Creativity?

All employers



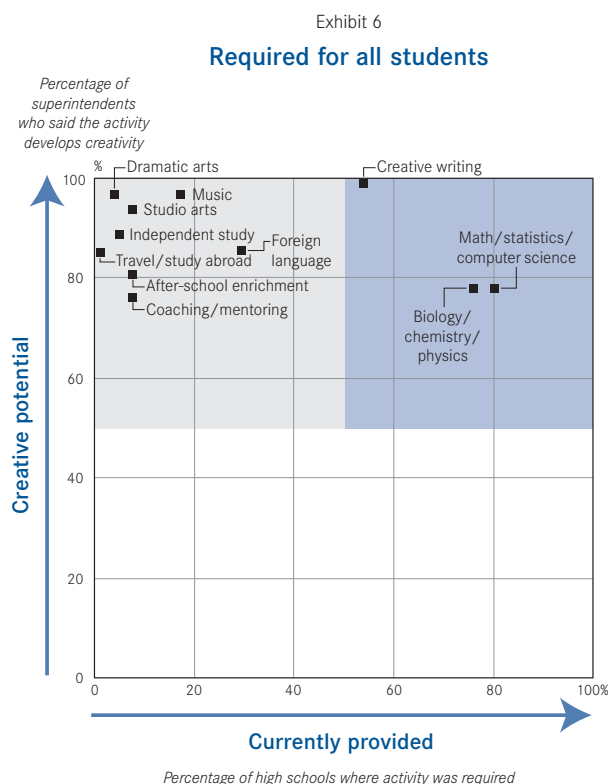
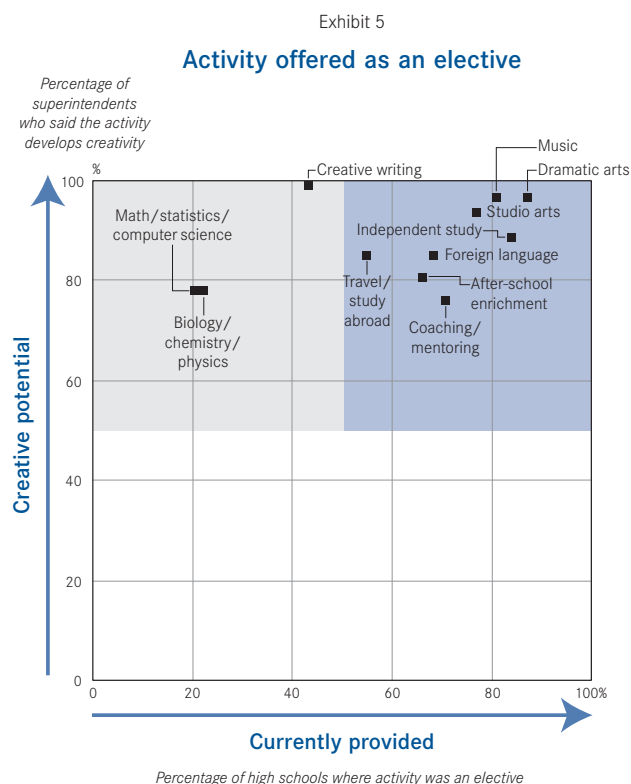
Employers who considered creative ability a primary concern when hiring



Note: The vertical axis represents the degree to which each group (superintendents or employers) believed a certain activity develops creativity, and the horizontal axis represents the degree to which this activity was being offered. Activities located in the upper right region represent those that were both believed to develop creativity and were actually being offered – that is, the group was backing its belief in an activity by offering it. Likewise, activities in the upper left region are those activities that were believed to develop creativity, but were currently being offered by only a few respondents. In contrast, activities in the lower left-hand region are those that were not believed to develop creativity and were not offered by many in the group.

Do Current Programs Reflect Convictions about Creativity?

High schools



Note: See explanatory text on page 15.

Most of the superintendents reported offering many activities they regarded as indicators of creativity—*music, foreign languages, creative writing, math/statistics/computer science, and biology/chemistry/physics*—as a required or an elective course. Unlike businesses, many high school districts made activities encouraging creativity a requirement: superintendents reported that more than half of their high school districts required at least three activities aimed at developing creativity (Exhibit 6).

The Conference Board has identified “finger pointing” among the business, educational, and public sectors as a serious detriment to improving workforce readiness.¹⁵ Creative readiness activities are no different. The results here strongly suggest the need for both superintendents and employers to take a hard look at the steps required to revise curricula and restructure training programs to develop creativity.

Creating a Bond: Successful Business/School Partnerships

The following are just two examples of how forward-thinking U.S. businesses are already encouraging the interaction of students, creativity, and corporate innovation.

Ford Motor Company recently partnered with an elementary school in Yorktown Heights, New York, to sponsor a contest that asked teams of elementary school students to design an environmentally friendly car. Ford engineers were impressed by the imagination and design skills of these children, noting that the students bring a level of creativity that is not burdened by the engineering and business realities faced by professional designers.^a

The Bank of America Charitable Foundation has given San Francisco’s Asian Art Museum a \$1 million gift to underwrite a major expansion of its educational programs. This donation will allow the museum to bring its renowned educational resources to thousands of K–12 teachers and students throughout California and, via new educational resources on the web, school communities throughout the country.^b

¹⁵ *Are They Really Ready to Work?*; Charles Mitchell, *Workforce Readiness Initiative: Meeting Summary Report*, The Conference Board, Electronic Report 14, 2007; Charles Mitchell, with Linda Barrington, “Investing in the Future—the Importance of Cross-Sector Partnerships in Improving Workforce Readiness,” The Conference Board, Executive Action 258, February 2008.

^a Tanya Mohn, “Getting an Early Start on Drawing the Future,” *New York Times*, December 16, 2007.

^b “Asian Art Museum Announces \$1 Million Grant from the Bank of America Charitable Foundation to Expand Education Programs for K-12 Teachers and Students,” Bank of America Press Release, San Francisco, November 20, 2007.

Conclusion

As they move into America's third millennium, U.S. businesses face increased levels of global competition. In this new environment, innovation of products, services, and processes is essential if companies hope to create competitive advantages, satisfy increasingly powerful global consumers, and prevail economically in a sustainable fashion. This emphasis on innovation will depend on strong creative skills from new entrants to the workforce. As businesses seek out this creative talent and as schools recognize the importance of cultivating creative abilities, both sectors see involvement in the arts and other work experience as markers of creativity, along with cultural diversity and self-employment.

Our research confirms that both employers and superintendents recognize the critical role schools play in preparing new entrants for the workforce. While the question of whether American schools are currently teaching the arts in an adequate fashion is one that goes beyond the scope of this report, it is clear that the arts—music, creative writing, drawing, dance—provide skills sought by employers of the third millennium. When asked to choose between prospective hires with technical skills and potential employees who are creative thinkers, 70 percent of school superintendents and 63 percent of employers who considered creativity a primary hiring criterion agreed that employers prefer the latter.

Employers are placing greater strategic value on innovation and increasing the importance of employing creative workers. Executives in this survey agreed that they share responsibility for instilling creativity in their workforce. Their support of employer-provided programs, however, appears to be lacking. With their increased interest in hiring creative workers, business leaders must reevaluate corporate support for education at all levels.

Both the education and business communities appreciated the need to foster creative new workforce entrants. To do so, however, each community must evaluate its own commitment to instill the skills that advance creativity and establish better communication between the two communities. Increased dialogue and understanding will allow education and business to better align their efforts and investments with the important task of guaranteeing the creativity of both the current and the future workforce.

About This Report

This report is part of The Conference Board Workforce Readiness Initiative. Focusing on the skills and knowledge of current, new, and future employees, the initiative is committed to helping ensure that employers have the workforces they need to compete in the global marketplace. Our evolving work is validated by frequent interaction with our 2,000 member companies as we respond to their emerging business issues.

About the Survey

This report is based on the Creativity as a Skill for Innovation in the U.S. Workforce survey, which was cosponsored by Americans for the Arts and focused on how creativity is valued in the workplace and schools. Two parallel surveys were administered—one to 155 corporate executives and the other to 89 school superintendents. Questions were designed to uncover how each group identifies, encourages, teaches, and evaluates the creative abilities of their employees/students and to identify specific practices companies and school districts use to enhance the creativity skills of their employees/students.

Survey Respondent Characteristics

The business survey targeted senior-level leaders in the areas of human resources, education, training and development, talent management, innovation, and R&D. The school survey was administered to superintendents and school leaders. Survey responses were solicited by email during the week of September 17, 2007, with a second round solicited the first week of November 2007. The survey officially closed on November 28, 2007.

Business survey respondents covered all major industries, with a majority of the respondents representing business and professional services, financial and insurance services, and manufacturing. Twenty-six respondents appeared on the 2007 Fortune 500 list, another eight came from privately held companies with revenues in the Fortune 500 range, and 11 respondent companies were on the 2007 Fortune 100 list. School administrator responses were collected from a sample of school superintendents and leaders who are members of the American Association of School Administrators. These respondents represented a school district mix of approximately 13 percent urban, 40 percent suburban, and 47 percent rural.

About the Authors

Jim Lichtenberg is president of Lightspeed, LLC, a management consulting practice in New York City that counsels clients in general business and book publishing. Since 2005 he has served as program director for The Conference Board Council on Innovation, an activity that has drawn him into other innovation-related activities, including research and conferences. In 1999, he helped found the Digital Strategy Council, and he has served as its program director since the first meeting in 2000. His articles on marketing, technology, culture, and educational policy have appeared in the *New York Times*, *Chronicle of Higher Education*, *Publishers Weekly*, *Market Trends*, and *Foreword*. His opinions have been cited by the *New York Times*, *Philadelphia Inquirer*, and *Houston Chronicle*, with on-air appearances on *The Today Show*, National Public Radio, and CBS. He has served on strategic planning committees on behalf of the United Way, the White House, the National Institute for Independent Colleges and Universities, and the Joint Economic Committee of the U.S. Congress.

Christopher Woock, Ph.D., is a research associate in the Management Excellence Program of The Conference Board. His current research projects explore the empirical links between human capital and business performance, including addressing the link between innovation and competitiveness, evaluating business's investment in the skills of its current and potential workforce, and assessing issues surrounding a multigenerational workforce.

Mary Wright is the project leader for The Conference Board Workforce Readiness Initiative, which is designed to help ensure that employers have the workforces they need to compete in the global marketplace. Along with managing the research demanded by the program, she manages the Business and Education Council and the Community and Public Affairs Council and plans and executes three national conferences, including Corporate Community Involvement and Global Business and Education. Prior to 2000, Wright worked for Financial Guaranty Insurance Company, then a GE Capital company, as a vice president in the public finance department and later in new product development and manager of government affairs.

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