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From the Dawn of Humanity to the 21st Century:
Creativity as an Enduring Survival Skill

ABSTRACT
While the scientific investigation into creativity is a recent phenomenon, creative thinking has always been a crucial feature of humanity. The ability to creatively solve problems enabled early humans to survive and laid the foundation for the creative imagination that has resulted in our modern society. While most humans no longer face physical threats, life and work in the 21st century demands heightened creativity skills. To meet these demands, educational practices must leverage the insights and strategies gained through research into the trainability of creative thinking.

Keywords: creativity, education, problem-solving, thinking

CREATIVE THINKING: INNATE SURVIVAL SKILL
Many scholars point to 1950 as the line of demarcation for the scientific study of creativity. In this year, J. P. Guilford (1950) delivered his presidential address to the American Psychological Association. In his speech, simply entitled Creativity, Guilford highlighted the lack of research into this fundamental, and unique, human phenomenon. Guilford suggested that much work was to be done to better understand both the nature and nurture of creativity. Since Guilford’s speech, basic research into creativity has dramatically increased, as have educational and training programs designed to enhance creative-thinking skills. While interest in understanding creativity has exponentially increased since the middle of the 20th century, it could be argued, and should, that creativity has played a central role in the advancement of the human race since the dawn of humanity. This essay highlights the fact that while creativity has always been essential to survival and success, life in the 21st century, perhaps like no other time in modern history, has rendered creativity a must have professional and life skill.

HUMAN’S INNATE CREATIVITY-CONFORMITY POLARITY
Comparatively speaking humans are a weak species. We are not naturally designed for a wide range of environmental conditions. Yet humans inhabit all regions of the globe. We cannot fly away from danger, hide through natural camouflage, or outrace many four-legged creatures. Despite our obvious physical deficiencies, the human species has survived and thrived. What then has been our competitive advantage? One abundantly clear answer is Creativity. Humans are designed to create; what our imagination can conceive our opposable thumbs allow us to build and our language skills enable us to communicate.

With the advent of the Homo genus roughly 2.5 million years ago, the arc of human evolution, from survival in hostile environments to our modern society, has left artifacts that tell the story of our ever-expanding application of creativity. And it could be argued that the ability to apply creative thinking to...
Early humans showed a clear capacity for creative problem solving, and it was this ability that ensured survival and subsequently laid the foundation upon which modern society would be erected.

Homo sapiens emerged about 300,000 years ago and with the creative mind endowed by past species, these modern humans applied their creativity to produce a vast array of life-altering products. For instance, about 160,000 years ago body painting began; roughly 100,000 years ago weapons were revolutionized as they progressed from thrusting to those that could be launched; what is believed to be the oldest known musical instrument was created 40,000 years ago; around the same time the construction of the first-purpose built shelter occurred; and the production of clothing by means of sewing happened 27,000 years ago (Palmer, 2010). More than any previous human species, homo sapiens applied their imaginations to activities that went beyond the immediate physical issues of survival, such as the production of art and cultural rituals.

This brief overview of human evolution highlights the fact that the survival and expansion of the human species is fundamentally a story of creativity. The application of creative thinking to solve problems provided early humans with a competitive advantage; a quality that was selectively retained and passed along to subsequent generations. And I would argue that with successive generations, the applications and results of this competitive advantage, creative thinking, grew from stone tools to the construction of the very world we live and work in today. As Morriss-Kay (2010) argued, “without these survival-enhancing functional origins, it is unlikely that we would have the neural equipment to create art” (p. 174).

Given the evolutionary benefits of creativity, all humans are endowed with a creative mind; however, human survival was not dependent on creative thinking alone. To reach its full value and impact, creativity must have a polarity partner (Johnson, 1996). According to Johnson, a polarity exists when two value-neutral constructs work together to create an interdependent relationship. I would argue that conformity is the necessary polarity partner to creativity (Puccio, 2012). According to evolutionary psychologists (Dunbar, Barrett, & Lycett, 2007), all humans are born with a conformity bias; that is a tendency to adopt and repeat established norms and behaviors. Conformity promotes cooperation, collaboration, efficiency, and predictability. Like creativity, our conformity bias is innate. Together they create a functioning system, and one without the other is counterproductive. While there is a natural tension between conformity and creativity, it is the partnership that promotes growth and change. Where the creative mind produces new and valuable ideas, it is conformity that ensures that useful novel ideas are adopted and disseminated.

CREATIVE THINKING A 21ST-CENTURY SURVIVAL SKILL

Successful species develop advantages that equip them to adapt to their surroundings. Unlike other species, our competitive advantage, the creative mind, results in creative products, both tangible and intangible, that fundamentally change the environment. Our creativity creates a cycle in which we produce creative ideas that allows us to more effectively adapt to our environment, yet at the same time alters the environments in which we live and work. This creation–adaption cycle has accelerated over time and shows no sign of slowing down. According to Henry (2001) between year 1 and 1899, there were a total of seven technological and social inventions that fundamentally altered the human experience, the next 100 years saw a dramatic increase to a total of 21 life-changing creative products. In today’s hyper-fast world, technological products go through fundamental redesign every 6–12 months.

Early humans successfully used their creative problem-solving skills to survive and thrive in hostile physical environments. While for many of us creative thinking is no longer necessary to address physical threats...
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<td>Seven Survival Skills (Wagner, 2008)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical thinking &amp; problem-solving</td>
<td>Learning &amp; innovation</td>
<td>Sense making</td>
<td>CEO results:</td>
<td>Communication</td>
<td>Critical thinking &amp; problem-solving</td>
</tr>
<tr>
<td>Collaboration across networks &amp; leading by influence</td>
<td>Novel &amp; adaptive thinking</td>
<td>Social intelligence</td>
<td>Analytical thinking</td>
<td>Analytical thinking</td>
<td>Professionalism/Work ethic</td>
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<td>Agility &amp; adaptability</td>
<td>Cross-cultural competency</td>
<td>Professionalism</td>
<td>Collaborative</td>
<td>Collaboration</td>
<td>Teamwork</td>
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<tr>
<td>Initiative &amp; entrepreneurship</td>
<td>Computational thinking</td>
<td>Oral/Written communication</td>
<td>Strategic thinking</td>
<td>Leadership</td>
<td>Oral/Written communications</td>
</tr>
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<td>Effective oral &amp; written communication</td>
<td>New media literacy</td>
<td>Collaboration</td>
<td>Creative</td>
<td>Creative Problem-Solving</td>
<td>Information technology application</td>
</tr>
<tr>
<td>Accessing &amp; analyzing information</td>
<td>Transdisciplinarity</td>
<td>Opportunity seeking</td>
<td>Analytical/quantitative</td>
<td>Motivation/Drive</td>
<td>Career Management</td>
</tr>
<tr>
<td>Curiosity &amp; imagination</td>
<td>Design mindset</td>
<td>Opportunity seeking</td>
<td>Quantitative</td>
<td>Adaptability</td>
<td>Career management</td>
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<tr>
<td>Sense making</td>
<td>Cognitive load management</td>
<td>Opportunity seeking</td>
<td>Decision-making</td>
<td>Quantitative</td>
<td>Global/Intercultural fluency</td>
</tr>
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<td>Professionalism/Work ethic</td>
<td>Virtual collaboration</td>
<td>Industry-related work experience</td>
<td>Industry-related work experience</td>
<td>Adaptability</td>
<td>(In rank order of importance)</td>
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<td>Professionalism/Work ethic</td>
<td>Novel &amp; adaptive thinking</td>
<td>Character Qualities</td>
<td>Assertive</td>
<td>Leadership</td>
<td>2. Critical Thinking</td>
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<td>Cross-cultural competency</td>
<td>Computational thinking</td>
<td>Curiosity</td>
<td>Disruptive</td>
<td>Social &amp; Cultural Awareness</td>
<td>3. Creativity</td>
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<td>New media literacy</td>
<td>Cross-cultural competency</td>
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<td>Disruptive</td>
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<td>4. People Management</td>
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<td>Transdisciplinarity</td>
<td>Design mindset</td>
<td>Persistence/Grit</td>
<td>Disruptive</td>
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<td>5. Coordinating Others</td>
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<td>Career &amp; Life Skills</td>
<td>Cognitive load management</td>
<td>Adaptability</td>
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<td>6. Emotional Intelligence</td>
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<td>Flexibility &amp; adaptability</td>
<td>Virtual collaboration</td>
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<td>Judgement &amp; Decision-making</td>
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<td>7. Judgment &amp; Decision-making</td>
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<td>Social &amp; cross-cultural interactions, productivity &amp; accountability, leadership &amp; responsibility</td>
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<td>Adaptability</td>
<td>Creativity</td>
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<td>8. Service Orientation</td>
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<td>Adaptability</td>
<td>Communication</td>
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<td>9. Negotiation</td>
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<td>Global mindset</td>
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<td>Adaptability</td>
<td>Collaboration</td>
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**Student results:**
- Communicative (79%)
- Collaborative (80%)
- Flexible (67%)
- Creative (66%)
- Analytical/quantitative (49%)
- Opportunity seeking (54%)
- Globally oriented (45%)
- Technology Savvy (41%)
- Assertive (25%)
- Disruptive (16%) (7%)
- (9%)

**CEO results:**
- Communicative (67%)
- Collaborative (75%)
- Flexible (61%)
- Creative (61%)
- Analytical/quantitative (50%)
- Opportunity seeking (54%)
- Globally oriented (41%)
- Technology Savvy (41%)
- Assertive (25%)
- Disruptive (16%) (7%)
- (9%)

**Foundational literacies:**
- Literacy
- Numeracy
- Scientific Literacy
- Financial Literacy
- Cultural & Civic Literacy

**Competencies:**
- Critical thinking/problem-solving
- Quantitative
- Initiative/risk-taking
- Decision-making
- Industry-related work experience
- Global mindset
- Entrepreneurship

**Character Qualities:**
- Curiosity
- Initiative
- Persistence/Grit
- Adaptability
- Leadership
- Social & Cultural Awareness

**Communication:**
- Analytical thinking
- Collaborative
- Strategic thinking
- Leadership
- Creative Problem-Solving
- Motivation/Drive
- Adaptability
- Quantitative
- Initiative/risk-taking
- Decision-making
- Industry-related work experience
- Global mindset
- Entrepreneurship

(In rank order of importance)
in our natural environment, it is now widely recognized as a crucial professional skill in today’s innovation-driven economy. In 1990, around the time that the United States economy transitioned from an industrial-based economy to a knowledge economy, Carnevale, Gainer, and Meltzer (1990) published a book in which they outlined the skills necessary for success in the workplace. One area was referred to as Adaptability and included creative thinking and problem-solving. This cross-industry study served as an early indicator to a growing trend—the widely recognized fact that creativity skills are among the most sought after skills in today’s workplace. To underscore the pervasiveness of this trend, Table 1 summarizes a sampling of reports that include creativity-related skills among those deemed most essential for success in the 21st century (items in bold denote creativity-related skill areas).

THE PERFECT STORM: PROVISION OF CREATIVITY SKILLS SURPASSED BY DEMAND

The trend is clear; creativity is widely recognized as a crucial 21st-century survival skill. However, it would seem that the demand for creativity exceeds the degree to which this vital work and life skill is available and developed. Some evidence for this assertion follows:

- Human resource managers identified creativity as one of the most desirable workplace skills, yet nearly 70% indicated that they do not provide basic training to improve employee creativity (Casner-Lotto, Rosenblum, & Wright, 2009).
- Forty-two percent of MBA recruiters indicated that creative problem-solving was among their top five employment skills and the second most difficult skill to find in job applicants (Otani, 2015).
- A survey of 1,000 full-time employees showed that 96% of respondents believed creativity is valuable for society and 78% indicated it was important for their careers. However, 78% reported that they wish they had more creative ability and 82% wished they had more exposure to creative thinking as a student (Adobe, 2012).
- A study of 658 university faculty members showed that 87.8% felt creativity was important to their respective field and 79.3% believed their university should promote students’ creative abilities. However, 53.1% reported that they did not include creativity as a learning outcome in their courses (Marquis & Henderson, 2015).

The apparent gulf between the demands for creativity and the degree to which educational and training environments develop this innate human skill represents a potential perfect storm; one that holds serious consequences for individuals, organizations and society as a whole. Imagination is the key to future employment prospects (Frey & Osborne, 2013), thus individuals who do not reach their creative potential may find themselves underemployed or unemployed. Organizations that do not attract and develop creative talent will struggle to survive in an innovation economy (Puccio & Cabra, 2010). And as Toynbee (1964) succinctly stated, “To give a fair chance to potential creativity is a matter of life and death for any society” (p. 4).

In the more than 50 years since Guilford’s address, we have learned much about the subject of creativity. One unequivocal conclusion is the fact that creativity is a trainable skill (Scott, Leritz, & Mumford, 2004). Despite this knowledge, most educational institutions do little to infuse cognitive strategies proven to enhance creative thinking abilities into their courses and curricula. In fact, it could be argued that in an era of standardization and accountability, recent educational practices have done more to promote student conformity than creativity. Ravitch’s (2010) particularly poignant observations of contemporary educational practices highlight the costs associated with an over emphasis on the conformity pole of the creativity-conformity polarity described earlier.

While the potential for a perfect storm exists, the current overt demand for creativity creates an opportunity for educational, organizational, and societal leaders to leverage the robust body of knowledge found in the field of creativity studies. Some educational leaders and institutions of higher education are beginning to seize this opportunity. For example, Sheridan College, Ontario, Canada, has made an institutional commitment to enhance the creativity of all students by adopting creative-thinking practices across the curriculum and by training nearly 300 faculty and staff in Creative Problem-Solving. Sheridan, with a population of more than 20,000 students, serves as a shining example of how knowledge in the field of creativity can be used to enhance educational practices in a way that better prepares students for life and work in the 21st century.

REFERENCES


Creativity as a Survival Skill


