Nurturing a Creative Mindset

Ismet Mamnoon

International Center for Studies in Creativity, imamnoon@yahoo.com

Advisors
Dr. Cyndi Burnett

To learn more about the International Center for Studies in Creativity and its educational programs, research, and resources, go to http://creativity.buffalostate.edu/.

Recommended Citation
Nurturing a Creative Mindset
by
Ismet Mamnoon

An Abstract of a Project
in
Creative Studies

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Science

May 2013

Buffalo State
State University of New York
Department of Creative Studies
Anyone can make a shift to a more creative mindset by making small but deliberate changes in their thinking and attitude. The Creativity Cards provide a number of simple activities and prompts that heighten awareness around creativity skills and help individuals make the changes that make them more mindful, open to novelty, tolerant of ambiguity, playful, visionary, able to sense gaps, flexible, fluent and original when generating ideas and willing to allow for incubation. These skills are identified through a detailed review of skill sets related to Creative Problem Solving and Torrance’s creativity skill set.
Nurturing a Creative Mindset

A Project in
Creative Studies

by

Ismet Mamnoon

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Science

May 2013
Nurturing a Creative Mindset

A Project in
Creative Studies

by

Ismet Mamnoon

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Science
May 2013

Dates of Approval:

______________________________________________

Dr. Cyndi Burnett
Assistant Professor

______________________________________________

Ismet Mamnoon
Student
Acknowledgement

I would like to thank the wonderful people who made this project possible:
   My family who provided endless support as they endured without complaint
   my single-minded dedication to getting this project finished and, gave up precious
   family time and home cooked meals. Without them the journey of the last four years
   would not have been possible.
   Dr. Cyndi Burnett who was endlessly patient and wise as she guided me
   through this project and, gently reigned me in when my implementer self went
   charging down the wrong path.
   Ms. Erica Swiatek who contributed wonderful energy and ideas to this project.
   Dr. John Cabra who provided me with the necessary analysis tools to make
   sense of data.
   All of the faculty of the International Center for Studies in Creativity for being
   incredibly inspirational change leaders who live by what they teach and share without
   reservation all their knowledge and expertise for the benefit of all the students in the
   program.
   My fellow students who have become my creative family and who respond
   with unstinting support, ideas and, humor whenever I reach out for help.
# Table of Contents

Section 1 – Background of Project ........................................ 1
Section 2 – Pertinent Literature ........................................ 5
Section 3 – Process Plan .................................................. 22
Section 4 – Outcomes ..................................................... 28
Section 5 – Key Learnings ................................................ 31
Section 6 – Conclusion .................................................... 40
References ........................................................................ 43
Appendix A - Website Content .......................................... 45
Appendix B - Sample of Creativity Card activities ..................... 50
Appendix C - Feedback From Test Group ................................ 53
Appendix D - Consensus Analysis for Creativity Skills Card Sort .... 59
Appendix E - Photographs of Visual Organization of Process ......... 62
List of Tables

Table 1 - Supporting Skills for Divergent Thinking  8
Table 2 – Supporting Skills for Convergent Thinking  8
Table 3 - Comparison of CPS Process-oriented Skills and Amabile’s  16
Thinking Styles With Torrance’s creativity skills
Table 4 - Comparison of CPS process-oriented skills and Torrance’s thinking  17
styles with Amabile’s creativity skills
Table 5 - Comprehensive Set of Creativity Skills  19
Table 6 - Results of Consensus Analysis  24
Table 7 - Too Much Versus Not Enough Information  36
Table B1 – Visioning Activities  51
Table B2 – Playfulness Activities  51
Table B3 – Openness to Novelty Activities  52
Table D1 – Card Sort Ranking for Skills  60
Table D2 – Ranking Distribution and Consensus  61
Section One: Background to the Project

Purpose and Description

This goal of this project was to create a compilation of techniques with which individuals could nurture a more creative mindset in themselves. In the course of working with many groups over a period of four years, I have realized that a creative mindset is a critical ingredient for lasting positive change and personal growth. I have also found that people often believe that creativity is an ability that you are either born with or without. Experts agree that creativity is a mindset and skill set that can be learned and enhanced through practice. In *Out of Our Minds: Learning to be Creative* (2011) Ken Robinson stated:

> It’s often thought that creative people are either born creative or not, just as they may have blue or brown eyes, and there is not much they can do about it. The fact is, there is a lot you can do to help people become more creative. If someone tells you they cannot read or write, you don’t assume that they are not capable of reading and writing, but that they haven’t been taught how. It is the same with creativity. When people say to me that they are not creative, I assume they just haven’t yet learnt what is involved. (Robinson, 2011, p. 4)

It takes daily practice to cultivate a creative mindset. Lasting change can be achieved through the deliberate practice of affective and cognitive skills that are related to a creative mindset. The first stage of this project was to identify the key characteristics of a creative mindset. These characteristics would include the affective and cognitive skills that could be developed through practice. The final product would provide a number of ways to develop these skills through simple but
effective techniques that would, over time, result in big changes. The target audience would be any individual who wishes to transition into a creative mindset.

A creative mindset is one in which an individual keeps an open mind, sees challenges as opportunities to grow, regards failures as opportunities to learn, is intrinsically motivated to expend effort, is affirmative, curious and adaptable. People who have a creative mindset often instinctively develop problem-solving techniques that are close to the formal Creative Problem Solving process. They are able to view a situation from many different perspectives, generate multiple options, are open to non-traditional ideas and will support and develop these ideas to create solutions that are innovative.

A creative mindset lies at the core of a creative person. Without the creative mindset, an individual can still engage with the creative process and produce novel and useful outcomes.

…ultimately creative tools and techniques won’t make you “more creative.” They’ll make you more creatively effective, and there’s a difference.

Becoming more creative means you change who you are and how you are being, core creative improvement, really, requires personal transformation.

The good news, it’s possible. (Fraley, 2013)

When an individual combines a creative mindset with the creative process, the results are breakthrough outcomes that are more innovative and paradigm shifting. A creative mindset also changes the way an individual handles interpersonal relationships. A non-judgmental, affirmative approach to relationships results in healthier and more productive interactions. Parents with a creative mindset are able
to circumvent family conflict and overcome dysfunction in creative ways. These parents are also able to nurture a creative mindset in their children, thereby giving them essential life skills.

**Rationale for the project**

The benefit of acquiring and nurturing a creative mindset in individuals is twofold. The benefit to the individual is that the transition to a more creative mindset will result in personal growth, a positive attitude to failure, an openness to challenges, a tolerance for ambiguity, flexibility, adaptability, and lifelong learning. As individuals we also influence the next generation as our children follow our lead and learn from our behavior. The global impact of nurturing a creative mindset in individuals is that it creates a culture of collaboration. A community that is populated with individuals who have a creative mindset can collectively solve problems and effect positive change in the world.

I believe that creativity is the key to fulfilling one’s potential. Through the use of creative process coupled with a creative mindset, we are able to realize and actualize our purpose. I have overcome many challenges in my life through creative thinking and I believe that it is an essential life skill. Having a creative mindset has also changed the quality of my interpersonal relationships. It has provided me with the tools for understanding and communicating better. It allows me to have an alternative perspective and has helped me resolve interpersonal conflict effectively. The greatest benefit of the creative mindset has been that it puts me in charge of my success. I do not consider my success in life to be a result of a given set of talents, or a benefit of knowing the right people or good fortune. I am in control because I
realize that my success in life is a function of my effort, my persistence, my resilience, and my creativity. Since I can determine the degree of effort I extend and I can develop the other qualities through deliberate practice, I therefore control my chances of success.

The benefit of this project is that it would allow me to pinpoint those techniques that work in order to make a shift to a creative mindset and it would allow me to share these techniques with others. I believe that acquiring a creative mindset significantly improves the quality of one’s life.

As a parent, I am always thinking about how to nurture a creative mindset in my children. I have used many different techniques and through the process of trial and error, I have discovered that some approaches work better than others. Through this project I hoped to identify a more comprehensive and effective list of techniques drawn from research conducted in the field of creativity and psychology. My personal commitment to becoming a better parent was one of the reasons why I entered the field of creativity. I have found that through creativity, I have been able to provide my children with an upbringing that has resulted in two independent, resilient, hard working, creative young adults who are able to face challenges with equanimity, recover from failure with learning, solve complex problems, take responsibility for their own success and facilitate desirable outcomes for themselves and others. I want to give other parents the ability to do the same with their own children and I believe that the first step towards making that possible is to encourage parents to become creative role models. The final product allows parents to nurture their own creativity and model creative behavior for their children.
Section Two: Pertinent Literature

In order to find resources that would provide the research-based information that was required for this project, I decided to draw from the fields of creativity and psychology. Thought leaders that I identified were Teresa Amabile, E. Paul Torrance, Gerard Puccio, Marie Mance and Mary Murdock from the field of creativity, and Carol S. Dweck from the field of psychology. I selected these thought leaders because they have made significant contributions to the research and discussion of creativity skills and the psychology of mindset. My aim was to review the literature in a journalistic manner, with an emphasis on seeking facts and pertinent data with reference to the following questions:

- What are the key components of a creative mindset?
- Is it possible to develop a creative mindset?
- What might be all the ways to develop a creative mindset?

Growth Mindset

In order to understand the nature and mutability of mindset I started my review of literature with Mindset (Dweck, 2008). This book provided me with some key insight into my own personal motivation and drive. From my personal history I recognized the period in which I made the shift from a fixed mindset to a growth mindset. I was able to understand how impactful this shift in mindset had been in my life. This book also substantiated my belief that a shift in mindset was possible, whether it was a shift from a fixed mindset to a growth mindset, or from a critical mindset to a creative mindset:
Scientists are learning that people have more creative capacity for lifelong learning and brain development than they ever thought…People may start with different temperaments and different aptitudes, but it is clear that experience, training and personal effort take them the rest of the way. (Dweck, 2008, p. 5)

Dweck also stated that “You have a choice. Mindsets are just beliefs. They’re powerful beliefs, but they are just something in your mind, and you can change your mind” (Dweck, 2008, p. 16).

Dweck introduced a growth mindset as:

…the belief that your basic qualities are things you can cultivate through your efforts. Although people may differ in every which way – in their initial talents and aptitudes, interests, or temperaments-everyone can change and grow through application and experience. (Dweck, 2008, p. 7)

The reason why I was drawn to Mindset (Dweck, 2008) was because a growth mindset is the precursor to a creative mindset.

The other thing exceptional people seem to have is a special talent for converting life’s setbacks into future successes. Creativity researchers concur. In a poll of 143 creativity researchers, there was wide agreement about the number one ingredient in creative achievement. And it was exactly the kind of perseverance and resilience produced by the growth mindset. (Dweck, 2008, pp. 11-12)
My review of this book was focused on identifying techniques that would help to develop a growth mindset and by inference, also contribute to making a shift to a creative mindset. I was disappointed that few specific techniques have been identified in the book. There are general approaches and some guidelines that have been incorporated in the final product.

**Creative Mindset**

In order to determine which skills related to a creative mindset can be included as key components of a creative mindset my research continued within the field of creativity. I undertook a detailed review of creative skill sets ascribed to the Creative Problem Solving (CPS) process in *Creative Leadership* (Puccio et al., 2011). Subsequently I compared these skills to those outlined in *The Search for Satori and Creativity* (Torrance, 1979) and in *Growing up Creative* (Amabile, 1989).

**Creative Problem Solving skills.** In *Creative Leadership* (Puccio et al., 2011) and *The Nature of Human Intelligence* (Guilford, 1967) the key skills that support divergent and convergent thinking are identified as:

- Flexibility: getting variety in kinds or categories of ideas and responses.
- Fluency: getting a large number of ideas or responses.
- Elaboration: adding to or developing existing ideas or responses.
- Originality: getting new, novel or different ideas or responses.
- Developing: strengthening, improving, fleshing out option so it is doable.
- Prioritizing: determining rank order among options.
- Sorting: categorizing or grouping by some implicit/explicit schema.
• Supporting: examining for positive attributes, identifying and putting them forward to be considered further.

• Screening: filtering, keeping some and discarding others for particular reasons.

(Puccio et al., 2011, pp. 66-67)

I related these skills to the principles of divergent and convergent thinking (Puccio et al., 2011) to check for completeness.

Table 1

Supporting Skills for Divergent Thinking

<table>
<thead>
<tr>
<th>Principles of divergent thinking</th>
<th>Supporting skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defer judgment: to hold evaluation until a later time</td>
<td>Keeping an open mind: suspending disbelief and entertaining the potential value of every alternative</td>
</tr>
<tr>
<td>Go for quantity: to generate many possibilities</td>
<td>Fluency: getting a large number of ideas or responses</td>
</tr>
<tr>
<td>Make connections: to build on ideas and look for ideas in other fields</td>
<td>Flexibility: getting variety in kinds or categories of ideas and responses Elaboration: adding to or developing existing ideas or responses</td>
</tr>
<tr>
<td>Seek novelty: to find options that have never been considered</td>
<td>Originality: getting new, novel or different ideas or responses</td>
</tr>
</tbody>
</table>

Note: Adapted from Creative Leadership (Puccio et al., 2011, pp. 107-108).

Table 2

Supporting Skills for Convergent Thinking

<table>
<thead>
<tr>
<th>Principles of convergent thinking</th>
<th>Supporting skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applying affirmative judgment: to carefully consider the strengths of an option rather than only focusing on its shortcomings</td>
<td>Supporting: examining for positive attributes, identifying and putting them forward to be considered further</td>
</tr>
<tr>
<td>Keep novelty alive: to entertain highly original options that you might have otherwise eliminated</td>
<td>Keeping an open mind: suspending disbelief and entertaining the potential value of every alternative</td>
</tr>
<tr>
<td>Improve ideas: to strengthen options by</td>
<td>Developing: strengthening, improving,</td>
</tr>
</tbody>
</table>
addressing shortcomings as challenges and identifying solutions to make the idea stronger

Check your objectives: to consider what is realistic or useful

Stay Focused: to invest the necessary thought and energy to ensure that the best alternatives are being selected and then developed

<table>
<thead>
<tr>
<th></th>
<th>fleshing out option so it is doable</th>
<th>Screening: filtering, keeping some and discarding others for particular reasons</th>
<th>Sorting: categorizing or grouping by some implicit/explicit schema</th>
<th>Screening: filtering, keeping some and discarding others for particular reasons</th>
<th>Prioritizing: determining rank order among options</th>
</tr>
</thead>
</table>

Note: Adapted from *Creative Leadership* (Puccio et al., 2011, pp. 107-108).

*Keeping an open mind* was not identified as a key skill to support the principles of divergent thinking in *Creative Leadership* (Puccio et al., 2011). However I believe it is a necessary skill to support deferring judgment and keeping novelty alive and therefore I included it here.

*Improve ideas* was not identified as a separate principle of convergent thinking in *Creative Leadership* (Puccio et al., 2011). It was mentioned as a part of *stay focused* however I believe that it is a key step in the convergent phase and have identified it as a separate principle.

The above skills represent what I shall refer to as CPS process-oriented skills. These skills would be considered for development as part of the final product. The CPS skill set also included thinking skills which are associated with the specific stages of the creative process. The thinking skills are higher order skills that require a level of expertise in the understanding and use of the CPS process. The purpose of this project was to prepare individuals to engage in a creative way with life and challenges, and therefore, it was outside the scope of this project to enable individuals to use the CPS process and the associated thinking skills of experts. For these
reasons, the thinking skills (Puccio et al., 2011) were not included in the development of the final product.

In addition to process-oriented skills identified above, I also wanted to identify the affective skills that support the Creative Problem Solving process and could be developed through directed practice.

In (Puccio et al., 2011) these skills were defined as:

- Openness to Novelty: Being able to entertain ideas that at first seem outlandish and risky.
- Tolerance for Ambiguity: Being able to deal with uncertainty and avoid leaping to conclusions.
- Tolerance for Complexity: Being able to stay open and persevere without being overwhelmed by large amounts of information, interrelated and complex issues, and competing perspectives. (Puccio et al., 2011, p. 64)
- Mindfulness: Attending to thoughts, feelings, and sensations relative to the present situation.
- Dreaming: To imagine as possible your desires and hopes.
- Sensing Gaps: to become consciously aware of discrepancies between what currently exists and is desired or required.
- Playfulness: Freely toying with ideas.
- Avoiding Premature Closure: Resisting the urge to push for a decision.
- Sensitivity to Environment: The degree to which people are aware of their physical and psychological surroundings.
• Tolerance for Risks: Not allowing yourself to be shaken or unnerved by the possibility of failure or setbacks. (Puccio et al., 2011, p. 73)

Together, the process-oriented skills and the affective skills provided a comprehensive CPS skill set.

Torrance’s creativity skills. E. Paul Torrance is often referred to as the “Father of Creativity” (Childs, 2003) because of his significant contributions to the field through research and writing. In *The Search for Satori and Creativity* (Torrance, 1979), Torrance compared the creative skill sets that are drawn from the CPS process with those drawn from Synectics, Edward de Bono’s work, and other creativity models. The comprehensive creativity skills as summarized from *The Search for Satori and Creativity* (Torrance, 1979) were:

• The Problem: The ability to recognize the “real” problem, the ability to get to the essence of the problem and be able to broaden, open up and redefine the problem (Torrance, 1979, p. 13).

• Produce and Consider Many Alternatives: The ability to make a “deliberate effort to look for additional alternatives when you are satisfied with one or more of the alternatives that you already have…to avoid accepting too easily the alternatives that occur immediately” (Torrance, 1979, p. 32).

• Be Original: “Getting away from the obvious and commonplace or breaking away from habit bound thinking” (Torrance, 1979, p. 40).

• Highlight the Essence: “Involves at the same time synthesis, discarding erroneous or irrelevant information, abandoning unpromising facts or
solutions, refining ideas, establishing priorities, and letting a single
problem or idea become dominant” (Torrance, 1979, p. 52).

• Elaborate - but Not Excessively: “The ability to elaborate and work out plans, implement and sell solutions.” The amount of elaboration required is defined as “It must be elaborated to become of value” and not to the degree “which can become so excessive that people will be overwhelmed by the detail or the expense involved” (Torrance, 1979, pp. 64-65).

• Keep Open: When “faced with any incompleteness or unsolved problem” avoid the tendency to “jump to some conclusion immediately…before the person has taken the time to understand the problem, considered important factors involved in the problem, and thought of alternative solutions” (Torrance, 1979, p. 74).

• Be Aware of Emotions: “Acceptance of the idea that emotional, nonrational, or suprarational factors are more important in creative thinking than purely cognitive, rational factors…these emotional factors must be understood and used for breakthrough ideas” (Torrance, 1979, p. 86).

• Put Your Ideas in Context: “To put parts that are experienced into their bigger context…putting them together in meaningful ways” (Torrance, 1979, p. 100).

• Combine and Synthesize: The ability to make “fresh and relevant association of thoughts, facts and ideas, etc. into a new configuration, which pleases – which has meaning beyond the sum of the parts – which provides a synergistic effect” (Torrance, 1979, p. 116).
• Visualize it Richly and Colorfully: “The ability to visualize objects, concepts, systems, organizations, processes – the earth, the universe”. “It is important that these images visualized be varied, strong, vivid, lively, and intense…colorful, exciting, unusual, and appealing to the various sense modalities” (Torrance, 1979, p. 126).

• Enjoy and Use Fantasy: The ability to use fantasy to create analogies and explore imaginatively so that it promotes a deeper understanding or projection of a situation or experience (Torrance, 1979, pp. 138-139).

• Make it Swing - Make it Ring!: The ability to experience “something through two or more sense modalities…to help a person attain exciting insights that he or she would otherwise miss, especially in processing new information” (Torrance, 1979, p. 150).

• Look at It Another Way: “The ability to see things in different visual perspectives and to look at things from different points of view…to return to a commonplace object or situation and perceive it in different and exciting ways” (Torrance, 1979, p. 160).

• Visualize the Inside: “To be able to visualize beyond exteriors and pay attention to the internal, dynamic workings of things” (Torrance, 1979, p. 168).

• Breakthrough – Extend the Boundaries: “Redefining or rewording problems for creative attack…to find the question which, if answered would lead to the creative solution…get away from the ‘more and better of the same’ recipe” (Torrance, 1979, p. 182).
• Let Humor Flow – and Use It: The ability to use humor to result in “the production of new, original, humorous remarks, stories, jokes, plays, and the like” to result in “an atmosphere of play” (Torrance, 1979, p. 188).

• Get Glimpses of Infinity: To understand that “creativity is infinite. It is shaking hands with the future. And genius is a creative mind adapting itself to the shape of things to come” (Torrance, 1979, p. 194).

Torrance’s work included many creativity skills which extended beyond the process-oriented skills identified in the review of the Creative Problem Solving skills.

**Amabile’s creative thinking styles.** Amable’s creative thinking styles were drawn from *Growing Up Creative: Nurturing a Lifetime of Creativity* (Amabile, 1989):

• “‘Breaking set’: breaking out of your old patterns of thinking about something” (Amabile, 1989, p. 48).

• “Understanding complexities: appreciating the fact that most things are not simple” (Amabile, 1989, p. 48).

• “Keeping options open as long as possible” (Amabile, 1989, p. 48).

• “Suspending judgment: generating as many ideas as possible, without evaluating them right off the bat” (Amabile, 1989, p. 49).

• “Thinking broadly: trying to see as many relationships as possible between different ideas” (Amabile, 1989, p. 49).

• “Remembering accurately: the more you can remember, the more ingredients you have at your disposal for generating ideas” (Amabile, 1989, p. 49).
• “Breaking out of “scripts”: breaking out of well-worn habits for doing things” (Amabile, 1989, p. 49).

• “Perceiving freshly: trying to see things differently from the way you or other people normally see them” (Amabile, 1989, p. 49).

• “Using tricks, or little rules of thumb that can help you think of new ideas: some examples, ‘Making the familiar strange, and the strange familiar’; ‘Play with ideas’; ‘Investigate paradoxes’” (Amabile, 1989, p. 49).

**Comparative Analysis**

The deep dive into examining the different skill sets identified by Torrance and Amabile resulted in the insight that while there were some skills or styles that were specific to the individual researcher, there was also significant overlap. This overlap extended across the CPS based skill set. I became aware that there are many skills and traits that are taken for granted in the CPS model which have been explicitly identified in Torrance’s and Amabile’s work. Also in several instances, the skills identified by Torrance and Amabile were complex skills – involving more than one process or affective skill working together.

In order to compare the skill sets that derive from CPS and the work of Torrance and Amabile, I used the definitions and the supporting skills to break out the complex skill sets into their component pieces. I also reviewed the language and nomenclature used by each source to determine where two skill sets were similar in purpose, although they were referred to by different names. The analysis of the overlap of skills between the three sources – CPS, Torrance and Amabile is shown in the tables 3 and 4:
<table>
<thead>
<tr>
<th>Creative Problems Solving Skill</th>
<th>Produce and consider many alternatives</th>
<th>Be original</th>
<th>Highlight the essence</th>
<th>Elaborate – but not excessively</th>
<th>Be aware of emotions</th>
<th>Put your ideas in context</th>
<th>Combine and Synthesize</th>
<th>Visualize it – richly and colorfully</th>
<th>Enjoy and use fantasy</th>
<th>Make it swing make it ring!</th>
<th>Look at it another way</th>
<th>Visualize the inside</th>
<th>Breakthrough – extend the boundaries</th>
<th>Let humor flow – and use it</th>
<th>Get glimpses of infinity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluency</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elaboration</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Originality</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developing</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prioritizing</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sorting</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supporting</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screening</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keeping Open</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mindfulness</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dreaming</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensing Gaps</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playfulness</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoiding premature closure</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitivity to environment</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance for risk</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance for ambiguity</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance for complexity</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Openness to Novelty</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breaking set</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding complexities</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keeping options open</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspending judgment</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thinking broadly</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remembering accurately</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breaking out of scripts</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceiving freshly</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using tricks</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 4

*Comparison of CPS process-oriented skills and Torrance’s thinking styles with Amabile’s creativity skills*

<table>
<thead>
<tr>
<th></th>
<th>Breaking set</th>
<th>Understanding complexities</th>
<th>Keeping options open</th>
<th>Suspending judgment</th>
<th>Thinking broadly</th>
<th>Remembering accurately</th>
<th>Breaking out of Scripts</th>
<th>Perceiving freshly</th>
<th>Using tricks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elaboration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Originality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prioritizing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sorting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supporting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screening</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keeping Open</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mindfulness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dreaming</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensing Gaps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playfulness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoiding premature closure</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitivity to environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance for risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance for ambiguity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance for complexity</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Openness to Novelty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Problem</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Produce and Consider Many Alternatives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Be Original</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highlight the Essence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elaborate – but Not Excessively</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keep Open</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Be Aware of Emotions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Put Your Ideas in Context</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combine and Synthesize</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visualize it Richly and Colorfully</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enjoy and Use Fantasy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make it Swing Make it Ring!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Look at It Another Way</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visualize the Inside</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breakthrough – Extend the Boundaries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Let Humor Flow - and Use It</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Get Glimpses of Infinity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
It was not feasible that every skill identified from the three sources be included in the final product. The criteria that was used to determine which skills would be included in the final product are:

- The skill should support the CPS process and/or,
- The skill should be common to at least two sources or,
- There is a compelling reason to include the skill in the final selection.

There are two skills which have no overlap but I felt warranted inclusion in the final list. These are “Combine and Synthesize”, and “Put Ideas in Context” from the Torrance creativity skills. I believe these are higher level skills that support the CPS process. Combine and synthesize is the skill required to make forced connections in the divergent phase of the process. This ability allows for greater variety in ideas generated and also results in paradigm breaking ideas. The ability to put ideas in context refers to looking at the big picture. This skill is critical to the CPS process as it allows one to navigate through a challenge without getting lost in the complexity. It also creates the framework that serves as the backdrop for organizing data, ideas and action steps.

As a conclusion to the review of literature, I have created a working definition for each skill based on a collation of the definitions from the three sources as necessary to capture the essence of that skill. Some of the skills have also been given new titles in order to appeal to individuals who may have had little experience with creativity. The comprehensive set of skills is shown in Table 5.
Table 5

*Comprehensive Set of Creativity Skills*

<table>
<thead>
<tr>
<th>Skill</th>
<th>Being able to…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility – now includes Look at it Another Way</td>
<td>generate a variety in of ideas and responses, across different categories and to look at things from different points of view.</td>
</tr>
<tr>
<td>Fluency</td>
<td>generate a large number of ideas or responses and to make a deliberate effort to continue to generate alternatives even when you are satisfied with what you have.</td>
</tr>
<tr>
<td>Elaboration</td>
<td>add to an existing idea in order to build on it and stretch it further.</td>
</tr>
<tr>
<td>Originality</td>
<td>get away from the obvious and commonplace to generate novel ideas and responses.</td>
</tr>
<tr>
<td>Developing</td>
<td>add detail to, strengthen and improve an idea in order to make it more acceptable and doable.</td>
</tr>
<tr>
<td>Prioritizing</td>
<td>determine rank order among options.</td>
</tr>
<tr>
<td>Sorting</td>
<td>categorize or group information by some implicit or explicit schema.</td>
</tr>
<tr>
<td>Supporting</td>
<td>examine an idea or response for potential value and present an affirmative response.</td>
</tr>
<tr>
<td>Screening</td>
<td>filter and discard irrelevant, erroneous and unpromising options in order to highlight those that are more promising.</td>
</tr>
<tr>
<td>Keeping Open – now combined with Openness to Novelty</td>
<td></td>
</tr>
<tr>
<td>Mindfulness</td>
<td>Attending to thoughts, feelings, and sensations relative to the present situation.</td>
</tr>
<tr>
<td>Dreaming – now called Imagining</td>
<td>visualize a rich image of a desired future.</td>
</tr>
<tr>
<td>Sensing Gaps</td>
<td>recognize the discrepancies between what currently exists and what is desired in order to clearly understand the challenge.</td>
</tr>
<tr>
<td>Playfulness</td>
<td>incorporate humor and a variety of other techniques to reduce inhibition and breakdown barriers to thinking freely.</td>
</tr>
<tr>
<td>Avoiding Premature Closure now called Keeping Options Open</td>
<td>avoid the tendency to jump to a decision or conclusion immediately when faced with incompleteness or an unsolved problem.</td>
</tr>
<tr>
<td>Sensitivity to Environment – now called</td>
<td>be sensitive to and respectful of the physical and psychological components related to the context</td>
</tr>
<tr>
<td>Skill</td>
<td>Being able to…</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Awareness</td>
<td>within which one operates.</td>
</tr>
<tr>
<td>Embrace risk</td>
<td>to remain unshaken or undeterred by the possibility of failure or setback.</td>
</tr>
<tr>
<td>Embrace ambiguity</td>
<td>be comfortable with uncertainty and the unknown.</td>
</tr>
<tr>
<td>Embrace complexity</td>
<td>persevere without being over whelmed by large amounts of information, interrelated and complex issues, and competing perspectives.</td>
</tr>
<tr>
<td>Openness to Novelty – now includes Keeping Open</td>
<td>entertain ideas that at first seem outlandish and risky.</td>
</tr>
<tr>
<td>Put Your Ideas in Context</td>
<td>put parts together in meaningful ways that create a big picture view.</td>
</tr>
<tr>
<td>Combine and Synthesize</td>
<td>make new and synergistic associations across domains to result in fresh ideas and perspectives that are greater than the sum of their parts.</td>
</tr>
<tr>
<td>Look at It Another Way – now included in Flexibility</td>
<td></td>
</tr>
<tr>
<td>Breakthrough – Extend the Boundaries now referred to as Breaking Set</td>
<td>break out of your old patterns of thinking about something and approaching a challenge from many different angles to identify the one that is most appropriate.</td>
</tr>
</tbody>
</table>

The techniques for developing these skills may include activities that use more than one skill at a time. This is representative of real life where these skills are often used in combinations.

There are several other sources of information that could be included when collating the key components of a creative mindset. These include J. P. Guilford’s Structure of Intellect and Min Basadur’s Creative Thinking Attitudes. For the purpose of this project it was not feasible to review these additional sources. A bibliography of additional resources for future review has been listed below.
Bibliography


Section Three: Process Plan

Introduction

Flexibility and adaptability are key when managing an extended project. The original plan for this project had to be adapted to manage unexpected developments and unforeseen outcomes. The detailed process used and the timeline for each stage has been documented below.

Planning Project Stages and Steps

The broad steps required at each stage were outlined by using a visual, graphic approach to organize the process flow. This allowed me to see where there were gaps in the process. The tool I used for this purpose was storyboarding. The starting point was identifying my purpose and rationale for the project. The finishing point was the final product. Once the details of my starting point and final product were clear, I used the “How?/How else?” tool to create the steps required to make the transition from the start to the end. Photographs of the visual planning process are included in Appendix E. This stage required 20 hours of work. The actual effective work required 10 hours, however I spent an additional 10 hours struggling to create a process plan using traditional approaches to organizing data by creating a written outline. This was a frustrating experience and once I moved to a visual graphic approach, I was able to be more efficient and effective in this stage of the process.

Identifying Resources and Gathering Data

The time required for this stage was 150 hours. The time spent was allocated as follows:

1. Identifying resources - 10 hours.
2. Creating a comprehensive list of key characteristics and skills of a creative mindset – 100 hours.

3. Selecting the skills for development – 15 hours.

4. Documentation of process and methodology – 25 hours.

The process and rationale used for the first two steps of this stage has been documented under review of pertinent literature. The details of the process used for the next step are documented below.

**Selecting the Skills for Development**

At this stage of the process, the divergence was complete and the next stage was the convergence to identify those skills which would be the focus of the finished product. In order to identify those skills which would deliver the greatest impact for nurturing a more creative mindset, I recruited the help of my peers and other experts in the field of creativity. I asked four students from the Creative Studies program and four faculty members to perform a card sort with the 22 skills identified above. I asked them to rank the skills with the one that would be most impactful if developed in a novice user being the first and the one which was least impactful being the last. A novice user is an individual who has no prior experience with creativity training or theory. I collated this data and analyzed it to determine which skills had the lowest and highest rankings. However, due to the dramatic variance in the responses with some skills getting ranked as either very impactful or not impactful at all (for example Tolerance for Ambiguity had a score of 1 and a score of 19, as did Flexibility), I had to look at the data in another way. I consulted with Dr. John Cabra on methodology for data analysis. He recommended that I should do a consensus analysis. This
analysis involved looking at what percentage of people surveyed agreed that a certain skill belonged in the top 5 or the top 11. This analysis provided a more reliable basis for selecting skills based on the outcomes of the card sort, as outliers did not skew the analysis. Tables D1 and D2 in Appendix D shows the complete analysis of the data and the results of the card sort.

The selection criteria used to identify the top 10 skills was that more than 60% of the card sort participants had to agree that the skill belonged in the top half of the total 22 skills. Table 6 shows the results of the consensus analysis and the skills were identified for development as part of the final product:

Table 6

<table>
<thead>
<tr>
<th>Skill</th>
<th>Percentage consensus that the skill should be included in top 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openness to Novelty</td>
<td>87.5%</td>
</tr>
<tr>
<td>Imagining</td>
<td>87.5%</td>
</tr>
<tr>
<td>Sensing Gaps</td>
<td>75%</td>
</tr>
<tr>
<td>Flexibility</td>
<td>75%</td>
</tr>
<tr>
<td>Playfulness</td>
<td>75%</td>
</tr>
<tr>
<td>Fluency</td>
<td>75%</td>
</tr>
<tr>
<td>Embrace Ambiguity</td>
<td>62.5%</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>62.5%</td>
</tr>
<tr>
<td>Originality</td>
<td>62.5%</td>
</tr>
<tr>
<td>Put Your Ideas in Context</td>
<td>62.5%</td>
</tr>
</tbody>
</table>

As a result of a detailed review and comparative analysis of creativity skills and based on a consensus analysis by peers in the field of creativity, the above skills were identified as those which would have the greatest impact if they could be developed in novice users in order to make the transition to a creative mindset. This
skill set also represents a “starter” skill set that indicates an individual’s readiness to take the next step to engage in a deliberate approach to creative problem solving, facilitation, and creative leadership which I believe are all higher level skills. My goal for this project was to help individuals develop this basic “starter” level of creativity which has the capacity to significantly improve the quality of life even if these individuals never go on to acquire the higher level skills.

The total time taken for selecting the skills for development was 15 hours. Having selected the starter skills for development in the final product, I moved forward to the next stage of the process.

**Designing the Final Product**

During the course of my review of pertinent literature I had realized that most activities included in the resource material were either designed to engage someone who was experienced in creativity or required the assistance of a facilitator who could guide a novice user through the learning process. The purpose of the final product was to provide activities that novice users could engage in to develop certain creativity skills on their own. Since there was no readily available source for such activities, I decided to collaborate with an alum, Erica Swiatek, from the Creative Studies program to create the activities needed for the final product. Erica works as a trainer for a large organization and has a great deal of experience in introducing creativity skills to novice users.

In order to ensure that the activities we created met the desired objectives, I created a brief introduction to the definition of each skill and also elaborated what abilities that skill would create in a novice user. This was an important step as it
guided Erica and myself in the creation of appropriate activities which would enhance the identified abilities in an individual. The synopsis for each skill also included the benefits associated with acquiring that skill. This elaboration was necessary for establishing relevance for a novice user. An example of the synopsis created for each skill has been included in Appendix A.

The goal for this stage of the project was to create four or more activities for each skill identified. As we worked through the skills, we realized that there was a great deal of overlap among the skills and our activities often extend over two or more skill sets. We also realized that the skill of Put Your Ideas in Context was a skill that most novice users already have since it is a skill that overlaps with analytical and critical thinking. We made the decision to eliminate this skill from our final product. We also decided to include the skill of incubation as this skill is a wildcard skill (Puccio et al., 2011) that supports the other skills chosen for development.

Erica and I used brainstorming to generate all the possible activities that would support the development of the skills. From our pool of ideas, we selected those which met the learning objectives and were simple and direct enough to be used easily by a novice user with little guidance or support. We also decided that visuals could be created to represent the essence of each skill. Once we had identified all the activities for inclusion in the final product, I created the activity cards for each skill set. I decided that in order to provide some background information for each skill, I would also create a website that could be accessed by anyone who wanted to understand the skill and the basis for the activities better. The total time taken for designing and developing the final product was 30 hours.
Evaluating the Final Product

In order to evaluate the impact of the creativity cards, I reached out to friends who were novice users in the field of creativity. I provided them with access to the website and activities that I had created. These friends responded from all across the globe and I asked each person to select one or more skills that they wished to develop. I then asked them to download the activities which were provided on the website. The test group was asked to weave the activities into their daily life for one week. At the end of the week the individuals were debriefed using the following questions:

- Which skills did you choose to develop?
- Which activities did you choose to use this week?
- What are some new outcomes that resulted from the activities you used?
- Would you consider continuing to use these activities in the future?
- In what ways might you apply the learning from this product in the future?
- How has your understanding of the concept of creativity evolved from your work with these activities?
- What might be some ways in which these activities or the website could be improved?

The feedback received from the participants has been included in Appendix C. Following the debrief, recommendations for improvement were factored into the final version of the product. The total time taken for the evaluation of the finished product was 5 hours. The total time taken for this Master’s project was 220 hours.
Section Four: Outcomes

The outcomes of this project are a website and a deck of cards. The purpose of the website is to provide an introduction to creativity and to the skills that were chosen for development. The website supports the creativity cards by allowing the user of the card deck to learn more about each skill.

Creativity Cards

The Creativity Cards are a deck of 54 double-sided cards that are the size of a standard business card. Each card has a simple exercise or prompt, which is designed to heighten awareness and help the user take a small, but deliberate step towards developing a particular skill. Some activities have two steps and the two sides of the card are related to the separate steps required. The cards are color coded to help the user identify which card is related to a particular skill. The color-coding on the cards matches the colors used on the website for each skill. The lead card for each skill also includes a QR code that can be scanned by a smart phone and will immediately take the user to a mobile version of the website. The link will access the information on the site related to the specific skill the user is working with. The reason why the cards are sized to match a standard business card is so that they can be easily carried by the user as a constant reminder to make the necessary adjustments that are required to make the shift to a creative mindset.

Examples of the activities and the layout for the cards are included in Appendix B.
Website

The purpose of the website www.creativitycards.net was to provide the supporting material for the use of the Creativity Cards. It was not possible to include anything besides the actual activities in the deck of cards, however, I felt that it was critical to provide some background information for the user. The website serves that need. The user is able to access the website online or by scanning the QR codes which have been included in the card deck and link the user directly with the relevant information for each skill.

The website introduces the user to creativity by first addressing why there is a pressing need for creativity in the world today. The user is then introduced to a way of understanding creativity through the systems model. The systems model is then broken down into its component pieces of creative person, process, environment and product with brief definitions for each. Visual representations of the model and its components are used to appeal to a visual learning style preference.

The site also introduces the skills that are to be developed in this product. These skills are categorized into meta skills and process skills. Meta Skills are identified as those skills that influence how one interacts with ideas, uncertainty, thoughts, feelings and the world around them. By developing meta skills that support creativity, one is able to enhance their creative interaction on a daily basis. Meta skills will change the way one approaches all aspects of life. The meta skills are mindfulness, openness to novelty, tolerance for ambiguity and playfulness. Meta skills support the process skills which are the skills that impact how one interacts with the process of solving problems. These are specifically oriented towards improving
one’s ability to generate novel and useful solutions to challenges. The process skills are visioning, sensing gaps, flexibility, fluency, originality and incubation.

Every skill is introduced to the novice user through a visual, a definition and an interpretation. The definition is the official definition for the skill as sourced from creativity literature. The interpretation provides an elaboration of the definition by conveying what ability one acquires by developing that skill. For example the definition for the skill of mindfulness is: Being able to attend to thoughts, feelings, and sensations relative to the present situation. The interpretation included is: A novice user who engages the skill of mindfulness is able to be completely present in the moment and identify what kind of thinking process is required in order to effectively move a challenge forward. This individual has a heightened awareness of their current state and factor it in when creating a suitable response to a situation.

The site also provides the reason why each skill is important or relevant to the creative mindset. The objective is to engage the user through establishing relevance on a personal level. For example, the reason why it is important to develop the skill of mindfulness is given as: Mindfulness allows you to engage completely when addressing a challenge. It allows you to be more effective in situation analysis and to craft a better response to the situation.

Examples of the definitions, interpretations and reasons why each skill is important that have been posted on the site are included in Appendix A.
Section Five: Key Learnings

In order to learn about ourselves, we need to step outside of ourselves and look on as observers. During the course of my time in the Creative Studies graduate program, I have learned that this level of awareness offers much greater insight into how I interact with people, process information, address challenges and produce results. As soon as I started working on this project, I made a habit of recording any insight that I had with regards to my personal growth and methodology. In retrospect this was a smart decision as I was surprised by the number of notes and the quality of the insights when I returned to reflect on them. The key learnings have been sorted into process oriented and content related categories.

Process Oriented

The Driver in me. On the FourSight measure of style preference as outlined in Your Thinking Profile (2011), I am identified as a Driver. A Driver is someone who has a dual preference for the ideating and implementing stages of the creative process. The validity of this measure is clearly very high given that my creative process is characterized by the fact that as soon as I have a good idea, I take no time to develop it or think it through, I immediately launch into implementation. As a high implementer, I would also display a strong preference for action and result-oriented products. These style preferences and the learning from them manifested in the following ways:

Four Master’s projects. I chose to start four different Master’s projects. In each case, I was completely sold on my idea and had written a concept paper and launched the product within a few days of conceiving the idea. In each of the four instances, I
did not invest any time in clarifying my objectives and taking the time to plan how I was going to reach my goal. The outcome of launching into action without planning was many hours of wasted effort as four projects came to a grinding halt when I realized that they were either not feasible in the period of time allotted to a Master’s project, or that they were projects for which I had little sustainable energy.

The lesson learned was that in spite of my marked lack of preference for clarifying and developing, I had to deliberately force myself to go through those stages. My final project choice was carefully structured and laid out through storyboarding and each stage was planned and outlined before I took the first steps towards implementation.

**Leading others to implementation.** My strong preference for implementation also manifests itself in my choice of products for my Master’s project. As mentioned above – I courted four different project ideas. While conceptually these ideas were different from each other, the end result for all four would have been to facilitate others to take action that would create desirable outcomes. The insight here was that I want to make others into implementers like myself. I want to make it as easy as possible for individuals to take action. I could not seem to divest myself of the notion that the only way to move forward is to take action.

**Supporting other preferences.** The deeper personal insight that I have gained during the course of this project is that while I handle challenges by doing something - that is not everyone else’s preference. In my interactions with my sister, my heightened awareness of my tendency to implement my way out of stressful situations resulted in my deliberate effort to curb my instinct. In responding to a challenge that
she was dealing with, I decided to support her by engaging her through her preference for clarifying. The quality of our interaction was very positive as was her appreciation that I resisted my impulse to solve her problem for her and instead indulged her need to explore data and ask questions. In the future this awareness is going to continue to be a significant component of my interactions with others.

**Collaborating to support preferences.** I have known for some time that my areas of weakness in terms of process skills are in the areas of clarifying and developing. While I was able to use process tools and perforce direct some energy towards clarifying before starting the project, when it came to the development phase – I found myself at a loss. The lure of the finish line, which seems to be in sight when I enter the development stage just prior to implementation, often proves too hard for me to resist. When I am working on a team, I frequently choose to work with individuals who have a strong preference for developing and who are able to provide the necessary skill set. However, in this case I was largely working alone and I found that I needed to seek out feedback from peers to help develop and refine my project. I found that when I had to make a case for choosing a certain approach or for making a certain choice to someone else – I was more careful to check the details, evaluate data, and to do all the things I would have to do in the development stage of the process.

The lesson for me was that, by building in accountability and feedback loops into the process, I found that I could engage in the development stage of the process.

**Visual Organization.** A creative skill that I rely on is putting ideas into context. I find that in order to assimilate information, I have to be able to see the big
picture and it is critical that I have a framework as a point of reference for data. I am also a visual learner and I discovered during the course of this project that by using my go to skills of graphic organization in combination with putting ideas in context, I was able to effectively manage large volumes of information. My project was planned, outlined and largely created on post-it notes which were then arranged and rearranged on sheets of flip chart paper until the patterns and flow of information made sense to me. By using this approach, I was able to use both my skills of seeing the big picture and graphic organization of data very effectively. In the future this technique will always be my first choice when processing information.

**My Growth Mindset.** In the course of my reading for this project – I was deeply influenced by *Mindset* a book by Carol Dweck (Dweck, 2008). While the reading did not contribute to my final product and project, it did result in some very meaningful insight for me on a personal level. Carol Dweck explored the concept of a growth mindset and compares it to a fixed mindset in her book. A fixed mindset is one in which an individual believes that her capacity to succeed is determined by a given set of gifts such as intelligence and talent. A fixed mindset precludes the ability of an individual to grow and improve her chances of success because these gifts are immutable. A growth mindset is one in which an individual believes that her success is a function of her effort and success is not limited to those who have a generous helping of the intelligence and talent pool.

While reflecting on this concept I realized that I had cruised through my primary and secondary education solely on the basis of my given talents. When I got to college – I floundered because I had failed to learn the value of effort in my earlier
years. My academic performance at college was very poor as compared to my performance in high school. I went from being a candidate for the Guinness Book of World Records, to a student who almost failed to graduate with a degree from college. I realize now that the lesson I had learned then was that the real key to success lies in maximizing your potential by engaging a hundred percent of your given talents and effort. This valuable lesson has served me well during the course of my graduate work which has been a much more rewarding and enriching experience as a result of making the shift to a growth mindset. The impact of this reading on my work has been to reinforce my belief that it is possible to make a shift in mindset and that effort invested in making the change can provide great returns.

**Making the Transition to a Team.** A realization that has come as a surprise to me during this project has been that while I always considered myself to be more productive when working alone, that is no longer the case. I find that I enjoy the energy of sharing and building on ideas. I am selective about the people I choose to work with, but if I have a synergistic relationship with someone – I am far more productive than I would be when working alone. I still find that I need some time alone to process and assimilate my thoughts, however particularly when it comes to generating ideas, I am far more generative as a part of a dyad or a group than I am when working alone. I have used this insight to my advantage by recruiting people to help me in the generative phases of my project.

In summary, the key process oriented learnings for me have related to leveraging my personal strengths and avoiding the pitfalls of my personal limitations. Working effectively to navigate through this project has required me to be more
mindful of how I work with the creative process and the insights that I have gained will have a significant impact on how I undertake complex projects in the future.

**Content Related**

**The Deep Dive.** The key lesson that I learned about content during this project were related to the research stage of this project. There were two areas of concern when I was determining how far to go with my research. These two areas are compared in table 7 below:

Table 7:

*Too Much Versus Not Enough Information*

<table>
<thead>
<tr>
<th>Too Much Information</th>
<th>Not Enough Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upside: Minimal danger of overlooking something important</td>
<td>Upside: A high level review would save time and allow for efficient use of resources</td>
</tr>
<tr>
<td>Downside: Drowning in too much information and information being lost due to the lack of time to process it effectively.</td>
<td>Downside: Not enough thoroughness could result in overlooking key components of the creative skill set.</td>
</tr>
</tbody>
</table>

In order to strike a balance between the two approaches I decided to opt for a deep dive but I limited it to three thought leaders who were recognized as leaders in the domain of creative skill sets. I am aware that this selection had room for debate and that there were other models that could have been included in the analysis and reading. My product was related to nurturing a creative mindset and I used Torrance, Amabile and the Thinking Skills model of Creative Problem Solving as my resources. The reason for choosing these three models was because they each represent work that has been substantiated by extensive research and also because they are each recognized in the field of creativity as experts. Making the decision to limit myself to
these three sources taught me to build a tolerance for imperfection. Sometimes accepting that something is good enough has to suffice even though it is not ideal. It is about finding a balance between appropriate and perfect.

**Returning to Original Sources.** During the process of the deep dive for information, I learned that it is important to return to original sources and to extract my own first hand understanding of the material. For years I have believed that I had a working knowledge of the Beyonder leap skills from Torrance’s work in *The Search for Satori and Creativity* (Torrance, 1979). I found that when I took the time to read and reflect on his work, my understanding deepened significantly and in some instances I was surprised to find that my previous understanding had been very superficial. In the future I plan to return to further deepen my understanding of Torrance’s work and to integrate it further into my own work.

**The Beyonder Skill Set.** For the last three years I have struggled with the need to relate the Beyonder skill set from Torrance’s work to the CPS skill set. I have tried many different permutations and combinations and none would work. I found this to be extremely frustrating because while some of the skills clearly overlapped, there were some that just did not fit into the process framework. The answer that has finally come to me as a result of this project is so simple and obvious that I wonder why I never saw it before. The Beyonder skill set represents a personal skill set. The CPS skill set represents a process skill set. A personal skill set is naturally broader than a process skill set because a person interacts with more than just process in their lives. The Beyonder skill set includes process skills and those skills which are related to simply manifesting a creative attitude to life.
Feedback on Final Product

The process used to evaluate the final product has been outlined in section three above. The key learning from the feedback received from the participants in the test group was that it is possible to help individuals make a shift to a more creative mindset through simple exercises and prompts. Individuals reported that:

- The activities they chose had a significant positive impact on their problem solving abilities, awareness of creative approaches and outcomes.
- They would continue to use the exercises in the future.
- They had a better understanding of creativity.
- By experiencing success with the skills they had chosen to work with for one week they were eager to try the activities related to the other skills.

The complete feedback from all participants is included in Appendix C. The feedback from the participants provided the reassurance that simple but deliberate exercises can create significant results. In the past I have often attempted to squeeze in a number of different creativity concepts and tools into a training session. These cramming sessions have left the participants feeling overwhelmed and have been frustrating for me as a trainer. The benefit of keeping it simple is that the participant leaves with a sense of accomplishment at having mastered a technique and the trainer has more realistic and attainable goals.

Room for Improvement

There were many instances during the course of this project when the tolerance for ambiguity and complexity was overwhelming. However, by returning to a mindful and deliberate approach I was able to steer my way through this
challenge. Some of these lessons were learned from repeated failures – such as the three projects and concept papers which were discarded. Some were a welcome embracing of a preference – such as the use of graphic organization techniques to create outlines and collate information. The insight about Torrance’s work was an unexpected and welcome revelation. The final lesson learned is perhaps the most valuable lesson of all – That there is always room for improvement or deeper insight and all it takes is mindfulness and an open mind to receive those gifts.
**Section Six: Conclusion**

**Creative Change Leadership**

**Looking in the mirror.** As a facilitator and trainer for creative thinking over the last four years, I have been responsible for helping groups navigate the Creative Problem Solving process as a means to get to a desired goal. I have provided guidance as a coach to individuals who have struggled with large and complex challenges. It would be reasonable to assume that when facing such a complex challenge on a personal goal, I should have been able to navigate my way through it with practiced ease. This was not the case. I discovered, much to my surprise, that in order to be a truly skilled change leader I had to internalize all of the cognitive and affective skills that I teach so effectively to others. In simplest terms I had to practice what I preach.

**A constant challenge.** The final stage of development for a creative change leader is the transition from a consciously skilled to unconsciously skilled practitioner (Puccio et al., 2011). I mentioned this model in my vision and philosophy paper in the capstone class in the graduate program:

In *Creative Leadership*, Puccio et al. (2011, p. 292) referred to a model for the development of a creative change leader. In this model the incremental stages of development for a creative change leader were:

- **Spectator:** Unconsciously unskilled.
- **Student of Creativity:** Consciously unskilled.
- **Skilled Facilitator:** Consciously skilled.
• Creative Change Leader: Unconsciously skilled.

It is my goal to attain the level of Creative Change Leader. According to the model, I need to internalize what I have learned and become a lifelong learner. It is the stage at which my creative beliefs become fully integrated with how I conduct myself on a daily basis in all facets of my life, and the breadth of my impact would be greatest. This model provides me with a clear vision of what I want to achieve in personal growth. (Mamnoon, 2012, p. 24)

As a result of this project I have learned that change leadership is a constant challenge. In order to be an effective change leader I have to face and address my own personal limitations. When I felt that I had veered off course I had to deliberately engage skills that I had acquired over the four years that I have spent in the graduate program and return to the Creative Problem Solving process to guide my thinking and processing as I navigated the challenge. I used the insight that I have gained into my personal interaction with creativity to my advantage. I found myself flexing and adapting with the evolving needs of the project. I was forced to embrace ambiguity and finally to resist the siren’s call of the implementer in me and avoid rushing to the end.

It is important to be vigilant and aware that it is easy to become overwhelmed by ambiguity and complexity and lose sight of the principles and creative approaches that one aspires to. It is not enough to have the tools and techniques if one is not cognizant of the need for engaging these when necessary.
Creativity

Small steps in the right direction. I have lost track of the number of times I have heard people say “I am not creative”. The feedback from the test group who tried the final product confirmed my initial hypothesis that it is possible to make a shift to a creative mindset through the use of simple exercises and small modifications in attitude and behavior. The simple approach proved to be effective and the activities raised awareness about personal attitudes and helped develop creative skills.

Becoming more creative doesn’t have to involve a major overnight transformation, it can be a gradual evolution and every step in the right direction can add to an individual’s creative quotient.

Next Steps

The positive feedback on the product has reinforced my desire to publish and market the Creativity cards. The next steps in this process will be to:

1. Process the feedback and make any changes that were recommended by the test group.
2. Approach a publisher with the product to ascertain if they would be interested in publishing and promoting it.
3. Print several prototype card decks and offer them for review at creativity conferences and other venues.
4. Assimilate feedback from publishers and prototype testers to finalize the finished product.
5. Self publish or publish through an established publisher.
References


Childs, M. (2003). *Father of Creativity E. Paul Torrance, UGA Professor Emeritus of Educational Psychology. Dead at 87*. Retrieved from University of Georgia magazine website:


FourSight, LLC (2011). *Your thinking profile: A tool for innovation*. Evanston, IL: FourSight, LLC.


Appendix A: Website Content
Appendix A: Website Content

The website www.creativitycards.net provides the supporting material for the Creativity Cards. The website includes an introduction to creativity and elaboration of the creativity skills to be developed. Samples of visuals and content included on the website are shown below:

What is Creativity?

There are many different ways of defining creativity. The quickest way to define creativity is that it is the production of NOVEL and USEFUL outcomes. A model for understanding how creativity works is that creative change happens when a creative person engages with a creative process within a creative environment:
Creative Person

A creative person is an individual who:

• Engages imagination and curiosity
• Applies strategies to solve problems that are ambiguous, complex and unprecedented
• Keeps novelty alive
• Is not afraid to make mistakes

Creative Process

The creative process is built on our natural problem solving process and alternates divergent (generating options) and convergent (evaluating options) thinking to generate creative solutions and change.

Creative Environment

A creative environment is:

• Psychologically supportive
• Has a high tolerance for error
• Supports risk-taking
• Playful
• Dynamic
• Encourages curiosity and debate

Creative Product

A creative outcome is a tangible or intangible product that is both NOVEL and USEFUL. Novelty is preserved by Suspending Judgment and Usefulness is evaluated through Affirmative Feedback.
**EMBRACE AMBIGUITY**

**Definition and Interpretation:**
Being able to be comfortable with uncertainty and the unknown.

A novice user who has developed an ability to embrace ambiguity is able to avoid leaping to conclusions and is able to sacrifice familiarity and certainty for novelty and risk that is associated with exploring new ideas.

**Why is this skill important:**
New ideas are not perfect at inception, embracing ambiguity allows one to keep an open mind and be receptive to new ideas which may over time and with some effort be developed into breakthrough solutions.
SENSING GAPS

Definition and Interpretation:
Being able to recognize the discrepancies between what currently exists and what is desired in order to clearly understand the challenge.

This means that a novice user who has developed the ability to sense gaps is able to identify the key obstacles or steps that have to be addressed in order to move a situation forward from its current state towards the desired future. This skill builds on the skill of imagining as a rich and detailed vision of the desired future allows an individual to be more effective in identifying the key components of the end goal and results in a better understanding of the steps required to achieve it.

Why is this skill important:
When aspiring to reach a goal, it is important that effort and resources should be directed in an effective way. We often expend a great deal of effort towards actions that do not bring us any closer to our desired goals. This happens if we do not take the time to identify and confirm the necessary steps and gaps that have to be closed in order to achieve the desired results.
Appendix B: Sample of Creativity Card activities
Appendix B: Sample of Creativity Card activities

Table B1

Visioning Activities

| Imagine that it is 10 years in the future and you are on Larry King Live... |
| Why are you there? What is he asking you? What are you going to say? |
| Record your wishes on a daily basis and consider “what might be all the ways to make your wishes come true?” |

Table B2

Playfulness Activities

| Take the sting out of failure... Keep your failures in perspective – on a scale of 1-10 is it the end of the world or a blip on the screen? |
| Act the part of the other protagonists in your sticky situation... For example: play the part of a customer with a complaint |
Table B3

Openness to Novelty Activities

<table>
<thead>
<tr>
<th>GET RID OF IDEA KILLERS...</th>
<th>WHAT PRODUCTS EXIST TODAY THAT WERE UNIMAGINABLE 10 YEARS AGO? WHAT MIGHT BE SOME PRODUCTS THAT COULD CHANGE YOUR LIFE IN THE NEXT 10 YEARS?</th>
</tr>
</thead>
<tbody>
<tr>
<td>“THAT WILL NEVER WORK”</td>
<td></td>
</tr>
<tr>
<td>“THAT’S A DUMB IDEA”</td>
<td></td>
</tr>
<tr>
<td>“ARE YOU KIDDING ME”</td>
<td></td>
</tr>
<tr>
<td>“NO WAY?”</td>
<td></td>
</tr>
<tr>
<td>“THAT’S CRAZY”</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C: Feedback From Test Group
Appendix C: Feedback From Test Group

The questions posed to the participants on the product testing were:

1. Which skills did you choose to develop?
2. Which activities did you choose to use this week?
3. What are some new outcomes that resulted from the activities you used?
4. Would you consider continuing to use these activities in the future?
5. In what ways might you apply the learning from this product in the future?
6. How has your understanding of the concept of creativity evolved from your work with these activities?
7. What might be some ways in which these activities or the website could be improved?

The responses from the participants were:

Participant 1:
1. Meta skills - mindfulness, tolerance for ambiguity; process skills - sensing gaps
2. Activities specific to mindfulness included engaging my senses. Activities for tolerating ambiguity included accepting worst case outcomes for my business I.e failure to breakeven without achieving any market penetration or brand awareness
3. Mindfulness and tolerance for ambiguity have allowed me to not get caught up in a self contained fear based loop and hence has helped me to disengage from the reactive state. This mode of observation has in turn allowed me to focus on the process skill of sensing gaps e.g faulty products from a supplier are symptoms I was focusing on whereas the root of the problem was failure to identify who was competent from the beginning by not focusing on prototype production right away as opposed to waiting for negotiations before prototype production began. This disengagement from a non reactive state has allowed me to observe my reactive state and realize that solutions to problems best come from being in a mindful / neutral position - else we end up focusing on the symptoms which come from being in a reactive / non-mindful state
4. I would first and foremost focus on the meta skills as these lay the foundation on which to effortlessly build process skills. Without being caught up in self contained reactive loops, inspiration and clarity comes much more naturally.
5. I will continue to use meta skills I have developed here to focus on solutions for my business as opposed to being caught up in so called 'failures' and criticism.
6. My concept of creativity has definitely strengthened, as I have realized we have to get out of our own way of thinking and limited / fear based belief systems in order to allow inspiration and creativity to flow through naturally.
7. My suggestion would be an emphasis on meta skill development. I believe we all have creative potential with the ability to frame appropriate questions in the search
for solutions. But in order to reach that state, we have to get out of our own way by practicing meta skills such as mindfulness and tolerance for ambiguity - from there the development of process skills will almost seem natural and effortless as our inner desire to be creative will come to fruition without the impediment of mind based movement.

Participant 2:
1. Which skills did you choose to develop?
   I mostly worked from the flexibility, fluency and originality worksheet.
2. Which activities did you choose to use this week?
   Take a mental excursion to a time or place where your challenge no longer exists…what is different? What has changed?
   Open a book to page 7 and pick word number 23…force fit that word into a solution for your challenge…
   List all the solutions you have already tried before
   • List all the solutions you have considered trying before
   List 5-10 solutions you have never tried or considered before
3. What are some new outcomes that resulted from the activities you used?
   I am transitioning into a new job, with the added challenge of working for the person who had this job previously. I am working to make significant changes to my program while not insulting or undoing any of his work. I used these exercises to help develop a new list of incentives that we could use to get donors to give $1000 or more to IC.
4. Would you consider continuing to use these activities in the future?
   Definitely. They were fun and effective.
5. In what ways might you apply the learning from this product in the future?
   I'd like to keep the worksheets handy, and possibly even visible on my bulletin board, so that I remember to take them out and use them when needed.
6. How has your understanding of the concept of creativity evolved from your work with these activities?
   I'm not sure my understanding evolved, but I think that I now trust myself more in my ability to be creative.
7. What might be some ways in which these activities or the website could be improved?
   Using a few of these worksheets made me want to see them all - perhaps have all of them available as a single download?

Participant 3:
1. I worked on Mindfulness. I have heard this term quite a lot recently and did a bit of research mostly to get some parameters.
2. I worked on Mindfulness Activities and Visioning Activities.
3. WELLL.... This exercise was eye opening for me. I consider myself a creative thinker and problem solver and know I am only a beginner. BUT, I did not realize how much of a beginner I am. This concerns me a bit. I realized that I am an addict to the patterns I have developed through my life. While I would like to change some of the ways I approach things I get comfort from my engrained behaviors. I am not sure if this is all bad. It is interesting.
   a. Outcome 1. I need to start slowly. I can find 2 minutes to be still, then 3, then longer. I need to be conscious of this time.
   b. Outcome 2. I can benefit from taking steps to an end and to revel in those steps.
   c. Outcome 3. As you know I have trained for a very long time in TKD. I have found much of this mindfulness through that training. I thought a lot about how it works for me in that context and why some of the activities were so difficult in other contexts. I think I am a very physical person and to explore I need to move, touch, smell, feel and that I need to allow for that to become mindful. I think for meditation and visualizing I can develop a physical, movement path into stillness.
   d. Outcome 4. Journaling - I need to buy a Dictaphone. If I give myself permission to journal orally that would be great. I LOVE the act of writing but that requires certain environments for me. I do talk to myself so stream of consciousness that way can be a release.

4. I would definitely continue.

5. I engage in many projects simultaneously and I think I can be more effective if I am more mindful in each endeavor. I would like to be able to engage more on one thing at a time.

6. I have always thought that anyone can be creative. Most often people limit themselves. Since what I do it try to teach people to think creatively around Theater Arts I think these activities have helped me to explore ways to help other people.

7. This is a hard question to answer. For me the activities were daunting at first glance. There is so much. Perhaps breaking things apart and naming them so that people can click on one thing and link to another. For example: Imagining that it is 10 years in the future and you are on Larry King Live..... could be titled 15 Minutes of Fame. When a person clicked on that they would see the instructions. Then there could be a link to “Explore further”…”Your 80th Birthday Party” etc.
Participant 4:
1. I chose "Openness to novelty" in Meta-Skills.
2. A new order for completing assignments.
   A new order for making calls to people/responding to e-mails - so that communication is fun.
   A new order at Subway/McDonald's
3. Thinking of new ideas often saves time in the workplace. Thinking of new methods to finish assignments instead of adhering to old, mundane, inefficient ones gives you a positive feeling and gives you a separate way to finish your work.
   Using analogies like:
   "You're like a map," or
   "you're like a computer"
   helps with colleagues enormously.
4. Absolutely - If I have time and I want to deviate from stress.
5. Accepting and welcoming novelty in your life can be applied everywhere - from learning to drink hot chocolate instead of your usual morning coffee - or walking to work instead of driving, if you live close enough.
6. Creativity does not depend on time and effort.
7. More pictures! More color!
   Hope this helps. Good luck!!

Participant 5:
1. I worked on "mindfulness".
   
3. At the start I was overwhelmed with several events that all seemed earth shattering. I started to break them down. Ended up seeing them as individual events and not situations which would affect one another. I divided the day into time slots for dealing with them. Like when at school - I worked only one the projects that I needed to. If I felt myself worrying about other issues - I did a mental shut down by engaging in a conversation with someone, being attentive to the fact that I needed to change where my thoughts were taking me. Sort of a pseudo "quiet place". I was able to partially prioritize the issues at hand, like telling myself - in school I cannot do anything for Arkan or Ameer while at work.
   It wasn't easy but it definitely helped me get through my day and also to complete the tasks that needed my attention as a doctor. This way I felt that I had accomplished something I. The face of some major challenges. The result being that I didn't stay upset and tense 24/7. I was able to be a "mom" without breaking down a million times. When I needed quiet time at home I regrouped my thoughts by first having a good cuddle with the boys or doing some task that did not need major thought processing.
   The cards helped me remember what I was out to achieve.
   
4. & 5. I definitely will use the cards daily - it helps get me through the day. I am not sure which activity I will choose next. Right now this is my crutch and I am holding
on to it.

6. Not sure if it made me more creative but it definitely made me think. Like the technique of walking away and having a conversation with someone else to change my thoughts.

7. Whether this needs improvement - well I feel that it gives you the required guidelines. Each individual can then tailor to their needs. It happens without needing instructions. You just find your own flow chart and then it works for you.
Appendix D: Consensus Analysis for Creativity Skills Card Sort
### Appendix D: Consensus Analysis for Creativity Skills Card Sort

**Table D1**

*Card Sort Ranking for Skills*

<table>
<thead>
<tr>
<th>Skill</th>
<th>Card Sort Ranking</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openness to Novelty</td>
<td>2 1 1 4 14 3 6</td>
<td>40</td>
</tr>
<tr>
<td>Imagining</td>
<td>9 15 7 1 4 6 9 7</td>
<td>58</td>
</tr>
<tr>
<td>Sensing Gaps</td>
<td>5 8 13 2 2 13 10 3</td>
<td>56</td>
</tr>
<tr>
<td>Flexibility</td>
<td>7 4 19 5 3 1 12 8</td>
<td>59</td>
</tr>
<tr>
<td>Playfulness</td>
<td>12 7 9 16 19 4 8 4</td>
<td>79</td>
</tr>
<tr>
<td>Fluency</td>
<td>8 6 15 17 11 2 11 9</td>
<td>79</td>
</tr>
<tr>
<td>Tolerance for ambiguity</td>
<td>19 2 3 12 1 11 4 13</td>
<td>65</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>11 17 2 15 8 10 1 1</td>
<td>65</td>
</tr>
<tr>
<td>Originality</td>
<td>1 5 4 18 13 7 13 10</td>
<td>71</td>
</tr>
<tr>
<td>Put Your Ideas in Context</td>
<td>10 14 10 10 10 15 16 5</td>
<td>90</td>
</tr>
<tr>
<td>Awareness</td>
<td>20 16 6 9 17 14 2 2</td>
<td>86</td>
</tr>
<tr>
<td>Breaking Set</td>
<td>18 12 11 3 7 3 15 17</td>
<td>86</td>
</tr>
<tr>
<td>Elaboration</td>
<td>13 9 16 7 12 5 14 11</td>
<td>87</td>
</tr>
<tr>
<td>Tolerance for complexity</td>
<td>16 3 8 19 5 21 6 14</td>
<td>92</td>
</tr>
<tr>
<td>Keeping Options Open</td>
<td>17 11 12 13 9 8 7 16</td>
<td>93</td>
</tr>
<tr>
<td>Combine and Synthesize</td>
<td>6 13 18 6 6 8 17 22</td>
<td>96</td>
</tr>
<tr>
<td>Tolerance for risk</td>
<td>4 10 14 14 15 17 5 12</td>
<td>91</td>
</tr>
<tr>
<td>Supporting</td>
<td>21 19 5 8 20 19 21 21</td>
<td>134</td>
</tr>
<tr>
<td>Screening</td>
<td>3 18 21 22 16 18 19 15</td>
<td>132</td>
</tr>
<tr>
<td>Developing</td>
<td>22 22 20 11 22 16 20 18</td>
<td>151</td>
</tr>
<tr>
<td>Prioritizing</td>
<td>15 21 17 21 18 22 18 19</td>
<td>151</td>
</tr>
<tr>
<td>Sorting</td>
<td>14 20 22 20 21 20 22 20</td>
<td>159</td>
</tr>
</tbody>
</table>
Table D2

**Ranking Distribution and Consensus**

<table>
<thead>
<tr>
<th>Skill</th>
<th>Ranking Distribution</th>
<th>Ranking Consensus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 to 5</td>
<td>6 to 11</td>
</tr>
<tr>
<td>Openness to Novelty</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Imagining</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Sensing Gaps</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Flexibility</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Playfulness</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Fluency</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Tolerance for ambiguity</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Originality</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Put Your Ideas in Context</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Awareness</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Breaking Set</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Elaboration</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Tolerance for complexity</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Keeping Options Open</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Combine and Synthesize</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Tolerance for risk</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Supporting</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Screening</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Developing</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Prioritizing</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Sorting</td>
<td>1</td>
<td>7</td>
</tr>
</tbody>
</table>
Appendix E: Photographs of Visual Organization of Process
Appendix E: Photographs of Visual Organization of Process

Visual organization of process flow part 1.

Visual organization of process flow part 2.