

THE
MYTH

OF THE

MUSE

Supporting Virtues
That
Inspire Creativity

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THE CREATIVITY IMPERATIVE

Much of history is divided into epochs based on the development of human innovation: the rise of agriculture, written language, philosophy, geometry, the printing press, the steam engine, the transistor, vaccines, and the Internet, just to name a few. These innovations and many others have fundamentally shifted not only our worldview but also our capacity to grow. Cultures are defined by their art, music, and literature. Things that are useful—and perhaps more important, that are meaningful, beautiful, and good—can be seen as an outgrowth of the creative process. Creativity is at the heart of the solutions to our most intractable challenges and is, therefore, essential for survival.

Readers would doubtless do anything to spare their children, grandchildren, and complete strangers of future generations the pain of disease, hunger, violence, and oppression that are part of the daily lives of too many people today. Creative solutions in medicine, government, and technology have made modern life immeasurably better than that of our ancestors. But now the torch has passed, and we are not merely the beneficiaries of creativity but the authors of it. In particular, society now depends on creative solutions to address competing demands. For example, how do we cure devastating illnesses and feed the hungry while providing the resources to sustain a growing population? How do we address the global challenge of climate change while still encouraging economic growth and technological innovation? How do we fight global terrorism while respecting commitments to democratic ideals and privacy rights? If the lesson of the 20th century was as Alan Deutschman (2007) asserts, change or die, then the lesson of the 21st century is create or die—and die miserably. And yet, in few areas of human endeavor is there a wider gap between aspiration and reality than in creativity.

The Creativity Chasm

In his 2011 State of the Union Address, President Barack Obama touted the importance of creativity, saying, “In America, innovation doesn’t just change our lives. It is how we make our living” (The White House, Office of the Press Secretary, 2011). A 2010 IBM study of more than fifteen hundred chief executive officers shows that creativity ranked number one on the list of qualities that these CEOs valued in their employees (IBM, 2010). John Hattie’s landmark synthesis of more than nine hundred meta-analyses (2012; Hattie & Yates, 2014) concludes that creativity is strongly linked to academic achievement, particularly when instruction in creativity takes place. The themes that surface again and again from these diverse realms of world politics, business, and education emphasize that innovation and creativity in science and politics, and collaboration among nations and individuals, will be essential for our civilization to conquer future challenges, from poverty to climate change.

The value placed on creativity is well documented, but the reality is that the deck is stacked against the creative process. Creative business leaders are tolerated as long as they avoid the risks required in creative work. Artists, writers, and musicians struggle to earn a living in an increasingly globalized marketplace that values conformity over originality. Educators invested in building creative skills in students risk lowering test scores and jeopardize the jobs they have dedicated their lives to. Policymakers proposing innovative solutions to domestic and international problems are often discounted by a system mired by gridlock. For example, Adam Grant (2016) finds that in a variety of fields from the classroom to the boardroom, the behaviors essential for creativity—risk taking, testing boundaries, challenging rules—are least associated with short-term success and the approval of teachers and bosses. When schools and public officials who fund them (unintentionally) undermine creativity among students, teachers, and administrators, they not only diminish the beauty of the earth but also threaten our collective ability to preserve it. Schools rarely undermine creativity intentionally. After all, vision and mission statements extolling the virtues of creativity are ubiquitous. But when we compared the good intentions of schools as they aspired to enhance creativity with their actual behavior (Reeves, 2015), we found an enormous gap between rhetoric and reality.

To better understand the gap between how much educational systems claim they value creativity and how much they actually do, as well as to better understand the science of creativity as whole, we must turn to the research.

Research on Creativity

What with the aforementioned climate change and global terrorism to contend with—along with myriad other challenges we face in the modern world—we assert that creativity is essential to the survival of civil society and the planet. If we are to successfully respond to this great responsibility we now face, then we must first understand what creativity truly is. It is not a matter of applying decoration and glitter to an otherwise mundane presentation. It is not a curricular afterthought, with time and resources allotted to students and teachers once their standardized tests have been completed. Creativity is also not merely a form of entertainment to be enjoyed by the wealthy or performed by artists who possess some inherent creative genius.

In exploring what creativity *is*, we are committed to an evidence-based approach to a topic in which folklore often takes precedence over research. Pervasive myths have led to gross misconceptions in our society about what creativity is, where it comes from, and how it can occur. Our understanding of who creative people are—or can be—is often reduced to caricatures, clichés, or tropes. The reality is much less simplistic and opens up creativity to many more possibilities.

While since the mid-1990s, we have seen many studies devoted to the subject of creativity, rarely have these studies been cited or explained to a general audience. Indeed, in surveying business or self-help literature, the same stories and anecdotes are dredged up time and time again with the same reliability of ghost stories told around a campfire. Staples of marketing and science literature have retold the stories of Albert Einstein, Pablo Picasso, and Bob Dylan for decades without citing the source or researching for accuracy.

Rather than cherry-picked anecdotes and personal war stories, our approach is based on the preponderance of the evidence, including observations, interviews, quantitative analyses, qualitative observation, meta-analyses, and syntheses of meta-analyses. We should note that, as you read, you will see quoted material from students. Student quotations are composites of authentic conversations we had with students and are used with the permission of students and their parents.

In appendix A (page 99), we will share our research on the ways creativity is assessed in schools. However, we offer this new research as only a pebble on the mountain of research on the subject. We have sought the insights of a wide variety of scholars who employ different methods. Some are connoisseurs of creativity, offering insights born of decades of thought and reflection, while others are systematic observers. Still others take a quantitative approach, examining the creative work products that

result under specifically described conditions. We also consider syntheses of the research. It is therefore not a single approach to the research that is definitive, but rather the preponderance of the evidence that will best serve the reader seeking the truth about creativity.

Some of the research findings may seem obvious, though we've often been surprised at the counterintuitive nature of some results. Although scholars disagree on many issues, there is an emerging consensus on the science of creativity. This includes long-term historical studies extending back two centuries or more, and the latest in 21st century research on human cognition and brain function (Csikszentmihalyi, 1996; Grant, 2016; Johnson, 2010).

Virtues of Creativity

Amid the platitudes and botched science, certain findings are consistent, coalescing around a handful of essential ideas. By defining and examining these themes, it is easier to conceptualize the underlying patterns of the creative process as a whole. These themes, or *virtues* as we have come to call them, are neither absolute nor all encompassing. Nevertheless, there is a substantial body of research that supports focus as a key to learning, leadership, and change. Just as an expert actor might think of a thousand or more ways to develop and portray a character, the vast majority of this artist's work comes down to a very few considerations: voice, body, tone, feeling, and instruction from the director. We could add historical context and contemporary relevance. Ultimately, Brooks would argue, presence and engagement are the most important qualities in bringing a character to life. Our focus on seven virtues, therefore, is a means of accessibly communicating a complex and vast field. If you find additional virtues in your quest to understand creativity, we encourage you on such a journey. We have chosen to focus on the following seven virtues.

1. **Curiosity:** This is the hunger for knowledge. It is the passion that drives us to look around each corner and turn every page. Curiosity is fundamental, and while the simple act of asking a question and seeking the answer is not necessarily inherently creative, it is certainly a prerequisite to creative activity. It can also be a drive that is too easily quelled when the answer to almost any question is seemingly a Google search away. We will consider how you can be your own explorer in a world awash in easy information. Creativity challenges boundaries. Critical thinking challenges assumptions. Together, they are the twin attributes that propel new ideas.

2. **Versatility:** Having a creative vision is not always a matter of sticking to your guns. Adapting one's work to a changing set of circumstances can often lead to powerful breakthroughs. We explore how unlimited freedom can be counterproductive in innovation and how constraints both real and imaginary can push the mind to places it would never go on its own.
3. **Synthesis:** Instead of viewing creativity as the act of pulling original ideas out of the ether, we consider how creativity is actually the joining of disparate notions and sources together into something greater than the sum of its parts. We will explore the myth of the lone genius and review the anatomy of invention. We will also look at the controversial issue of intellectual property laws and ask the important question, Who owns ideas?
4. **Discipline:** Ideas, art, and invention are not the product of mystical inspiration. Instead, they are almost always the consequence of hard work. We will examine the consistent role of ritual and habit in the work of many of the greatest writers, artists, and thinkers. We will discuss tools you can use to break through blocks and rough patches as well as show you how to push through your inner critic and the voice of the desperate procrastinator.
5. **Collaboration:** Some of the most fruitful inventions and artistic endeavors have been the work of creative individuals working in tandem (Shenk, 2014). While some artists and thinkers have staunchly preferred to work in isolation, the realities of life often require working collaboratively with our fellow human beings. We will identify fundamental principles of successful collaboration while also examining how to avoid common pitfalls of human interaction.
6. **Experimentation:** Great ideas are rarely the result of eureka moments. Rather, the creative process is often one marked by trial and error. We argue that the nature of art and science are more similar than one might suspect.
7. **Tenacity:** Creating something new means upsetting the prevailing order of things. The role of a revolutionary is rarely easy. We look realistically at the consequences and rewards of struggling to promote new ideas within a system that resists creativity and experimentation, and is intolerant of error. We

also examine how the grit and perseverance that are an essential prelude to creativity benefit students.

You can find successful artists and innovators who directly violate each of our virtues at some point. There are famous artists who scorn collaboration and great innovators who seem to have stumbled into instant rewards. For example, Ludwig van Beethoven refused entreaties from well-meaning critics to “improve” the dissonant chords in his symphonies (Greenberg, 1996), and Alexander Fleming’s discovery of penicillin was a fluke based not on collaboration, but on idiosyncratic and unplanned observation (Brown, 2004). These are exceptional cases, however, and do not undermine our essential principles. We must ensure these principles are encouraged in classrooms through individual lessons and the school culture. To do so, we provide some practical advice for educators and policymakers at every level.

About This Book

This is not a recipe book for the next great thing, nor do we claim to divulge secrets that the great geniuses of the world have been keeping from mere mortals. Our intent is to start a conversation about what creativity is, the forms it can take, and our understanding of its function. We believe that understanding and learning the utility of our seven virtues is important to anyone who cares about fostering creativity within themselves or throughout their organization. As such, we envision this text being used as a book study title for collaborative teams, whole schools, or entire districts that individual educators, administrators, and other stakeholders read and then discuss during in-service, collaborative team meetings, professional development time, or any other collaborative setting a school or district uses for stakeholders to communicate about and work toward common goals. Leaders may choose to ask participants to read the book in its entirety before discussion or discuss predetermined chapters over the course of multiple meetings, as is practical with regard to their group’s meeting time and schedule. We have provided reflection questions at the end of each chapter to facilitate those discussions. Additionally, we have included a number of specific examples in mathematics, art, music, theater, social studies, language arts, and other disciplines. However, in doing so, we risk two errors. First, if we make the examples too simplistic, we will alienate our readers who are subject-matter experts. Second, if we make the examples too complex, we will alienate our readers who are unfamiliar with that particular discipline. So, we have deliberately chosen to make the second error, hoping that readers who don’t find a particular example to their liking will quickly skim ahead and find an example that engages both their intellect and their academic preferences.

While this book is conducive to group study and discussion, individual readers will also benefit greatly from engaging with the content and reflection questions on their own. Readers who are interested in creativity may not be those most likely to take a linear approach to this or any book. Some readers will start with the “References and Resources” section to identify the intellectual underpinnings of the authors’ arguments; others will skim the chapter titles for those that most resonate; others just want to get to the point. To help you navigate, we provide a brief summary of the book’s structure.

Chapter 1 explores the common misconceptions about creativity and the illusions our culture seems to embrace regarding creativity. We argue the ways in which many of these concepts are, in fact, more myth than reality. Chapters 2 through 8 each focus on one of the seven virtues of creativity. We illustrate how each is important to creativity and provide insights for inspiring and cultivating creative habits. Once you and your team have reflected on each of the facets that contribute to creativity and considered the suggested classroom applications, you’ll no doubt be wondering how such practices can be assessed. We recognize the term *creativity assessment* may seem like an oxymoron. How can such a subjective concept be objectively evaluated? In appendix A, we provide evidence from our own research as well as a metarubric practitioners can use to support creativity assessment, evaluate their existing assessments, and identify areas in which those assessments can be adjusted to better support creativity in classrooms. Appendix B offers a few helpful tips for leaders as they guide teams in their work toward creative virtues.

Preconceptions of Creativity

Please take a few moments to consider your own preconceptions about creativity by identifying whether you agree or disagree with the statements in figure I.1 (page 8). Whether you already consider yourself a creative type or the last time you flexed those muscles was in creating an art project out of macaroni at summer camp, we know this is true: every reader approaches the subject of creativity with certain assumptions. We hope that your candid responses to these statements will help you identify and confront many of those assumptions.

However certain you may be of your agreement or disagreement with these statements, we believe you’ll be surprised by how the growing body of evidence about creativity will challenge your preconceptions.