HOLISTIC APPROACHES TO CREATIVE PROBLEM SOLVING

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Education
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Abstract

This qualitative research study explores the complex phenomenon of intuition within the Creative Problem Solving process. The first part of the study utilized 100 alumni, students, professors, and visiting professors of the International Center for Studies in Creativity (ICSC). These participants were asked a series of questions in order to help the researcher answer the questions: How do creativity practitioners construe intuition? What role does intuition play in the Creative Problem Solving (CPS) (Miller, Vehar & Firestein, 2001; Noller, Parnes & Biondi, 1976; Osborn, 1953; Puccio, Murdock & Mance, 2006) process?

The second part of the study involved eleven graduate students enrolled as Creative Studies majors at ICSC who were participants in a course on holistic approaches to Creative Problem Solving. The study explored the questions: Are intuitive tools and techniques effective in CPS? If so, when are they effective? When CPS is taught from a holistic perspective, is transformation likely to occur? Four theoretical models, including: a definitional model of intuition; a skill set for intuition, a process to improve the effectiveness of intuitive tools; and a transformational model of learning, were developed. These models were designed as a way for creativity practitioners to understand this phenomenon and to incorporate it into their practices.
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Dedication

To Dr. Mary Murdock, who gave me the wings to embark on this journey,
this is dedicated to you…
Chapter One: Beginning with Myself

The Start Of My Doctoral Studies

I began my doctoral studies at the Ontario Institute for Studies in Education (OISE), in September 2005. I will never forget a speech delivered in my first class, the Contemplative Practitioner, by guest Professor David Hunt. As Dr. Hunt sat in front of the class, he shared his diverse experiences as an applied psychologist and researcher. He recommended that instead of running around looking for theories on which to base our work, we should instead begin with our own personal and practical knowledge; the richness of knowledge would come from what we already know. This was a powerful realization, because I had come to believe that what others knew was more interesting or important than what I knew. Dr. Hunt's advice became the basis of inquiry for my doctoral thesis, and has led me to my research questions. However, before I share those questions, I would like to begin with myself.

Beginning With Myself

I was an intuitive person, and problem solver, long before I even knew what the word “intuitive” meant. Growing up, I was a child artist who could not be easily reasoned with. Logic was not something that I found particularly useful. When solving a problem, I consistently chose “what felt right” over “what was right on paper.” Choosing what “felt right” led me to an early career as a professional actress, despite the naysayers telling me that I would never be able to make a living. And although I had a rapid rise to Actor’s Equity, with a prosperous career ahead, I decided to leave the business because it “felt wrong,” and I knew there had to be something more meaningful in my life.
My search for something meaningful left me feeling alone and vacant. Logically, everyone told me I should become a teacher. However, I didn't see myself working with children every day. Then, I had an intuitive insight which changed the course of my life. “Stop asking what you want to do with your life!” A friend reminded me. “What do you want to learn about?”

Without hesitation, I responded, “Creativity.” Two days later, through a series of serendipitous events, I became a graduate student at the only place in the world (at the time) where someone could study a scientific and deliberate approach to creativity - the International Center for Studies in Creativity (ICSC) at Buffalo State.

For the next two years, I studied creativity with engineers, educators, social workers, and business consultants. The program quickly dissolved my belief that creativity was only prevalent in the arts. In fact, as a former actress, I felt I was an oddball in the group. In an attempt to appear more “normal” in the eyes of my new friends, I changed my outer appearance and inner attitude. My black dance leggings were replaced with business suits, and my long red hair became a mild, brown bob. Feeling ashamed of my former self, and what others would think of me, I hid my artistic and intuitive background and “bought into” a scientific, logical view of creativity. The new self did not feel like a perfect fit, but I was stepping out of the dark, to see a newfound light.

**Discovering The Missing Link**

Creative Problem Solving (CPS) is one of the major strands in the Creative Studies curriculum. CPS is a deliberate, cognitive, problem solving methodology with a fifty-year history of development and research (Miller, Vehar & Firestein, 2001; Noller,
I felt empowered learning CPS, because of its methodical, scientific approach and took to the approach with great enthusiasm. My bedroom walls rapidly became covered in post-its and sticky-dots, the basic materials for practicing my divergent and convergent thinking tools. I also felt more intellectual using this systematic approach, because it was so different from the rapid, emotional, problem solving process I had previously preferred.

Shortly after I finished my graduate studies, I was asked to become a lecturer in the Creative Studies department. I was thrilled to be teaching the subject I loved, and at the same time, I felt as if there was something missing, particularly when I taught the CPS methodology. Little did I know at the time, that my intuitive artist continued to hide behind the mask of a scientist. After several years teaching in academe, I decided it was time to obtain a terminal degree to secure a spot in a tenured position. I spent the next three years searching for the perfect program.

The turning point came in 2003, when on a whim, I decided to attend the Holistic Education Conference presented at OISE. The conference was buzzing about the holistic education work developed by Dr. Jack Miller, so, despite the session being full, I snuck in to hear what he had to say. From the moment he introduced the holistic curriculum, and its fundamental relationship between analysis and intuition, the light bulbs began to go off in my head. It suddenly dawned on me that the intuitive function was wholly missing from the CPS model. Attending Dr. Miller's session made me realize that I could no longer ignore my authentic, intuitive self, and that I needed to explore this area much further. I applied to and was accepted in the Curriculum, Teaching and Learning doctoral program at OISE in 2005.
From the outset, I wanted to explore what Holistic Creative Problem Solving might involve. For me, it was essential to understand what it might look, sound, and feel like. So, I began to experiment with various intuitive tools and techniques in my own classes. The effect on my students was quite dramatic. A significant proportion of them appeared to experience transformations that included a deeper awareness of themselves, and a stronger connection with myself, and their classmates. Although this was encouraging, I was aware that the transformational effect of the intuitive tools was hit or miss. I didn't have a clear understanding of what tools to use when, nor did I understand why they worked for some people and not for others. At the same time, I realized that I couldn't be the only person thinking about this topic, and I therefore needed to engage in a more systematic exploration of the literature, rather than try to invent everything from scratch.

The combination of these early experiments and literature review, helped me focus my thinking and led to the following questions that form the basis of my doctoral study:

• How do creativity practitioners construe intuition?
• What role does intuition play in Creative Problem Solving?
• Do students find deliberate, intuitive tools and techniques effective in CPS? If so, when do they find them the most effective?
• When CPS is taught from a holistic perspective, is personal transformation likely to occur?

**How do Creativity Practitioners Construe Intuition?**

My study focuses very firmly on people who operate within the field of Creative
Problem Solving (CPS). I selected this group partly because it is my main area of academic interest and also because it provided sufficient boundaries around the topic to enable me to design a suitable research project. Given this criteria, my initial challenge was to understand how the members of this group construed the concept of intuition. Did they see it as relevant to their work, and had they made any attempt to harness it within their practice?

Before I could examine the attitudes and beliefs of the practitioners, I needed to deepen my own understanding of intuition, in order to be able to have a meaningful dialogue with the community. I started my research with the belief that intuition was something that was closely related to the "gut feeling," "hunch," (Agor, 1991) or “inner knowing” (Robinson, 2006) that occurred within the creative process, often producing insight (Markley, 1988). This belief, although informed by observation of my students, was also deeply rooted in my experience as a professional artist. I was therefore both surprised and pleased to discover reports from a wide range of scientists, academics, and other eminent creative people, attributing a significant proportion of their breakthroughs to insights gained through intuition.

However, as I explored the literature, it became increasingly clear that my personal construction was rather limited. Intuition, based upon peoples' descriptions, appeared to be a multi-faceted, and complex phenomenon, with a wide range of explanations regarding where it came from, how it is manifested, and how it may be deliberately accessed. Intuitive insights for one person may come in a completely different form from those of another person. The term may be similar, but the nature of the experience could differ dramatically.
What was also clear from the literature, was that despite the fact that the mental processes of eminent people had received extensive attention by creativity researchers, very little of the research had examined the intuitive aspects of their work. I believe that this omission occurred because intuition is frequently perceived as mystical and/or indefinable, which for many scientifically oriented researchers, makes it difficult to study (Klein, 2003b).

Fortunately, this problem of studying ineffable phenomena has been confronted and overcome before. In fact, the whole notion of creativity used to be considered largely unresearchable, due to its seemingly 'magical' properties. However, the topic has proven to be amenable to study through a range of quantitative and qualitative techniques. And I hope that intuition will prove to be equally accessible, because it clearly plays an important role in many people's lives.

Having developed a more sophisticated personal view of intuition, I was able to turn my attention to the community of practitioners.

Given the complex and multi-faceted nature of people's intuitive experiences, I felt it was essential to develop a common vocabulary of intuitive terms that would allow people to talk about their experience and beliefs, without losing the richness of the content. I approached the task through questionnaires that facilitated the development of a set of intuitive descriptors. The descriptors were derived from participants answers to the following broad questions: What are the behaviors that people witness while watching intuition in action? What does intuition feel like when it occurs? What words, phrases or sounds do people associate with intuition? (questions taken from Costa & Kallick, 2000). The results of this portion of the study may be found in Chapter Four of this
What Role does Intuition Play in Creative Problem Solving?

Deliberate problem solving processes have existed for centuries. However, it is only in the last 60 years that they have been researched and taught in a more systematic manner. The emergence of models such as Synectics (Gordon, 1961; Gordon & Poze, 1972; Gordon & Poze, 1980), TRIZ (Mann, 2001; Savransky, 2000; Terninko, Zusman & Zlotin, 1998), and Creative Problem Solving (Miller, Vehar & Firestein, 2001; Noller, Parnes & Biondi, 1976; Osborn, 1953; Puccio, Murdock & Mance, 2006), were stimulated by society’s need for deliberate ways in which ever-more complex problems could be solved.

For the purpose of this study, I focused my investigation on the role of intuition within the Creative Problem Solving (CPS) method. CPS is a deliberate problem solving process that is based on six stages: identifying the goal, wish or challenge, gathering data, clarifying the problem, generating ideas, selecting and strengthening solutions, and planning for action (Miller, Vehar, & Firestein, 2001). The dynamic balance of divergent (creative) and convergent (critical) thinking are present throughout each stage of the process, coupled with guidelines that support each type of thinking. Additionally, there are numerous tools and techniques that support each stage of the process.

The primary reason I selected the CPS methodology is because I have several years of formal graduate training, along with extensive experience of teaching and facilitating CPS over the last ten years. The secondary reason for selecting CPS is that it has undergone over fifty years of research and continuous development by Osborn (1953), Noller, Parnes and Biondi (1976), Isaksen, Dorval and Treffinger (2000), Miller,
Vehar and Firestein (2001), and most recently by Puccio, Murdock and Mance (2006). In essence, it is a well validated approach to creativity problem solving, and one with which I have great familiarity. Once again, I asked the members of the creativity community, who had completed my questionnaire, whether or not they felt there was a role in CPS, and if so, what that role would be. The results of these questions may also be found in Chapter Five.

**Do Students Find Deliberate, Intuitive Tools and Techniques Effective in CPS? If so, When do They Find Them the Most Effective?**

Although CPS is a well-developed methodology, due to its exclusively cognitive orientation, it lacks deliberately intuitive oriented tools. Addressing the question of students' experience of intuitive tools would therefore require the acquisition or creation of suitable tools. Fortunately, it proved to be possible to repurpose tools from related fields. However, before I engaged in transplanting tools from other fields, I wanted to explore the impact of awareness raising.

Reflecting on my personal experience of intuitive insights, highlighted the fact that these insights occur frequently, but in seemingly unpredictable ways. However, I also realized that the more I paid attention to my intuition, the more frequently the insights occurred. My initial experiments, in my classes, showed a similar pattern. Simply raising people's awareness of the topic often led to a much deeper connection with their intuition, and recognition of its importance in their problem solving process. In many ways, this result was not surprising because guided attention is often referenced in the literature as being an important enabler of deliberate intuition.

What I wanted to understand was whether it was possible to orchestrate intuitive
insights through the development and application of appropriate tools. In order to answer this question, I needed to define deliberate intuition, as opposed to the 'random' variety, and find the appropriate tools.

The descriptors of intuition - developed for discussion with the creativity community - proved to be a useful starting point. In a recent article I coauthored (Francisco & Burnett, 2008), I condensed my thinking around the descriptors and defined deliberate intuition as "the intentional engagement of intuitive skills in service of uncovering hidden relationships, ideas and insights to harmonize intuitive and logical information processing while generating creative change" (p. 237). In this same article, we described two ways of deliberately activating and encouraging intuition within the CPS process- through passive intuition, which allows for incubation time throughout the process, and and active intuition, which involves the invocation of intuitive capabilities through a range of tools and techniques that focus on the “blink” (Gladwell, 2005) of an eye or gut feeling (Gigenzer, 2007) intuitive and non-rational feelings and insights. These tools are meant to honor and explore that which cannot be explained.

One of the problems that I stumbled across, in the creativity literature, was the imprecise and interchangeable use of the terms ‘technique’ and ‘tool.’ In order to avoid repeating this confusion, I adopted the following definition of tool: "A tool is something that serves as a means to carry out a task" (Puccio, Murdock, & Mance, 2006, p. 94). Although there are many tools that have been developed to support the CPS process including: brainstorming (Osborn, 1953) forced connections, ladder of abstraction, hits and highlighting, and the PPCo (Plusses, Potentials, Concerns, and Overcoming Obstacles) (Miller, Vehar, & Firestein, 2001), these tools have been considered cognitive
or thinking tools, and do not invite participants to deliberately access their intuitions.

Isaksen and Tidd (2006) concluded from a recent study that:

> there is a gap that exists in the availability and use of tools that go beyond the rational, cognitive and semantic-based approach… While some additional tools have been created that are based upon the irrational, affective and visual, the number of practitioners including these tools in their work and general acceptance of these 'softer' approaches is lacking, particularly in the business world. (p. 248)

Raising students' awareness of intuition resulted in some unanticipated benefits. One of my students recently identified intuitive tools in the literature that could be applied within the CPS framework for her Master's project (Bissett, 2008). Sixteen intuitive tools were identified and described. As part of my doctoral study, ten of these intuitive tools that were identified were utilized and qualitatively tested amongst eleven graduate students in creativity. My goal was to see if students found these tools effective, and if so, when they found them most effective. The results of this portion of the study may be reviewed in Chapter Six of this thesis.

**When CPS is Taught From a Holistic Perspective, is Personal Transformation More Likely to Occur?**

On occasions when my teaching has veered away from the standard, cognitive, Creative Problem Solving curriculum, and I have introduced intuitive tools, I have often noticed a stronger connection between myself and my students. More importantly, I have seen students achieving personal breakthroughs, and even transformations. For this reason, one of my research objectives was to discover whether using this holistic approach would heighten self-awareness, and ultimately increase the chance of personal
transformations for my students. The definition of transformation that I am using is the “development of revised assumptions, premises, ways of interpreting experience, or perspectives on the world by means of critical self-reflection” (Cranton, 1994, p. 4).

I think it is important to emphasize that I am not advocating a strictly intuitive approach to Creative Problem Solving. Rather, I am arguing for a new, and effective, partnership between the rational and the intuitive. As Klein (2003) stated, neither analysis nor intuition alone is sufficient for effective decision making. Therefore, we need to explore the connection between them, highlighting what can go wrong if we rely excessively on intuition and what can go wrong if we rely too much on analysis. (p. 64)

Intuition needs to be incorporated into CPS training, not as some ‘add-on,’ but as an equal partner, delivered as part of a holistic curriculum. As Miller (2007) stated: “Our education system and the culture as a whole have emphasized rational and linear approaches to problems. A more holistic approach calls for a merging of reason and intuition. When these two elements are connected, student thinking is enriched” (p. 8). Studies (as cited by Puccio, Murdock & Mance, 2006) supported this statement by demonstrating that participants are more effective decision makers when intuition and analysis are combined. However, the essence of this particular research question is not whether intuition has an important role in CPS - that is addressed elsewhere in my study - but rather, whether when CPS is taught in a holistic manner, students are likely to achieve personal transformations.

For this section of the study, I will utilize the same group of eleven graduate students in creativity, to discover the impact, if any, that deliberate intuition has had on their lives. The results of this section may be found in Chapter Seven of this thesis.
Going Beyond The Literature: The Bigger Picture

At the time of writing, Amazon.com listed 3,225 books that claim a connection with intuition. Clearly, some of these books, while entertaining, are not directly relevant to my study. *Psychic Pets: How Animal Intuition and Perception Has Changed Human Lives* (Heathcote-James, 2007), or *Secrets of Chess Intuition* (Beliavsky & Mikhalchishin, 2001), are two good examples. However, there is a significant and growing body of work that is focused on exploring the role of intuition in business, strategy, and problem solving. Many of these books have been published recently. Given that intuition is hardly a new topic, this prompted me to ask, why now?

I discussed this topic with one of my academic colleagues, who remarked, "... even five years ago intuitive approaches wouldn't have been accepted as an integration of our work in Creative Problem Solving, because we have been centered around the cognitive. But now, it is time" (Keller-Mathers, personal communication, February 21st, 2009). Keller-Mathers' view was echoed by Goldberg (2006) when he stated, "the growth of cognitive research, theoretical advances in humanistic and transpersonal psychologies, provocative brain studies, and the remarkable acceptance of Eastern philosophies and disciplines" have made intuition more widely accepted (p. 16).

However, my experience suggests that Goldberg is understating the case. I recently co-presented a session on intuition and CPS, at a creativity conference (Burnett, Francisco, & Bissett, 2009). Our session was scheduled at the same time as a number of other popular speakers. To my astonishment, and delight, my session was quite literally filled to beyond capacity- people were sitting outside the room, just to listen to what we had to say! Intuition, and intuitive problem solving, is clearly a hot topic, and I believe I
am finally understanding why. For the last fifty years, a systematic and scientific approach to solving problems was viewed as the pinnacle of effective human thinking. Recently though, this view has been undermined by a growing awareness that it is no longer in keeping with our daily lives. I think there are two major reasons why an exclusively cognitive approach is no longer thought to be sufficient in the 21st century, and they both have to do with speed.

First, with the exponential rate of technological improvements, information is almost instantly available across the globe. Unfortunately, just because information is distributed instantaneously, doesn't mean that all the information required to make a decision is available at the same time. As a result, decisions are being taken more rapidly, but often in the absence of a complete picture. In reaction to this, organizations are increasingly looking for people who can make intuitive leaps in order to fill in the missing dots. People are becoming more aware of this need, and as a result, they are looking for ways to increase their intuitive capabilities.

Second, the effects of the pervasive information economy have spilled over into the rest of our everyday lives. In the never ending pursuit of productivity, people fill their days with as much activity as possible, and multi-tasking has become a dysfunctional art form. Because of the resulting time famine, I have frequently witnessed people jumping too quickly to solutions. Sadly, their actions often meant that they ended up solving the wrong problem, but in a precise and timely manner.

Although intuition often manifests itself through 'instant' knowing, the process of acquiring intuitive insights appears to require slowing down, and taking time to be mindful, reflect, and visionize before reaching a conclusion. I believe that people are
starting to realize that the current high-speed, multi-tasking world of work is actually damaging their thinking skills, and are looking for more 'integrated' ways of using their minds.

**Going Beyond The Degree**

My greatest moments in teaching, have come from witnessing personal transformation in my students. The college I teach in, for historical reasons, attracts a high percentage of students who have come from 'difficult' backgrounds. It is often the case that a transformation for one of these students is not about the choice of one career over another, but the sudden realization that it is possible to have a career.

It is my sincere belief that we are whole beings with thoughts, feelings, and souls. Some decisions are made with our hearts, some with our heads, and some with our inner selves, but fundamentally, I believe that we are intended to live integrated lives, in which all aspects of ourselves are combined in concert. The need for a holistic approach goes far beyond the realms of Creative Problem Solving. However, I have seen that integrating intuition into the CPS process can pay great dividends. I have therefore chosen to start in a place where I have some influence. I believe that there is a strong need for a holistic perspective within Creative Problem Solving, so that people learning this process may be better equipped with the fundamental tools they need to deal with the complex and multifaceted problems they will experience throughout life.

It is my hope that by helping my students to move beyond the purely cognitive approaches to life, it will allow them to unravel the complexities of the challenges they face, creating deeper meaning, and a clearer vision, something I have personally longed for since I left the theatre.
Chapter Two: Literature Review

Approaching The Literature Review

This review is structured around the basic questions identified in my research. I start by defining each of the key terms, and explore the supporting literature. I will then unpack the literature related to the core theme of the role of intuition within a deliberate creative problem solving process.

What Is Creative Problem Solving?

Creative problem solving is a phrase that has gained both a vernacular definition – usually tied to the idea of thinking “outside of the box,” and a very specific academic definition – relating to a distinct problem solving process. It is this latter definition that I will be using in this document, and exploring in this section.

In order to understand the Creative Problem Solving (CPS) process, it is helpful to define the individual words.

Creative

Unfortunately, defining creativity is easier said than done, largely because there are a myriad of definitions.

“True creativity often starts where language ends” (Koestler, 1964, p. 177).

“Creativity is jazz without the music” (Jack Allday in Aleinikov, Kackmeister, & Koenig, 2000).

The word ‘creative’ has been described as an elusive term, often associated with the arts. It has also been represented as something that is mysterious, magical, full of merriment, and associated with madness (Isaksen, Dorval, & Treffinger, 1994).
Additionally, there have been misconceptions that creativity is reserved for “special” people, is associated with ‘special’ activities (such as the arts), and is just about letting yourself go (Sir Ken Robinson in Azzam, 2009). However, I believe that creativity is a complex, multi-faceted phenomenon that is neither mysterious, nor magical. Rather, it is a natural capability possessed by all healthy individuals, and one that can be easily nurtured through education and the application of various tools and techniques.

For the purpose of this study, I will use the definition of ‘creative’ as seen in the Creative Problem Solving literature, “the production of ideas or options that are both new and useful” (Puccio, Murdock & Mance, 2006, p. 30). Additionally, in recognition of the multi-faceted nature of the topic, I will view ‘creative’ from the Four P’s system of creativity classification, designed by Rhodes (1961). The Rhodes model summarizes four distinct perspectives on creativity that are commonly found in the literature: Person, Process, Product, and Press. ‘Person’ explores the characteristics of a creative person; ‘Process’ refers to the processes through which a person creates; ‘Product’ examines the result of what is created; and finally, ‘Press,’ otherwise known as the ‘environment,’ examines the physical, and psychological ‘space’ within which one creates. For the purpose of this research, I will be focusing on three of these perspectives - the holistic development of the creative person, designing a safe psychological press for the students I will be working with, and understanding how intuition is used in the Creative Problem Solving process.

**Problem**

For many people, ‘problems’ and ‘creativity’ are seen as completely orthogonal concepts. However, Torrance (1965) saw them as intimately related. In fact, he believed
creativity involved:

...becoming sensitive to or aware of problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; bringing tighter available information; defining the difficulty or identifying the missing element; searching for solutions, making hypothesis, and modifying and retesting them; perfecting them; and finally, communicating the result. (p. 43)

For the purpose of this research, the word, ‘problem’ will refer to the difference between current state, and desired outcome. A problem does not need to be something specifically negative, it may simply be an opportunity for development. For example, Jackson Pollock had a “problem” because he didn’t like to use the traditional painter’s tools such as an easel and brush, so instead, he tried utilizing sticks, knives, and heavy dripping paint, which in turn, created an innovative ‘drip’ style of painting (http://www.jacksonpollock.com/bio.shtml). Fred Smith also saw an opportunity for development, when he saw a need for a reliable overnight delivery system, and thus created FedEx, the world’s leading express transportation provider (http://www.achievement.org/autodoc/page/smi0bio-1). Therefore, I do not see problems/challenges with a negative connotation. As Guilford (1967) stated, “To live is to have problems and to solve problems is to grow creatively” (p. 12).

Solving

Finally, what does it mean to ‘solve’ a problem? Throughout history, there are many examples of solutions that have done nothing more than create additional problems. So, the idea that a problem can be solved absolutely probably only exists in some branches of the natural sciences, such as mathematics. For the purposes of this research
project, ‘solving’ will refer to taking action (Puccio & Keller-Mathers, 2007).

The word, ‘process’ refers to “a particular method of doing something, generally involving a number of steps or operations” (Puccio, Murdock & Mance, 2006, p. 29). Deliberate processes to acquire new knowledge, for example, the scientific method, have been in existence for over a thousand years. However, in the last fifty years, numerous deliberate creative problem solving processes have developed. These include Creative Problem Solving (Miller, Vehar & Firestein, 2001; Noller, Parnes & Biondi, 1976; Osborn, 1953; Puccio, et al., 2006), Synectics (Gordon, 1961; Gordon & Poze, 1972; Gordon & Poze, 1980), TRIZ (Mann, 2001; Savransky, 2000; Terninko, Zusman & Zlotin, 1998;) and Six Thinking Hats (de Bono, 1970; 1985; 1992). However, for the purpose of this research, I will be using Creative Problem Solving (CPS).

**The Creative Problem Solving Process**

CPS is a deliberate problem solving process that is based on six stages, with the dynamic balance of divergent and convergent thinking present through each stage. Divergent thinking skills are often viewed through the lens of Guilford’s (1975) four factors- problem sensitivity, fluency, flexibility, and originality. Guilford suggested that these skills are utilized to acquire quantity, diverse categories, and novel ideas. Divergent thinking refers to a “broad search for many diverse and novel alternatives” (Puccio, Murdock & Mance, 2006, p. 39). The guidelines that support this type of thinking include: defer judgment, strive for quantity, make connections and seek novelty (p. 62).

Convergent thinking skills consist of envisioning, evaluating, screening, sorting, prioritizing, supporting, developing, and evaluating (Puccio, et al., 2006). Convergent
thinking refers to being “focused on affirmative evaluation of alternatives” (p. 39). The guidelines supportive of this type of thinking include: use of affirmative judgment, keep novelty alive, check on objectives, and stay focused (p. 62).

The CPS process was originally developed by Alex Osborn, with the assistance of Sid Parnes, out of a vision for creativity education. Osborn introduced creativity concepts and the basic CPS methodology in his seminal book, Applied Imagination (1953). The CPS process has undergone over fifty years of continuous development by Noller, Parnes and Biondi (1976), Isaksen, Dorval and Treffinger (2000), Miller, Vehar and Firestein (2001), and most recently by Puccio, Murdock and Mance (2006).

There is a strong similarity between the original CPS model and the problem solving process outlined by Dewey. See Table 1 for more details.
In addition to the obvious structural similarities, CPS is also similar to Dewey’s problem solving sequence at a more philosophical level. Both systems strongly advocate moving beyond passive data collecting, and into a mode of generating meaning through experience. However, in both Dewey’s work as well as CPS, the role of intuition is left largely unexplored.

In the case of CPS, the omission of intuition can be seen, at least in part, as a
result of the need for scientific ‘respectability.’ As one of the original developers of CPS, Parnes (2004) discussed the history and development of the CPS process. He described the 1940’s as the first generation, ‘pre-historic’ time, when there weren’t any deliberate creativity programs. In the second generation, the 1960’s and 1970’s, there was a shift into more imagery based processes, and in the third generation, beginning in the 1980’s, launched a beginning background of “intuitive imagery process within a strong foreground of the logical CPS model” (p. 9). However, due to the lack of research and the need for purely scientific problem solving, Parnes’ ‘holistic’ legacy was not maintained in the use of CPS. Instead, the entire process was researched, presented, and taught from a cognitive perspective.

The Challenge of Embedding Creativity Within Education

Recognizing the importance of creativity within education is not a new phenomenon. In fact, J.P Guilford, a former president of the American Psychological Association, called education’s neglect of creativity ‘appalling’ (as cited in Osborn, 1992). He delivered this stinging criticism in his inaugural presidential address in 1950. Fortunately, his colleagues were sufficiently embarrassed by his accusations, that they rose to the challenge, and began to focus research on this topic, specifically on creative persons and creative processes (Guilford, 1970).

In the late 1960’s, the International Center for Studies in Creativity at Buffalo State originally tested CPS in higher education through the Creative Studies Project (Parnes, 1987). “This project evaluated four consecutive semesters of a creative problem solving curriculum on various aspects of college students’ behavior- in class, in college, in personal life and in the community at large” (Parnes, 1987, p. 161). These studies
found that students participating in these courses performed significantly better on the production, evaluation, and development of ideas; as well as three of Guilford’s mental operations—cognition, divergent and convergent production; applying creative abilities to other courses; more production in non-academic achieving areas calling for creative performance; and large gains in ability to cope with problems and to participate actively in discussions compared to the control groups (Parnes, 1987, p. 159).

Although their research clearly demonstrated the positive effects of including creativity within curriculum (Parnes, 1987), many people were disappointed with the lack of progress in converting these findings into a practical, applicable, creativity curriculum (Torrance, 1989). This disenchantment caused a subtle shift of focus toward finding ways of embedding creativity within education. This period was dubbed "the Quiet Revolution" (1989) by E. Paul Torrance, a man who is widely regarded as the “Father of Creativity” (Kaufman & Baer, 2006). Unfortunately, even to this day, the Quiet Revolution has remained largely that, and its impact on the educational system has been, at best, limited. Many of our classrooms continue to be factories where students are expected to sit and become rote learners, rather than exploring and discovering knowledge for themselves.

As Sir Ken Robinson stated in a recent interview (Azzam, 2009):

This (creativity) is one of the great skills we have to promote and teach—collaborating and benefiting from diversity rather than promoting homogeneity. We have a big problem at the moment—education is becoming so dominated by this culture of standardized testing, by a particular view of intelligence and a narrow curriculum and education system, that we’re flattening and stifling some of the basic skills and processes that creative achievement depends on. (p. 23)
Perhaps the most surprising aspect of this situation is that it has arisen despite the fact that resources and curricula now exist to support schools in teaching creative thinking. These programs include Odyssey of the Mind (http://www.odysseyofthemind.com/), Future Problem Solving program (http://www.fpsp.org/) and Destination Imagination (http://www.destinationimagination.org/). These programs are largely based on the foundational skills of Creative Problem Solving (CPS). Because intuition isn’t prominent, students are missing this essential function in the development of their problem solving skills.

In the last few years, the quiet revolution has rapidly become more vocal. Richard Florida’s Flight of the Creative Class (2005), called the age we are entering the “creative age because the key factor propelling us forward is the rise of creativity as the primary mover of our economy” (p. 26). Additionally, the partnership for 21st century skills (www.21stcenturyskills.org/) has:

presented a holistic view of 21st century teaching and learning that combines a discrete focus on 21st century student outcomes (a blending of specific skills, content knowledge, expertise and literacies) with innovative support systems to help students master the multi-dimensional abilities required of them in the 21st century. (paragraph 1)

Out of the six skills they described, three have to do with creativity and problem solving- 1. Solving complex, multidisciplinary, open-ended problems; 2. Creativity and entrepreneurial thinking; and 3. Making innovative use of knowledge, information and opportunities (http://www.21stcenturyskills.org). Clearly, there is a significant rise in concern to develop creative thinking abilities in our educational
Why Students in Higher Education?

Problems are universal, no individual or organization is truly free from them. So, given that intuition is an important component in problem solving, why should this research focus on higher education rather than any other context?

Clearly accessibility is an important factor. As a faculty member within the International Center for Studies in Creativity (ICSC), conducting the field research with my students is the simplest option. However, there are more compelling reasons to focus on this sector:

First, the growth in the supply of academically provided creativity training means that our core messages are being disseminated through an ever widening range of channels. Second, I believe that there is a clear need for educational systems to move from transmission to transformation, through the adoption of a holistic approach. In order for this to happen, we must first identify what a holistic approach to creativity education entails.

The Growth in Dissemination Channels

Higher education courses in Creativity and CPS are now taught throughout the world. In a survey of principal countries over the last forty years (Xu, Mcdonnell & Nash, 2005), there has been a rise from nine to thirty-nine universities that offer creativity courses. Many of the schools in the survey are internationally renowned, for example, Harvard, Stanford, Manchester Business School, and Columbia, and they therefore impact a large and increasingly international audience. Offering academically credible guidance about deliberately engaging intuition could be a valuable contribution to this
sector.

Additionally, in a recent study of creativity and innovation degree programs (Yudess, 2010), found thirty universities offering a degree with either “creativity” or “innovation” in the title. The programs and degrees offered by many of these institutions typically fell into domain specific categories such as: business, education, design and technology. While providing creativity education within the context of a discipline is a perfectly valid action, I believe it is important to research the fundamental principles of creativity in as domain neutral a manner as possible, in order to strengthen the generalizability. The International Center for Studies in Creativity (ICSC) at Buffalo State is one of the only centers in the world that offers a graduate program that is not domain-specific. It therefore represents an excellent opportunity to research the role of intuition within a general CPS framework.

**A Holistic Perspective**

I have already used the word ‘holistic’ several times in this chapter. It’s a term that is widely used. Disciplines ranging from architecture through to psychology all claim it as relevant to their work, but what exactly do I mean when I use the word?

Holistic is a great example of the subtle confusion caused by homophones. Spelled in its most common form, holistic, makes reference to the whole, rather than the sum of parts. It goes beyond a simple synergistic view in that a holistic perspective deliberately, and consciously, focuses on the whole, rather than attempting to see the additional benefit gained through the cooperation of individual parts.

However, the term can also be spelled “wholistic,” and this alternative spelling has produced a subtle, but important, shift in meaning. Miller (1996) suggested that
“‘holistic’ implies spirituality or sense of the sacred” while “‘wholistic’ is more material and biological with an emphasis on physical and social interactions” (p. 3). Furthermore he gave the example of Dewey as “wholistic” and Ghandi as “holistic.” In essence, we are watching the development of a neologism and its co-option by researchers, keen to express distinctions in their thinking.

One of the reasons that I have found the different definitions so useful, is that it has helped me to refine my thinking about exactly what I am trying to achieve in this research. After due consideration, I believe that my work should really be categorized as developing a more “wholistic” model of Creative Problem Solving. However, for the purpose of this research, I will be using the concepts of “holistic” education to develop the curriculum for the second part of the study. Therefore, I will be using the word “holistic” throughout the course of this study.

Miller (1996) stated that holistic education is comprised of three different components-1. Balance; 2. Inclusion; and 3. Connection (p. 3). I have attempted to include these components within the design of the holistic Creative Problem Solving curriculum. First, balance needs to be in line within curriculum. Applying this principle to the CPS process allowed me to extend Miller’s original list to encompass the elements of the CPS process. The complete list would therefore include the following areas:

* Individual and group
* Content and process
* Knowledge and imagination
* Rational and Intuitive

-Divergent and convergent thinking
- Deliberate and natural
- Passive and Active modes of thinking
- Being present and having goals

* Taken directly from Miller, J. (1996, p. 4).

In a holistic curriculum, balance is found with the rational and intuitive. In instances when I have veered away from the standard Creative Studies curriculum, and introduced intuitive tools, I have found more connection between the students and myself. Most importantly, I have witnessed students achieving personal breakthroughs with themselves and the challenges they face. Therefore, one of my objectives in this research is to discover whether or not using this balance consistently throughout the college classroom will heighten self-awareness, and ultimately create a personal transformation in the way students approach problems.

Second, Miller referred to inclusiveness as linking together three educational orientations - transmission, transaction, and transformation. Typically in a Creative Problem Solving course, the transmission position is used to “transmit facts, skills and values to students” (Miller & Seller, 1990, p. 5). Some examples include reviewing the history of CPS, explaining the tools and techniques and their functions, and discussing the importance of the various roles in the process. The transaction position, where “the emphasis on curriculum strategies that facilitate problem solving (cognitive process orientation)” (Miller & Seller, 1990, p. 6) is clearly the source from which we teach CPS. In a standard class, we give students extensive opportunities to facilitate problem solving with themselves and with others.

It is unusual to find the transformational position, or to “promote personal and
social transformation” (Miller & Seller, 1990, p. 8) in the teaching of CPS, because it is based on the cognitive and not the inner self. For the purpose of this research, I am using the definition of transformative learning described by Cranton (1994), as the “development of revised assumptions, premises, ways of interpreting experience, or perspectives on the world by means of critical self-reflection” (p. 4). Despite the fact that the cognitive approach to teaching CPS is not conducive to transformation, the topic of creative thinking is – in my experience – absolutely central to the process of transformation. In other words, developing the capability to reframe one’s view of reality is a key transformational skill.

Finally, Miller (1996) discussed the importance of making connections:

the relationship between linear thinking and intuition, the relationship between mind and body, the relationships between various domains of knowledge, the relationship between the individual and community, the relationship between self and Self. In the holistic curriculum, the student examines these relationships so that he/she gains both an awareness of them and the skills necessary to transform the relationships where it is appropriate. (p. 8)

In essence, my hope is to discover if, and when, a holistic approach to education and Creative Problem Solving will ultimately build stronger relationships.

What Is Intuition?

Developing precise definitions for mental processes is never simple. The hidden nature of the mind's workings inhibits easy observation. This problem is further compounded, in the case of intuition, by virtue of the fact that there is no apparent process to observe, because – for many people - the insights just suddenly appear from ‘no where.’ However, intuition has been the subject of academic research for years, and
in order to understand the topic from a scientific perspective, I conducted an analysis of the peer-reviewed psychology journals, in the hope that it would yield a comprehensive overview.

In a recent search (July 4, 2010), EBSCO PsycINFO yielded 5203 results for the term “intuition” in the subject line of articles, and a further 2144 results for the same term in the title field. My initial appraisal of these articles showed that a number of them were completely unrelated to the field of creativity and problem solving. Next, I did a Proquest keyword search using "intuition", "creative", and "problem solving" as keywords in theses and dissertations. Proquest returned zero results. I then did a Proquest search of "intuition", "creative", & "problem solving" in citations and abstracts for ALL the databases on the system. This returned 35 results, 11 of which were in theses and dissertation (this time in citations and abstracts as opposed to keywords). I reviewed all 35 abstracts, and found only one that was relevant (Eubanks, Murphy, & Mumford, 2010).

I therefore refined my search by concentrating on the six major journals of creativity. The results of this more focused search were as follows: The Creativity Research Journal yielded 5 articles, the Journal of Creative Behavior had 6 articles, Creativity and Innovation Management had 0, Thinking Skills and Creativity had 0, the International Journal of Creativity and Problem Solving (formally the Korean Journal of Thinking and Problem Solving) had 1, and the Psychology of Aesthetics, Creativity, and the Arts had 1, for a total of 13 articles with intuition as a “subject” word.

Given how many eminent people have discussed the critical role of intuition in their creative processes, I was astonished to find only thirteen articles related to intuition
and creativity. Clearly, there is a gap in the creativity literature, and more rigorous work needs to be done in this area.

Despite the low volume of articles, I was able to identify descriptors of intuition from six of the papers, and they are listed below. In order to provide a simple form of triangulation, I have only cited descriptors that were used in more than one journal article: hunch/gut feeling (Kaufman, 2009; Langan-Fox & Shirley, 2003; Policastro, 1995; Rockenstein, 1988), tacit knowledge (Langan-Fox & Shirley, 2003; Policastro, 1995), unconscious (Eubanks, Murphy, & Mumford, 2010; Kaufman, 2009; Langan-Fox, 2003; Rockenstein, 1988), sensing patterns (Dollinger, Palaskonis, & Pearson, 2004; Eubanks, Murphy, & Mumford, 2010; Langan-Fox & Shirley, 2003; Policastro, 1995), knowing without knowing why (Langan-Fox & Shirley, 2003; Rockenstein, 1988), and visionary (Langan-Fox & Shirley, 2003; Markley, 1988; Rockenstein, 1988).

Intuition, based upon the results of this literature review, is generally seen as simply a sudden awareness that an answer has come to mind, but from where and how, is unknown. This description corresponds very closely with the language typically used by my students, to describe their experience of intuition within the problem solving process.

Even though the exact nature of the process is obscure, researchers have attempted to classify elements of the experience, and through that construct conceptual models to explain its operation. In general, these models can be broken down into two schools of thought. The first school suggests that intuition comes from a “synthesis of prior knowledge - A blend of logic, experience, and subconscious information that's stored in your mind and recalled when needed” (Robinson, 2006, p. 3). The second school believes that it comes from “a Higher Power - Divine intelligence, a ‘compass of
the soul’ that guides, informs, and directs you toward success" (Robinson, 2006, p. 4). Both perspectives could contribute to understand the role of intuition within CPS, and therefore for the purpose of this study, I will examine them both.

Theorists from the first school of thought (Gigenzer, 2007; Khatri & Ng, 2000; Klein, 2003; Simon, 1987a;) believed intuition is a process of “relating various elements of information” (Raidl & Lubart, 2001). They suggest that insight comes from prior knowledge that is reconstructed in some ambiguous way, giving the information new meaning. Raidl and Lubart stated (2001) that, “This is due to the subconscious nature of the associative processes and to the fact that they allow very distant content areas to be put together” (p. 220). Intuition, as described in this school of thought, considers expertise as a facilitator for intuitive insight. The higher the level of expertise one has in a given area, the higher level of intuition one potentially has on the situation. For example, an experienced teacher might intuitively know that a student may be having difficulties at home, although it is not outwardly evident in the work he is producing. A novice teacher might not have the same intuition, because his experience in dealing with troubled students might be limited. Gigenzer stated (2007) the rationale behind this type of intuition is derived from two components: “1) simple rules of thumb which take advantage of 2) evolved capacities of the brain” (p. 18).

Theorists from the second school of thought (Harman & Rheingold, 1984; Maslow, 1992; Miller, 1994; Palmer, 1998; Sisk & Torrance; 2001) argued that intuition comes from a higher power. Many believe that in order to move from the mind to the whole self, it should be done through the sacred unconscious. Maslow (1992) considered this as tapping into the “deeper self” (p.100), creating an openness to what lives in our
unconscious— to play, fantasize, dream, and let loose. This process is also considered mysterious and indefinable, but it is a source of wisdom that we tap into at the highest level. As Khatri and Ng stated (2000), “intuition allows us to synthesize isolated bits of data and experiences into an integrated picture. It is a holistic perception of reality that transcends rational ways of knowing” (p. 57).

Frances Vaughan (1979) combined these two schools of thought, with a more holistic view of intuition. She described four levels of intuition: physical, emotional, mental, and spiritual. The physical level of intuition is characterized by “a strong bodily response in a situation where there is no reason to think anything unusual is going on” (Vaughan, p. 66). For example, a man is walking down the street, when suddenly his muscles tighten. He doesn’t know where this physical sensation is coming from, but intuitively he senses fear in his environment. At the second level, emotional, “intuition comes into consciousness through feelings” (Vaughan, p. 69). This is found when a person senses emotional “vibes,” such as love at first sight or that someone has a negative energy, despite not knowing anything about him. This is similar to Raidl and Lubart’s description (2001) of “socioaffective intuition, which concerns interpersonal relationships” (p. 218). At the third level of intuition, the mental level, intuition “comes into awareness through images or what is considered ‘inner vision’” (Vaughan, p. 73). Vaughan believed this happens when the insight or “aha” moment is likely to occur in the problem solving, mathematics, or scientific inquiry. This is similar to the “applied intuition” as described by Raidl and Lubart (2001). The highest level of intuition is considered the spiritual. “Pure, spiritual intuition is distinguished from other forms by its independence from sensations, feelings, and thoughts” (Vaughan, p. 77). Intuition at this
level stems from a deep inner knowing of self and world.

The intuitive function is considered both the opposite of a cognitive function and the complementary function, because the process itself cannot be defined, but it works in conjunction with the cognitive. In problem solving, it can be viewed in two ways. First, it is seen in the initial instinct or gut reaction of why one should or should not pursue an option. Although the person “knows” this is the right option, he or she cannot explain how they have reached that conclusion. In his book, Blink, Gladwell described this as "thin-slicing," which he referred to as “the ability of our unconscious to find patterns in situations and behavior based on very narrow slices of experience” (2005, p. 23). He believed that we innately make accurate, quick judgments, based on our tacit knowledge, expertise, and experiences, which are logically difficult to identify.

Second, after spending a significant amount of time working on a problem, and then allowing for incubation time, there is an “aha” moment of an insight to a particular problem, which is viewed as intuition. This parallels the creative process defined by Wallas (1926) – preparation, incubation, illumination, and verification. The incubation and illumination stages call upon our intuition, while the preparation and verification call upon our deliberate analytic tools (Miller, 2007). By using deliberate CPS tools to prepare, and provoking incubation through the use of intuitive tools and techniques, then we might deliberately trigger an illuminative insight. This insight could be further verified and critiqued through the use of additional CPS tools. This further validates the need to teach others how to solve problems utilizing both analytical and intuitive tools and techniques.
The Intuitive Person

What do people mean when they say “I am a very intuitive person?” In common parlance the reference is usually interpreted as meaning that they use their intuition a great deal; often receiving flashes of insight from unknown sources. However, the degree to which one uses their intuitive skills is only one way of thinking about this question. Another way to interpret the answer would be to assume that the person was very skilled in using their intuition, but to make no assumption regarding how frequently they used it. In other words, when considering the intuitive person one could equally validly construe them as possessing a great level of skill, which they choose to use infrequently, or that they rely to a great extent on their intuition, but with no indication of how well their intuitive functions operate. This orthogonal construction of preference against ability is an important principle in many of the psychometric instruments (Kirton, 2003). The authors of the instruments often go to great lengths to separate the two dimensions, in order to be clear about what they are really measuring. One of the earliest theorists in this area was Carl Jung.

Jung believed that people had preferences for certain mental functions, and therefore tended to use those functions more often than their counterparts. Jung decomposed the mental processes into a small set of operations. The primary ones were: gathering information, and making decisions. The perception function suggested that individuals gather information either through a concrete (Sensing) or an abstract (Intuition) manner (Type Resources, p. 10). When people use a “Sensing” function, they “are using their five senses and focusing on facts,” whereas the “Intuiting” function is about “connecting ideas and concepts and focusing on options and possibilities” (p. 10).
Jung’s work, and his perspective on intuition, was further developed into the well-known psychological measure, the Myers-Briggs Type Indicator (MBTI). Strictly speaking, both Jung, and the authors of the MBTI, described Intuition as a Type preference, rather than a trait (Type Resources, p. 10). In other words, they didn’t present intuition as a quantifiable construct. They simply measured the degree to which someone has a preference for that mental process.

The MBTI is the most widely used psychometric instrument in the world (Type Resources, p. 8). As a result of being able to measure preference for intuition, coupled with a reasonably high level of reliability and validity (Myers, McCaulley, Quenk, & Hammer, 1999), many researchers have been drawn to the instrument when conducting intuition related research (Langan-Fox & Shirley, 2003). However, I experience a deep disquiet with the Jungian approach to intuition, for two reasons.

First, as a qualified user of the MBTI, I have administered and debriefed this measure with over two hundred people. Despite the fact that I always stress that this psychometric does not measure high or low trait, but rather reports preference, I frequently hear people describe themselves as “high intuitive” or “not intuitive at all,” based on the MBTI profile they received. Although the instrument takes pains to emphasize its non-judgmental principles, I still feel the measure often unintentionally pigeonholes individuals into believing he/she is intuitive or not.

Second, Jung places intuition as a pole within the perception function. Clearly, the ability to ‘thin slice’ a situation is something that many people would recognize as part of their daily experience. However, by locating intuition within perception, Jung has effectively barred it from a role in the decision making process. In my opinion, intuition
is a process that lies across both perception and decision making.

To make matters worse, Agor (1991) argued that highly intuitive managers tend to be the “most innovative in problem solving,” “more insightful” and “better at finding new ways of doing things” (p. 13). He believed that there are two types of management styles – intuitive and thinking, and that exploiting the strengths of each will result in an effective team.

Jung, and the MBTI team, placed intuition within the context of perception, and Agor then further narrowed the range by suggesting that it was closely related to innovation skills. This categorization would seem to imply that intuition is not part of the judging (or decision making) process, a position that is at odds with the daily experience of many people.

Let me return to the original question, at the start of this section. Is there such a thing as an intuitive person, and by implication can anyone be described as completely unintuitive? I believe that intuition is a natural part of who we are, and that it can be developed and nurtured, much like creativity. The question we must really ask is therefore not “are you or are you not intuitive?” But rather, to what extent have you developed your intuitive skills, and to what extent do you choose to use them?

**Cultivating Intuition in the Creative Problem Solving Process**

If intuition is considered indefinable, how could it be taught within a deliberate Creative Problem Solving process? A possible answer to this question lies in the fact that while we may not be able to clearly define intuition, we can describe the conditions under which it tends to emerge. In an earlier analysis of these conditions, my colleague and I (Francisco & Burnett, 2008), looked at various ways to deliberately
cultivate intuition within Creative Problem Solving.

The key concept within our analysis, was that intuitive insights could be encouraged, and even elicited, through a range of different techniques, rather than a single approach. These techniques were classified along a continuum, and range from “passive,” which involves the deliberate use of incubation and excursions, through to “active,” the deliberate use of tools that focus on gut feeling insights. Through further discussion and analysis, I have focused on a third type of intuition- “balanced” intuition. The model of this continuum may be seen in Figure 1.

<table>
<thead>
<tr>
<th>Passive Intuition</th>
<th>Balanced</th>
<th>Active Intuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Stepping away from the problem)</td>
<td>(Deliberate focus on problem)</td>
<td>(Focus on the present)</td>
</tr>
<tr>
<td>Techniques: Allow time for Incubation</td>
<td>Reflection</td>
<td>Techniques: Deliberate tools that acknowledge intuitive insight</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>Visioning</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 1. Passive to Active Intuition Model*

**Passive Intuition.**

The left side of the continuum - referred to as “passive” - is synonymous with incubation. Incubation is described as a purposeful break from the active pursuit of a solution to a problem (Puccio, et al., 2006), and - as stated earlier - is seen as a necessary precondition for illumination, which is intuitive insight.

There have been a number of experimental studies (as cited by Sio and Rudowicz, 2007) which have proven that participants who were given an incubation period outperformed participants who worked continuously. Additionally, in a recent meta-analysis of empirical studies on incubation, Sio and Ormerod (2009) found that “individuals solving creative problems were more likely to benefit from an incubation period” and that “positive incubation effects found with creative problems were a direct
reflection of their multiple-solution nature” (p. 107). The literature therefore suggests that one simple way to embed intuition within the overall CPS process is to encourage incubation through better process design.

However, when should incubation be used? In a theoretical paper, my colleague and I (Francisco and Burnett, 2008) discussed indicators that might suggest deliberate incubation as an appropriate course of action, based on our own experiences working in groups. These indicators included:

- Existing attempts at problem solving / solution finding are not producing the desired results or insights;
- Groups are not naturally taking opportunities to incubate during breaks in activities;
- At the end of a session, a group feels that there is unexplored territory, but is unable to define it rationally;
- When a group is clearly not prepared to deal with the situation at hand or is not making the time to work towards its resolution;
- The gap between divergent and convergent phases is not producing additional intuitive contributions. (p. 246)

- We further discussed how to incubate in a Creative Problem Solving session:
  - Deliberately asking the subconscious mind to help;
  - Telling your intuition that you trust that it will help you find a solution;
  - Purposely detaching yourself from the problem / solution;
  - Distracting the conscious mind with another activity, e.g. juggling, cycling, cooking, using a trampoline or walking, in order to leave the thinking to the
• Adopting a relaxed frame of mind - pursue the 'three Bs' - bed, bath or bus.

(p. 246)

**Balanced Intuition.**

The middle of the continuum represents “balanced” intuition, and refers to being present in the process and problem, instead of forcing results. Balanced intuition has three components: reflecting on the past, being mindful of the moment, and imagining the future. This schema echoes Dewey’s criterion of experience-continuity, “wherever one positions oneself on the continuum- the imagined now, some imagined past, or some imagined future, each point has a past experiential base, and leads to an experiential future” (as cited in Clandinin & Connelly, 2000, p. 2).

Historically, reflection has been correlated with intuition. Thomas Reid (1710-1796) was a pioneer scientist who came up with a theory of intuition by building on the concept of reflection. He believed in the basic principle of “‘common sense’ philosophy, whereby intuitions are tendencies to mental action, aspects of the fundamental constitution of the human mind, which regulate the conscious experience of all humans from birth” (as cited in Langan-Fox and Shirley, 2003, pp. 207-208).

When thinking of reflection. Schön stated (1983),

> Through reflection, we can surface and criticize the tacit understandings that have grown up around the repetitive experiences of a specialized practice, and can make new sense of the situations of uncertainty or uniqueness which we may allow ourselves to experience. (p. 61)

In Creative Problem Solving, it is critical to understand the impact of previous experiences in order to create novel solutions in the future. Experiences naturally create
more patterns and paradigms that gradually become solidified in our minds, and may lead to difficulty “seeing” outside of our own eyes. Therefore, if we are searching for a new solution, we need to ask the questions, what type of patterns and paradigms have been created? How might we break those patterns? What might be stopping us from achieving our goal? This will allow our mind to work at an “intuitive level, sorting through all types of information: emotions, events, data, logic, images, facts, assurances, goals, plans, to-do lists, and anything else that is available” (Cartwright, 2004, p. 10).

The second component of balanced intuition is contemplation or “the state of consciousness where we are deeply attentive and often experience a sense of awe and wonder” (Miller, 1994, p. 4). In facilitating CPS, I often witness others, who in upset and rushed minds attempt to solve their problems precisely, the wrong way. This is because they are so set on finding a solution, that they are not actually present, and therefore, do not understand the problem itself. I believe bringing in different types of meditation techniques such as insight, mindfulness, and movement, will help overcome this need-for-quick-solution challenge.

Meditation is often associated with “spiritual and philosophical traditions around the world as a basic tool for the cultivation of mental clarity, insight, creativity, inner calm, well-being, compassion, and a range of other personal and transpersonal qualities” (Sarath, 2006, p. 1817). Unfortunately, due to this association with spirituality, meditation has not been included in the CPS curriculum. This is despite the fact, according to Gowan (1992), that there have been numerous meditation studies that show a clear and positive impact on creativity, and therefore suggest that it has a valid role to play within higher education. Having said that, I believe it is important in an academic
institutions to teach meditation from a neutral ground, and not from any particular religious perspective.

Finally, the third component of balanced intuition is imagining the future through visualization. “The ability to imagine, to conjure up images and or visions of things different than our ordinary reality, has always been recognized as the hallmark of innovation” (Harman & Rheingold, 1984, p. 82). Parnes (2004) book, *Visionizing*, outlined a program that could help someone:

Imaginatively dream great dreams; imaginatively translate them into whatever first steps can be accomplished in the coming weeks, months and year; and to lay out specific action plans for implementing as many additional portions of these dreams as possible in subsequent years. (p. 26)

I believe that, in conjunction with the CPS process, a person can create images to help manifest their desired outcome of future states. As Vaughan stated, “Imagery is the universal language of the unconscious” (p. 85), and tapping into this unconscious will help develop intuitive insight.

**Active Intuition.**

The right side of the continuum, is called “active” intuition and focuses on the “blink” (Gladwell, 2005) of an eye or gut feeling (Gigenzer, 2007) intuitive insights. The deliberate tools and techniques listed under this heading focus on the problem itself, and attempt to actively engage the participants in “listening” to their own intuition. Isaksen and Tidd (2006) concluded in a recent study that:

There is a gap that exists in the availability and use of tools that go beyond the rational, cognitive and semantic-based approach… While some additional tools have been created that are based upon the irrational, affective and visual, the number of practitioners including these tools in
their work and general acceptance of these 'softer' approaches is lacking, particularly in the business world. (p. 248)

In reviewing the literature, I have found a number of books that provided deliberate tools and techniques to access intuition (Amorde, 2009, Robinson, 2006, Rosanoff, 2001), however, none of them focus on using tools within CPS. A recent study (Bissett, 2008) reviewed the literature to determine tools that might be used in the various stages of the CPS process.

Towards a Holistic Model of Creative Problem Solving

The CPS model has evolved through a number of stages (Isaksen, Dorval & Treffinger, 2000; Miller, Vehar & Firestein, 2001; Noller, Parnes & Biondi, 1976; Osborn, 1953; Puccio, Murdock & Mance, 2006) during the last 50 years. Each new version of the process has evolved to meet the needs of the time, and the interests of the primary researchers. The most recent version of the CPS model, Puccio, et al. (2006), is no exception. Puccio, et al, have redesigned the process in order to better link creativity with the strategic requirements of modern organizations. And, in addition, they have embraced the recent work on emotional intelligence, by giving much greater weight to the affective skills, which are so critical to the interpersonal elements of successful innovation.

The combination of thinking, affective and creative skills has produced, what could arguably be called, a holistic model of creative problem solving. However, this title would be unwarranted, in my view, if the model did not incorporate the intuitive dimension. Fortunately, the researchers were aware of the importance of intuition, and made an attempt to include it by making specific reference to the role of incubation.
The new model includes incubation under the title of “wild card.” This new element is positioned as an additional guideline in both divergent and convergent thinking. Additionally, Puccio et al. (2006) rejuvenated the deliberate link between intuition and a deliberate creative problem solving process. The authors identified two distinct capabilities that were enhanced by the intentional application of intuition: sensing gaps and staying focused while converging.

According to Puccio, et al., (2006), sensing gaps is about purposefully becoming aware of intuition, your hunches and your gut feelings and choosing to act on them. Although the authors presented this capability in affective terms, their description closely matches the way in which intuition is typically described. Their text refers to our innate ability to recognize that something “is missing” or “not adding up” without being able to explain how this conclusion was reached. Further more, the capacity to identify gaps is reinforced by experience, i.e. experts are more able to perform this function, and this suggests the development of intuitive capability, rather than a deepening of emotional intelligence.

Staying focused while converging, one of the principles of convergent thinking, was described as “balancing intuition with critical analysis” (Puccio, et al., 2006, p.79). They further explained (citing Palus & Horth; Guzzo & Palmer) that critical analysis was a necessary countervailing factor that balanced the ambiguity associated with intuitive convergence, and that intuition provided an elegant escape from the quagmire of “analysis paralysis” that can, so often, emerge from strictly objective decision-making.

However, while intuition is receiving a new level of attention within the revised CPS model, for example it was mentioned in the text as an assistor to determining which
alternatives were most promising to pursue (pp. 55-56, p. 79), it was not made explicit how and when it should be used throughout the process. Further work by my colleague and I (Francisco & Burnett, 2008), proposed a new model of CPS where the cognitive and affective skills are integrated with intuition throughout the whole process. This new model may be seen in *Figure 2*. In this new model, we placed deliberate intuition at the center, marked in the color grey. This color is splashed throughout - like a sunray - so that it demonstrates that intuition may occur at any stage of the process.

*Figure 2.* Integrated Creative Problem Solving Thinking Skills Model

I believe that this latest version of the CPS process places equal weight on the
intuitive aspects of the process, and may help to foster research into the
operationalization of the intuitive capability. It is my hope that the development of a
holistic model of creative thinking – incorporating both intuitive and cognitive principles
- will ultimately help to support and encourage the growth of truly holistic problem
solving. In essence, I want to help my students harness the full range of their creative
capabilities, and to move beyond creating a better soda, and into creating a better world.
Chapter Three: Methodology

Overview

This investigation employed a qualitative research design in order to understand: how practitioners define intuition and its role in the Creative Problem Solving (CPS) process; the impact of intuitive tools and techniques; and the effect of teaching CPS from a holistic perspective.

Understanding How Practitioners Define Intuition and its Role in the Creative Problem Solving Process

Defining and exploring intuition is difficult, largely because it is an internal, and ephemeral, experience. This inherent difficulty has helped to keep the topic in the realm of the arcane. However, intuition is not unique in offering these challenges. For example, creativity was, for many years, regarded as equally inaccessible to researchers. Fortunately, through the careful application of a wide range of techniques, academics gradually developed an understanding of the creative process, and crafted ways in which it could be more effectively harnessed.

This research project aims to build upon existing qualitative research in the areas of both creativity and intuition, in order to understand the role that intuition plays in the Creative Problem Solving process, and to provide a model that will help to guide further research.

The Impact of Intuitive Tools and Techniques

Understanding the role of intuition within the CPS process is an important step. In order to take advantage of that understanding it may be useful to develop specific tools
and techniques that deliberately enhance the intuitive experience. Tools of this nature already exist for the more cognitively oriented aspects of Creative Problem Solving. But very little work has been done trying to connect the intuitive tools that exist in other domains, for example mindmapping, with the CPS process. This element of the research project will explore the effect of a subset of these tools. The research will be conducted by examining the experiences of a group of graduate students who are taking a Holistic Approach to Creative Problem Solving course.

**Teaching CPS from a Holistic Perspective**

Creative Problem Solving has traditionally been taught with a transactional approach. My experience with teaching CPS, to both undergraduates, and graduates, suggests that studying the topic might engender significant personal transformation, if it were taught from a more holistic perspective. This part of the study examines the impact of deliberately adopting a more holistic approach, by incorporating affective and intuitive skills, tools, and techniques, in CPS education.

**Methodology**

Given the unique, and highly personal nature of intuition, it seems most appropriate to explore these questions, and develop the explanatory model, through a qualitative analysis of individual experience.

Qualitative analysis offers researchers a dramatically different way to investigate the world. In essence, qualitative research tries to capture and work with the richness inherent in “peoples’ lives, lived experiences, behaviors, emotions and feelings” (Corbin & Strauss, 1998, pp. 10-11). However, what is arguably more important is that qualitative researchers openly acknowledge that they "approach their studies with a..."
certain paradigm or world view, a basic set of beliefs or assumptions that guide their inquiries” (Creswell, 1998, p. 74). In taking this stance, researchers recognize and attempt to move beyond the bias created by their personal ontological, epistemological and axiological positions, and instead recognize that they are part of the context and yet - with the use of the right tools- they may still find the 'truth' in a situation.

In reviewing the tools available to me, I was immediately drawn to Grounded Theory (GT). The theory appealed because “grounded theory methods keep researchers close to their gathered data rather than to what they may have previously assumed or wished was the case” (Charmaz, 2003, p. 312). I felt that staying grounded in the data was essential because I hoped it would help me see the differences in people’s experience of intuition. In addition, GT seemed flexible enough to accommodate the range of data I was likely to unearth. Finally, the theory allowed me to go beyond simply describing the participants’ experiences, and into developing some guiding principles to support the deliberate inclusion of intuition within the CPS framework.

At its core, CPS is a practical process that is intended to help practitioners develop better solutions to difficult problems. It was therefore very important to me that any theories that I created could be expressed in terms that were accessible to the practitioner community. Once again, Grounded Theory seemed an ideal fit for this objective

to generate theory…we suggest as the best approach an initial systematic discovery of the theory from the data of social research. Then one can be relatively sure that the theory will fit and work. And since the categories are discovered by examination of the data, laymen involved in the area to which the theory applies will usually be able to understand, while sociologists who work in other areas will recognize an understandable
theory linked with the data of a given area. (Glaser & Strauss, 1999, p.p 3-4)

**What is Grounded Theory?**

Grounded theory was conceived by sociologists Glaser and Strauss and first described in their book, *The Discovery of Grounded Theory* (1967). Grounded Theory “begins with the area of study, and allows the theory to emerge from the data” (Strauss & Corbin, 1998, p. 11). They went on to say that “grounded theories, because they are drawn from data, are likely to offer insight, enhance understanding, and provide a meaningful guide to action” (Strauss & Corbin, 1998, p. 11). In essence, it is an inductive approach, but one in which “there are no preconceived ideas about what the theory will be” (Wiersma, 2000, p. 18). Because of the complex nature of intuition, combined with the lack of developed intuition theory within the discipline of CPS, starting from the data seemed to be the only logical place to begin. As Creswell (1998) stated, “the purpose of a grounded theory study is to generate or discover a theory, an abstract, analytical schema of a phenomenon, that relates to a particular situation” (p. 56). My research quest was to uncover the theory or theories of the role of intuition in Creative Problem Solving.

Developing a solid, applicable, theory was extremely important to me. I believed that intuition had a central role to play in CPS, but that it could only play that role if it were possible to develop tools and techniques to support its practical application. Grounded Theory offered a well defined route to move from a messy awareness of phenomena through to the creation of intelligible models. The basic strategies that I expected to follow were neatly described as:

(a) simultaneous data collection and analysis, (b) Pursuit of emergent
themes through data analysis, (c) discovery of basic social processes within the data, (d) inductive construction of abstract categories that explain and synthesize these processes, (e) sampling to refine the categories through comparative processes, and (f) integration of categories into a theoretical framework that specifies causes, conditions and consequences of the studied processes. (Charmaz, 2003, p. 313)

Although grounded theory provided a clear route map, the approach has been subject to various schism that have resulted in different ‘flavors’ of theory emerging. Charmaz (2003, p. 313) described two forms of grounded theory—objectivist and constructivist. Both follow the same core strategies, but they differ in the way they apply some principles. For example,

Objectivist grounded theory emphasizes the viewing of data as real and of themselves. This position assumes that data represent objective facts about a knowable world. The data already exist in the world and the researcher finds them. In this view the conceptual sense the grounded theorist makes of the data derives from the data: meaning inheres in the data and the theorist discovers it. Objectivist grounded theorist believe that careful application of their methods produces a theoretical understanding. (Charmaz, 2003, p. 313)

The data set in the first part of this study was collected through an online questionnaire, and therefore seemed to be better analysed through the objectivist lens.

The constructivist approach views ‘truth’ in a different way. It “places priority on the phenomena of study and sees both data and analysis as created from the shared experiences of researcher and participants and the researcher’s relationships with the participants” (Charmaz, 2003, p. 313). Researchers who adopt a Constructivists perspective “study how participants construct meanings and actions and they do so from as close to the inside as they can get” (Charmaz, 2003, p. 313). Furthermore “a
constructivist approach takes implicit meanings, experiential views, and ground theory analyses as construction of reality” (Charmaz, 2003, p. 314). In the second part of this study, I, as the researcher was also the teacher in the class of students/participants. My intimate involvement in the “experience” meant that it was difficult to remain objective and on the outside. Therefore, recognizing that I was already operating “very close to the inside” and also that I was involved in the “construction of reality” I approached the second part of this study from a more constructivist point of view.

In hindsight, I have recognized that even though I employed an objectivist approach to obtain some of my data, the construction of the models – and the bulk of my thinking – was based on a much more constructivist approach.

**Overview of Two Parts of the Study**

Given the complexity of researching intuition, I chose to develop this study in two parts. The parts will be explained over the next four chapters. Part one of the study involved:

• Designing an on-line questionnaire, and sending to 500 creativity practitioners;
• Analyzing the resulting data to extract underlying definitions of intuition;
• Exploring the reported use of deliberate intuition in the practitioner’s work.

The second part of the study involved:

• teaching a range of intuitive problem solving tools to a group of 11 graduate students;
• analyzing the responses created by the students which described their experience of using the tools. The analysis was conducted using both a cognitive CPS tool, and a range of intuitive tools;
finally, the students’ responses were reexamined, looking for evidence of personal growth, greater connection to others, and any transformation in their approaches to problem solving.

**Design and Procedures**

**Part One Participants**

In order to obtain suitable participants who might provide important insights into my first two questions, “How do creativity practitioners construe intuition,” and “What role does intuition play in Creative Problem Solving,” I sent an invitational email to members of the International Center for Studies in Creativity email distribution list. This list comprised people who were affiliated with the Center-as alumni, current students, professors or visiting professors. I chose this group because by their membership of this list, they had demonstrated their interest in the field of creativity. In addition, as students, alumni and faculty, their experience in the application of CPS meant that they could provide an informed view. The invitational email (see Appendix 1) provided background to the research, an invitation to participate, and a direct link to the consent form and questionnaire. When a participant clicked on the link, they were taken to the consent form, and a list of 20 questions (see Appendix 2). Half of the questions on the form gathered information regarding the individuals’ demographics, and the other half were related to the two questions that guided this aspect of the study. An initial version of the questionnaire was piloted with a total of 10 people. The testers were organized into groups of two. A copy of the questionnaire was sent to the first group of two and their feedback was then incorporated into a revised version that was then sent to the next group of two. This process was repeated until all 10 testers had reviewed the questionnaire, and
no further changes were proposed.

I consulted with some of my academic colleagues, who had conducted similar questionnaires with this group. Their advice was to leave the questionnaire ‘open’ for 3 weeks, because very few people would respond beyond that time. I followed their advice, and by the time I closed the survey, I had received responses from 100 people. The primary objective of the questionnaire was to obtain informed insight into the key questions. It was therefore not important for the respondents to be representative of some larger group. However, for completeness, I include the following charts that describe the population of people who answered the questionnaire:

**Figure 3.** Reported Gender
Figure 4. Level of Education in Creative Problem Solving

Figure 5. Primary Academic Background
**Figure 6. Age of Participants**

<table>
<thead>
<tr>
<th>Age Ranges</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-29</td>
<td>7</td>
</tr>
<tr>
<td>30-39</td>
<td>30</td>
</tr>
<tr>
<td>40-49</td>
<td>28</td>
</tr>
<tr>
<td>50-59</td>
<td>26</td>
</tr>
<tr>
<td>60+</td>
<td>9</td>
</tr>
</tbody>
</table>

**Figure 7. How do you use Creative Problem Solving**

***People were permitted to select more than one checkbox, so percentages add up to more than 100%***
What is your current level of expertise in the Creative Problem Solving process?

Figure 8. What is your current level of expertise in the Creative Problem Solving process?

Additionally, participants who completed the survey came from a wide range of occupations including:

- Consultant (12)
- K-12 Educator (11)
- University Professor (9)
- Trainer/Facilitator (9)
- Learning Skills Strategist (2)
- Academic Staff (2)
- Engineer (2)
- Artist (2)
- Student (2)
- Graphic Designer (2)
• Communication Strategist
• Entrepreneur
• Consumer Researcher
• Event Coordinator
• Social Worker
• Retired
• Project Manager

Data sources.

Data were obtained from the 100 questionnaires. There were twenty questions in total, and the first ten questions asked the participants’ demographics (see above). The other ten questions related to the questions that guided the first part of the study, and are as follows:

1. How would you define intuition?
2. Do you consider yourself an intuitive person? Why or why not?
3. What does intuition sound like to you (what words, noises or sounds would illustrate that it is happening)?
4. What does intuition look like to you (what behaviors would you see in yourself and others that would illustrate that it is happening)?
5. What does intuition feel like to you (what physical responses would you have that would illustrate it is happening to you)?
6. Can you recall a time when you used intuition in problem solving? If so, please explain.
7. Do you make it a practice to foster the use of intuition in your CPS
sessions? If so, in what ways have you fostered intuition?

8. In your opinion, is there a role for intuition in CPS? If so, how would you describe the role? If not, please explain.

9. Have you ever used any deliberate intuitive tools or techniques when engaged in CPS? If yes, please explain the tools you used.

10. May I contact you for more information?

Part Two Participants

In order to answer the final questions in this research study, “Do students find deliberate, intuitive tools and techniques effective in CPS? If so, when do they find them the most effective?” and “When CPS is taught from a holistic perspective, is personal transformation more likely to occur?” I needed to find a small group of participants with whom I could work with in depth on the deliberate use of intuition in CPS.

Given my role as a graduate faculty member in the Creative Studies department at Buffalo State, I approached my department and requested to teach an elective I had developed as part of my doctoral studies at OISE, called Holistic Approaches to Creative Problem Solving. The department accepted my proposal, and I decided to ask these students to be participants in my research study.

Once students had registered for the course, and prior to the start of the semester, they were sent a letter asking if they would like to participate in the research study (see Appendix 3). All eleven students agreed to meet with me to discuss the possibility of participating.

At the initial meeting with each student, I provided him/her with an information sheet outlining the research study, and a written consent form (see Appendix 3). Given
the participants were all students, and I did not want them to worry about how their
grades would be affected by participation in the study or lack thereof, I also gave them
the option to decide whether or not to be a participant at the end of the semester. All
eleven students agreed to be a part of the study from the beginning.

The participants ranged in age from 23-44, and came from a variety of
backgrounds including: psychology; education; architecture; communications; and
human services. Each of the participants had taken at least one graduate level in Creative
Problem Solving, with some of them having taken up to five graduate level courses in
Creative Problem Solving. The following list provides a thumbnail sketch of each of the
eleven participants. All names have been changes to protect anonymity.

- Blaise: 33 years old, Bachelor’s degree in Communications, Director of
  Education at non-for-profit
- Eliza: 24 years old, Bachelor’s degree in Early Childhood Education, full-
  time graduate student
- David: 30 years old, Bachelor’s degree in Psychology, full-time graduate
  student
- Mary: 37 years old, Bachelor’s degree in Early Childhood Education,
  Elementary School Teacher
- Russ: 24 years old, Bachelor’s degree in Communications, full-time
  graduate student
- Jolene: 29 years old, Bachelor’s degree in Multidisciplinary Studies, full-
  time graduate student
- Lily: 29 years old, Bachelor’s degree in Spanish Education, Elementary
School Teacher

- Sue: 44 years old, Bachelor’s degree in Architecture, minor in Massage Therapy, Massage therapist and educator
- Shawna: 23 years old, Bachelor’s degree in Public Relations and Journalism, full-time student
- Anna: Over 40 years of age (preferred not to disclose actual age), Bachelor’s degree in Human Services, Teaching Artist and Director of Not-for-Profit Cultural Organization
- Joanna: 38 years old, Bachelor’s degree in Business Administration, Financial Aide Advisor

Data sources.

Data were collected from a number of sources in order to examine the participants’ view of intuitive tools, and how they worked with different types of problems including:

- Semi-structured pre and post course interviews
- Intuitive tool reflection papers
- Final Course Reflections

Semi-structured pre and post course interviews.

Semi-structured pre and post course interviews were conducted with all participants. Pre course interviews were structured to identify the demographics of the participants, to discover how they have solved problems in the past, to understand the participants’ current view of intuition and the role it plays in Creative Problem Solving, and to understand why they signed up to take a course on this topic. The following
questions were used to guide the pre course interviews:

1. Age
2. What is your academic background?
3. Think about the last complex problem you solved. Describe the process you used to solve it.
4. Think about a group you have been involved with. Next, think about a complex problem they solved. Describe the process they used to solve it.
5. What CPS courses have you taken so far?
6. What aspects of CPS have been most useful to you?
7. What drew you to this course?
8. How would you define intuition?
9. Do you consider yourself an intuitive person? Why or why not?
10. Can you think of an example when you used your intuition?
11. What helps and hinders you in using your intuition?
12. What tools do you find most useful in the Creative Problem Solving process?
13. Do you have any experience with meditation/mindfulness techniques? If so, please explain…
14. What are you hoping to take away from this course?
15. Do you think intuition has a role in the CPS process?
16. Any questions or comments?

Post course interviews were structured to identify how the participants’ views of intuition had changed, how they could use intuition and intuitive tools in Creative
Problem Solving, how they might transfer their learning, and how they were affected by the intuitive tools and techniques that they learned. The following questions were used to guide the post course interviews:

1. How would you define intuition?
2. Did you find any deliberate intuitive tools useful and/or effective? If so, which three did you find the most useful/effective and why?
3. How might you use intuitive tools and techniques when you solve problems?
4. How might you use intuitive tools and techniques in CPS facilitations?
5. Are you still practicing meditation?
6. What is the most significant thing you learned in this course?
7. Have you personally changed in any way?
8. Have you changed the way in which you work with groups?
9. Can you share an instance in which you transferred your learning into your personal and professional life?
10. Any other comments?

*iTool reflection papers.*

As part of the Holistic Approaches to Creative Problem Solving course, students had to write reflection papers based on ten intuitive tools that they had to experience and put into practice. These tools were identified as “intuitive tools” through a Master’s project completed at the International Center for Studies in Creativity at Buffalo State (Bissett, 2008). The students were asked if they would be willing to share their reflections as part of a data set. The purpose of collecting this data set was to attempt to
explore the research question, “Do students find deliberate, intuitive tools and techniques effective in CPS? If so, when do they find them the most effective?”

**Final course reflections.**

The final requirement for the course was that students had to write a 3-4 page reflection paper about their experiences in learning about intuition within Creative Problem Solving. I asked the students if I could use their papers as part of my data set. The purpose of this data set was to explore the research question, “When CPS is taught from a holistic perspective, is personal transformation more likely to occur?”

**Data analysis.**

**Part one: inputting and reading through the data.**

I began my research by inputting the 100 questionnaires into NVivo 8. NVivo 8 is a qualitative research and data analysis software that allows you to sort and review large amounts of data in a simple and systematic manner. Due to the large volume of data for this part of the study, I decided this was the easiest way to code without becoming overwhelmed. As I inputted the questionnaires, I read through each one, in an attempt to get an overview of the data that I had obtained.

**Part one: coding the data and identifying themes.**

I utilized the process of data analysis described by Creswell (1998) for grounded theory. Throughout this process, I used a variety of analytic tools such as: “asking questions, playing with various meanings of a word, using the flip-flop technique, drawing upon personal experience, looking at language, looking at emotions that are expressed, looking for words that indicate time and thinking in terms of metaphors and
Beginning with the first questionnaire, I went through each question by “open coding,” categorizing words, phrases and sentences into the NVivo software. The initial categories were called “free nodes.” Because this was a grounded theory approach, I did not have any preconceived notions of what categories would be selected.

Once the coding was complete, I went through and revisited the various free nodes. Some nodes were overlapping, and therefore, I worked to capture the essence in one node. Other nodes were renamed, based on the words and phrases they encompassed. I also recognized that sometimes a phrase was not coded accordingly, as it did not match the rest, and I found another location for it. Once I had gone through the free nodes, I went back to the questionnaires. I revisited each code from the questionnaires, to ensure I coded the words and phrases into the most appropriate category.

In the next step, I conducted axial coding, where I “assembled the data in new ways” (Creswell, 1998, p. 57). I went through the free nodes and began to categorize the nodes from free nodes to tree nodes, based on the questions that guided the research study. In total, there were three major categories that described the research question and the central phenomenon I was reviewing—descriptors of intuition, skills of an intuitive person and the role of intuition in Creative Problem Solving. In addition, I explored the causal conditions, strategies, context and consequences (Creswell, 1998, p. 57) to develop subcategories and subordinate categories related to this phenomenon. See Chapters Four and Five for results.

Following the clustering and development of the categories, subcategories and
subordinate categories, I decided to have them checked by two experts in the area of intuition in Creative Problem Solving. These two individuals have a Master’s of Science degree in creativity, and have done research in the area of intuition. They provided me with feedback on the categories, and asked questions to determine if I named and categorized the descriptors correctly.

**Part two: Transcription and data collection.**

A professional transcriber transcribed each of the interviews. The intuitive tool reflection papers and final course reflection papers were gathered for evaluation.

**Part two: Reading through data.**

I read through all of the data several times to obtain an understanding of the material. Also, I read through additional materials including student emails, comments from class, and personal field notes. As I read through these materials, I began to highlight sentences and paragraphs that I felt pertained to the final two questions of this research study.

Having completed an initial appraisal of the whole data set, I then focused my attention on the part of the data set in which participants discussed their reflections on using the intuitive tools. I decided to use two distinctly different approaches to understand their comments. The first approach involved using a cognitive CPS tool called POINt (THinc Communications, 2006). The purpose of this tool is to help participants, and in this case the researcher, identify the: Pluses, Opportunities, and Issues inherent in the tool. In addition, the POINt tool helps people to create the New thinking necessary to overcome the Issues identified in the earlier step.

The second approach was radically different. It occurred to me that one way in
which I could get really “close to the data” was to personally apply each of the intuitive tools to the question of whether intuitive tools and techniques are effective, and if so, when are they effective. By applying the intuitive tools to a question that was absorbing a great deal of my attention, I hoped to gain a much deeper understanding of the tools from both a user and a researcher’s perspective. In this endeavor, I was strongly influenced by Corbin and Strauss when they said “how an analyst puts together the concepts often requires many tries before the story or findings “feel right” to him or her. Feeling right is a gut feeling. It means that after being immersed in the data the researcher believes that the findings reflect the ‘essence’ of what participants are trying to convey, or represent one logical interpretation of data as seen through the eyes of the particular analyst” (Corbin & Strauss, 1998, p. 47). My experience of using the tools is included in the descriptions.

The final stage in my data analysis involved identifying content that indicated whether the participants had experienced transformational learning. In order to do this I reread the participants’ documents looking for passages that suggested some form of transformation. I extracted any sections that seemed relevant and then experimented with grouping them in various forms. Gradually, I realized that their reflections could be organized into three broad categories: personal transformation, interpersonal transformation, and a transformation in their understanding and/or application of CPS.

Having organized the text into these broad groups, I then reread the fragments trying to understand the nature of the transformations they described. As an experiment, I tried to capture the essence of their comments using some simple keywords. This approach proved to be quite helpful, and resulted in a manageable collection of keywords
that seemed to be both broad enough to encompass the range of ideas in the texts, and yet focused enough to help me see the patterns. I refined the keyword list through multiple iterations, ending up with a collection of thirty-five words.

**Ethical Considerations**

Names of participants were changed to ensure anonymity from the start of the study, and remain changed through the dissemination of the results. Any data obtained from participants was only available to the researcher and the academic supervisor. All data was stored on the researchers personal computer.

Participants were allowed to refuse to participate or withdraw from the study at any time, without consequences, or, in the case of part two participants, impact on the grade for the course taken. If a participant in part two of the study did not want any of his/her student work used in the data set, then it was to be removed by the researcher.

There was no anticipated harm to the participants.

**In Conclusion**

Patton (cited in Strauss & Corbin, 1998) identified creativity as an essential ingredient in this type of research project. For me, this was an extremely important point because, as far as possible, I employed the core Creative Problem Solving (CPS) principle of the dynamic balance between creative and critical thinking skills within the research methodology. In essence, in addition to studying the reaction of the participants to intuition within CPS, I also continuously explored the topic through studying my own reactions throughout the process of conducting the research.

The concept of the researcher being part of the experiment is an established principle within qualitative studies, and seems to be highly appropriate in this case.
recognize that I became a part of the process, interacting as both a participant and an observer. As a participant, I taught the class, and as an observer, I reviewed the data as well as reflecting upon my own experiences. Additionally, it was essential for me, as the researcher, to establish empowering relationships with my participants for the second part of the study. “Empowering relationships involve feelings of ‘connectedness’ that are developed in situations of equality, caring, and mutual purpose and intention” (Hogan as cited by Connelly & Clandinin, 1991, p. 126).

Through applying the data gathering techniques, as outlined above, in combination with the grounded theory methodology, I intend to describe the role of intuition within CPS and to develop guidelines that help both practitioners and researchers, more accurately employ intuitive techniques within a deliberate problem solving framework.
Chapter Four: Construing Intuition

Overview

In this chapter I will examine the data gathered from the first question of the study, “how do creativity practitioners construe intuition?” The data will be presented in the following format:

1. A table containing the various categories and subcategories that emerged from the data.
2. A break down of each category, along with a description of the category, examples taken directly from the data, and a comparison of the category with the literature.
3. A model derived from the core concepts found in the data.

Research Question 1 - “How do Creativity Practitioners Construe Intuition?”

Four questions were asked in pursuit of this research question. The questions were: 1) How do you define intuition?  2) What does intuition look like?  3) What does intuition feel like?  4) What does intuition sound like? The following table (Table 2) presents the categories and subcategories that emerged from coding the data. The number next to each category indicates the frequency of the category in the data set
<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
</tr>
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<tbody>
<tr>
<td>Rapid Insight (53)</td>
<td></td>
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<tr>
<td>Defies Logic (35)</td>
<td></td>
</tr>
<tr>
<td>Sensing (37)</td>
<td></td>
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<td>Sensory Perception (28)</td>
<td></td>
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<tr>
<td>Sixth Sense (9)</td>
<td></td>
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<tr>
<td>Not at the Conscious Level (30)</td>
<td></td>
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<tr>
<td>Comes from past experiences (25)</td>
<td></td>
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<tr>
<td>Knowing without Knowing Why (20)</td>
<td></td>
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<tr>
<td>Natural Process (29)</td>
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<tr>
<td>Natural (17)</td>
<td></td>
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<tr>
<td>Instinct (12)</td>
<td></td>
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<tr>
<td>Sounds like… (134)</td>
<td></td>
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<tr>
<td>Inner Guidance (47)</td>
<td></td>
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<tr>
<td>Words or Phrases (44)</td>
<td></td>
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<tr>
<td>Silence (26)</td>
<td></td>
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<tr>
<td>Aha (17)</td>
<td></td>
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<tr>
<td>Physiological Responses (167)</td>
<td></td>
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<tr>
<td>Gut (89)</td>
<td></td>
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<tr>
<td>Full Body (26)</td>
<td></td>
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<tr>
<td>Head (24)</td>
<td></td>
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<tr>
<td>Eyes (22)</td>
<td></td>
</tr>
<tr>
<td>Feelings (161)</td>
<td></td>
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<tr>
<td>Feels Right/Wrong (67)</td>
<td></td>
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<tr>
<td>“A Feeling” (31)</td>
<td></td>
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<tr>
<td>Emotions (19)</td>
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<tr>
<td>Unexplained Feelings (18)</td>
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<tr>
<td>Hunch (12)</td>
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<tr>
<td>Flow (9)</td>
<td></td>
</tr>
<tr>
<td>Mental (11)</td>
<td></td>
</tr>
<tr>
<td>Spiritual (15)</td>
<td></td>
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</tbody>
</table>
Rapid insight

There were 53 references that described intuition as a rapid insight. Rapid insight refers to the speed with which an answer or idea arrives. Some felt their rapid response came “out of the blue” or “from no where.” Others thought it was like a “bright flash” or like an “aha” moment. Five participants thought it felt like a “light switch” being turned on inside your head.

References to rapid insight were found throughout the literature and sometimes described as an “immediate awareness” (Amorde, 2009; Duggan, 2007; Goldberg 2006; Wild, 1938, Rorty, 1967, & Kahneman, 2003 as cited by Dane & Pratt, 2007). Gladwell discussed something similar in his book, “blink” (2005), but stated he never used the word “intuition” because he felt as if the word was emotionally driven, whereas his term, “rapid cognition” was driven by rational thought- simply at a faster rate.

“Blink” discussed the snap judgment decisions people make in the blink of an eye, based on expertise in a domain. Duggan (2007) referred to this type of intuition as “expert intuition” (p. 2). Duggan coined the term, “strategic intuition” to describe the type of intuition that occurred over time- slowly- and was useful in new situations and ideas. I believe the data in this set reflects both expert and strategic intuition. While some participants wrote about a quick answer, others talked about the laborious process of working through a new challenge, only to have a rapid insight occur at some later point. This latter process is similar to Wallas’ creative process model (1926) preparation, incubation, illumination, and verification. The preparation of the challenge comes from arduous work and the illumination is equivalent to the rapid insight.

Defies logic
There were 35 items that mentioned intuition as an illogical process, or an insight that cannot be proven with facts. For example, “unable to explain why a particular idea seems intriguing” (Respondent 12) or “I rely on those untraceable inspirations that lead me to decide or take action in a direction or path” (Respondent 23). Here is an example of intuition playing a non-rational role in the problem solving process:

- “I guess the greatest example is deciding to do the Masters program - it defied all logic, financial sense, logistical aspects of global travel, time available, family responsibilities...yet there was something inside driving my decision and behavior - an irrepressible excitement and joy, elation, made me smile every time I thought about doing it, almost a compulsion driving my behavior....it was impossible to ignore the voice inside regardless of all the "logical" factors against my doing it...great decision!” (Respondent 51)

Intuition as a non-logical process was evident throughout the literature. However, Barnard (1938) believed that just because it was not logical, did not mean it was magical:

the sources of these non-logical processes lie in physiological conditions or factors, or in the physical and social environment, mostly impressed upon us unconsciously or without conscious effort on our part. They also consist of the mass of facts, patterns, concepts, techniques, abstractions, and generally what we call formal knowledge or beliefs which are impressed upon our minds more or less by conscious effort and study. (p. 302)

After reviewing the data set, I agree with the sources of intuition as described by Barnard. Intuition, like creativity, may appear on the outside as a magical construct. However, once broken down and closely examined, I believe it can be understood, taught, and nurtured.

**Sensing**

There were a total of 37 references to sensing. Twenty-eight of those references
related to using the five senses. For example, “I think there is credence in practicing and showing others how to become more and more aware of all their senses (staying open-and non-judgmental) and their surroundings” (Respondent 11) and “I believe I am intuitive because a significant part of my personal decision making relies upon sensory perception not only factual information” (Respondent 75). Nine references talked about intuition as a “sixth sense.”

The sensing category was similar to the sensing patterns descriptor found in the creativity journals (Dollinger, Palaskonis, & Pearson, 2004; Eubanks, Murphy, & Mumford, 2010; Langan-Fox & Shirley, 2003; Policastro, 1995). However, while the participants in this study described using their senses, nothing in their descriptions suggested that they realized they were using their senses to understand and make connections to patterns which would trigger intuitive insight.

Not at the Conscious Level

Thirty references cited that intuition occurred at an “unconscious,” “subconscious,” or “not at the conscious” level. Kihlstrom (1984) described the slight differences in the meaning of the various words, but for the purpose of simplicity, I have categorized this node as “not at the conscious level.” The following are examples of how the participants saw the intuitive process working at this level:

- “The brain processes and records much more than we are conscious of what we process and record of any given situation. Therefore, when dealing with a decision making, we draw upon what we know consciously about the subject matter and in addition, in the form of the gut feeling, on the all the previously unconscious recorded information” (Respondent 19).
- “Intuition is the conscious recognition of either a synthesis or direct presentation of subconscious data collected from known (cognitive
perception, memory, heuristics, and affective/emotional) and unknown sources (extra-sensory perception, channeling, etc.)” (Respondent 76).

- “Maybe I am simply ‘reading’ the pace and responding appropriately. I’m reminded of something Agatha Christie wrote. She credited intuition as a real phenomenon, but she thought that it wasn’t an "other world" sense. She suggested that often we sense data, assimilate it, and come to a conclusion, all on a subliminal level. Then we bring this "conclusion" to our conscious awareness” (Respondent 85).

Dane and Pratt (2007) stated “one of the defining characteristics of intuition was that it was non-conscious” (p. 36). Of all the categories identified, in the participants’ responses, “unconscious” was the term that had the greatest support in the literature (Burke & Miller, 1999; Eubanks, Murphy, & Mumford, 2010; Isenman, 1997; Kaufman, 2009; Langan-Fox, 2003; Rockenstein, 1988; Sadler-Smith & Shefy, 2004; Simon, 1987; Volz & von Cramon, 2006).

Comes from Past Experiences

Twenty-five respondents said that intuition comes from our collective knowledge and experiences. One participant described it as using “the data of our lifelong experiences” (Respondent 79) and another said, “when you become more experienced, you use your previous experiences to guide you through something” (Respondent 35). The following example from the data describes how it might work:

- “Consider highway driving. An intuitive driver is able to marry past experience on the road to the 18 wheeler merging on the short acceleration lane ahead. Knowledge of the short acceleration lane allows the driver to move over a lane to allow the large truck to merge. The driver has to have past knowledge to apply to the situation at hand” (Respondent 28).

A number of theorists (Amorde, 2009; Dane & Pratt, 2007; Gigenzer, 2007;
Khatri & Ng, 2000; Klein, 2003; Raidl & Lubart 2001; Sadler-Smith & Shefy, 2004; Simon, 1987;) believed that intuition was a result of past experiences and acquired knowledge. They felt that insight comes from prior knowledge that is reconstructed in some ambiguous way, giving the information new meaning.

Knowing Without Knowing Why

There were 20 references related to knowing without having a rational basis for knowing why. One participant described it as, “a sudden feeling of knowing or confidence in knowing while questioning how I can know this” (Respondent 56). The following is an example from the data:

- “Working in an urban setting, I see many situations in student's home lives. As I observed a student in my class, something didn't seem quite right. Not having much to go on, I just had a "bad feeling." I kept observing the student for a couple of days. When the student came to school with a bruised eye, we called Child Protective Services” (Respondent 57).

“Knowing without knowing why” was one of the descriptors identified in the creativity journal articles (Langan-Fox & Shirley, 2003; Rockenstein, 1988) and in the wider literature (Goldberg 2006; Sadler-Smith & Shefy, 2004; Vaughan, 1979). In fact, Volz and von Cramon, (2006) described intuition in every day life as “knowing something without knowing how you know it” (p. 2077).

Natural Process

Seventeen people referenced intuition as a “natural process” or as having a “natural flow.” One participant commented, “it seems like the more we tap into our intuition the more likely we are to use it. It's natural, but people forget they have use of it” (Respondent 70). “I think that it already exists in every part of cps. cps is a very
‘natural’ process which helps the experienced user take advantage of their intuition” (Respondent 66).

Additionally, there were 12 references to intuition being a natural or gut instinct. One participant stated, “we are often working on instinct - our feeling about what is right, in the absence of a concrete answer” (Respondent 60).

“Natural” was a common descriptor found in the intuition literature (Isenman, 1997; Robinson, 2006; Sadler-Smith & Shefy, 2004). As Goldberg stated (2006), “intuition is increasingly recognized as a natural mental faculty, a key element of discovery, problem solving, and decision making, a generator of creative ideas, a forecaster, a revealer of truth” (p. 15).

**What Does Intuition Sound Like?**

One of the questions posed to the participants was, “what does intuition sound like to you?” Four major categories emerged from their responses. The categories were: inner guidance, words and phrases, silence, and aha!

**Inner guidance.**

There were 47 items that described intuition as sounding like an “inner guidance.” Some examples include, “because something tells me to,” “the ‘little voice’ in your head,” “sounds like another voice talking to you, yet it is my own,” “a force within you that ‘nags’ you towards a certain direction,” and “internal knowing.”

“Inner guidance” is a phrase that is frequently associated with intuition, specifically within the popular literature. In fact, there are a number of books about intuition with “inner guidance” in the title: *Inner Guidance and the Four Spiritual Gifts* (Wimer, 2007), *Intuition: Awakening Your Inner Guide* (Gee, 1999), *Discover Your
Inner Wisdom: Using Intuition, Logic, and Common Sense to Make Your Best Choices (Margolis, 2008), Find Your Inner Voice: Using Instinct and Intuition through the Mind-Body Connection (Ward, 2009), and Listen: Trusting Your Inner Voice in Times of Crisis (Robinson, 2009). However, all of these books have a spiritual and/or psychic component. I had great difficulty finding credible journal articles that referenced inner guidance. I believe that this is because of the obvious spiritual component that many researchers will see as being incompatible with scientific study.

It is interesting to note that none of the participants who mentioned “inner guidance” wrote about spiritual or psychic abilities. Although they may have deliberately omitted those references, it is also possible that inner guidance can exist, and be studied, without recourse to spiritual explanations.

Words or phrases.

This subcategory was divided itself into several sections: sounds of nature, meditation sounds, noises, hum, and phrases:

Sounds of nature.

• “birds singing, snow falling, music playing, trees rustling, leaves falling, rain pelting, flowers blooming, wind blowing.”
• “It is like a soft breeze going through my being. It comes and goes freely like a soft and warm wind. It also feels or 'sounds' comfortable.”
• “Like a perfect piece of music or any sound of nature.”
• “A slow moving creek with quiet but continual movement of water -- a calming feeling, and then, sometimes the exact opposite -- a roaring of waves hitting the water when you just know something bad is going to happen.”

Meditation sounds.
• “It would also sound like a Buddhist repeating his mantra softly in the background suddenly becoming stronger or louder when it is 'happening.' So, in a way it is a constant, soothing background sounds.”
• “ohmmmmmmmmmmmmmmmmmmmmmmmmmm I associate it with the sounds associated with my experience of guided meditation because there is a quieting of the mind, an inward turning and a listening to the source when using intuition.”

Noises.

• “Sometimes it makes a *pop* sound to get my brain's attention.”
• “Action, Macintosh boot sound, system ready.”
• “Doink! Screech! Murmer. Pffft. crash! Whirling, low motor sound”
• “whoosh!”
• “Bells. Tinkling sounds... ripples of soft music.”
• “Sometimes growing... Zzzzzz - a little bit like bee buzzing.”
• “Reggae music - dub reggae music where the tapes are being remixed and screwed around with.”
• “A sizzle”

Hum.

• “It sounds like a spark that then lights a knowing hum.”
• “A hum.”
• “A higher pitched excitement and a low tone of a definite hum.”
• “Thump. Thud. Click (as in click into place). Sometimes music, either me humming or hearing in my mind an orchestral flourish.”
• “White noise-something that is either very loud and chaotic or calming like a hum.”

Phrases.

• “Someone yelling ‘STOP’ in the back of my head.”
• “Ya think?! No way! Gotcha! The Emperor has no clothes! Nice! Yes! Geeez
-- Never heard it put that way before! Ha-ha-ha.”

• “R-R-R-R-R-R------“
• “Murmur, whispering, echo”
• “Hmmmmm hey!!”
• “’Oh yes, that’s it’ or ‘that makes sense’”
• "OK, this sounds or looks familiar. What do I do now?"
• "Come on, lets do it"
• “Wow!!!”
• “Do it, don't be afraid.”
• “What a wonderful thing!”
• “Please, please, go on and on . . .”
• “I don't care what others would say or feel.”
• "Oh yeah.."
• "I was just thinking that."
• "How did you know that?"
• “Like the sound of a person agreeing like ‘mm-hmm.’”
• “Words would be words of I bet, I think, I predict, I can’t quite put my finger on it but I think.."
• “Having a stranger tell you something odd, like ‘You look familiar to me’ and not knowing that person.”
• “hey, here's a suggestion; do with it as you see fit.”
• “YES, OK, Been there before”
• “I got it!”
• “Oooh!”
• "D'oh!"

Silence.

Twenty-six participants associated intuition with silence. Examples included, “a silent hearing” (Respondent 6), “peaceful” (Respondents 9, 21, 32, & 33), “silent alarm
bell” (Respondent 38) and “quiet” (Respondents 16, 31, 32, 45, 55, 80, 85, & 100). Participants said that the reason it was silent was because it took place in the mind, and in order for intuition to occur, it needed to be quiet. A few went on to say that noise actually inhibited intuition from taking place. One person stated, “Intuition is quiet, humble, unassuming and does not work too aggressively to convince us of its worthiness for consideration” (Respondent 87). Additionally, a number of participants related silence to listening to themselves or their inner guidance, and being reflective and quiet was a means to access their intuitions.

Exploring the literature, I found that some intuition theorists related silence to meditation or mindful practices. Gawain (2002) stated, “if you heed your intuition and keep quiet, you may find that you are left with a peaceful yet enlivened sense of self containment” (p. 86).

Ahah.

There were 17 references to the word “Aha!” within the data set. Typically, this was related to the rapid insights that occurred within the mind.

The world “Aha!” and “Eureka!” were frequently mentioned in the literature. In her book, “Aha! Moments: When Intellect and Intuition Collide,” Amorde (2009) described this as “a sudden zap of insight or intuition that has come down from above to give us the clarity we so desperately need” (p. 13). Clearly, this matches the categories “rapid insight,” and “mental.” However, there is an important distinction to be made between the sudden arrival of an insight, and the process through which that insight was gained. It is certainly possible for the same insight to be obtained through two completely different routes, for example, careful, linear research versus a sudden
awareness of what the answer is. In this example, it is the process that is the focus of this study, rather than the specific idea, no matter how perfect it may seem. It is also important to note that some ideas will arrive with a strong feeling of ‘rightness,’ and that this feeling can also be a product of the intuitive process.

**What Does Intuition Feel Like?**

Another question on the questionnaire was, “what does intuition feel like?” The resulting data broke down into two categories, physiological responses and “feeling” responses:

**Physiological responses.**

Vaughan (1979) described four levels of intuition: physiological, emotional, mental, and spiritual. In this model, Vaughan characterized physiological intuition as “a strong bodily response in a situation where there is no reason to think anything unusual is going on” (p. 66). The following bodily responses were formed into subcategories: gut, full body, head, and eyes.

Gut. There were 89 references to a “gut” feeling, instinct, direction or reaction. In the data, it was described as “a feeling in the pit of your stomach” (Respondents 5, 59, & 91) a “rumbling in your stomach” (Respondent 10), or “butterflies in your stomach” (Respondent 8) that guide you in making a decision. One participant described it as “very physical, a physical 'listening,' sometimes you have to stop and locate it (often actually found in the 'gut'!) and listen to what it has to say” (Respondent 61). A gut feeling may assist someone in her decision making, “I try to follow my gut feeling on things, and it's usually right” (Respondent 59). The following is an example of using a gut feeling in a decision making process:
Recently I intended to buy property. I went through the house several times collecting all possible data on size, quality, looks, possible use and tried to visualize living in the property - without making any decisions. I slept over it for two nights to incubate on the data without thinking about it. The third morning I still had the "gut feeling" that the property was not the right one for me. After this emotional decision I went through the rational data again and came to the same conclusion. After that I made the final decision not to buy it.” (Respondent 79)

“Gut feeling” is, without question, the most frequently cited feeling within the literature. It was seen as a descriptor within the creativity literature (Kaufman, 2009; Langan-Fox & Shirley, 2003; Policastro, 1995; Robinson, 2006; Rockenstein, 1988). Additionally, there were several books written recently by researchers- Gut Feelings: The Intelligence of the Unconscious (Gigerenzer, 2007) and The Power of Intuition: How to Use Your Gut Feelings to Make Better Decisions at Work (Klein, 2004) that dove deep into the premise of gut feelings, providing numerous examples of how gut feelings work in using our intuition and making decisions.

Full Body. Twenty-six participants thought that intuition was a feeling that occurred within the whole body. Some described it as a type of energy that flows through the body, “there is no doubt that intuition triggers some form of physical and emotional energy in the self, it is like a mini 'awakening'” (Respondent 38) or “the body is moving while your brain is still there, so like the song 'I feel my body electric'” (Respondent 40) and “I would imagine intuition is much like a physical high like what happens when one feels good through exercising or understanding something” (Respondent 53). One participant provided an example:

Once, during a hug, I had the sensation of very strong electricity going from the top of my head all the way to my toes. I've never been hit by lightning, but
I imagine it would've been something like this. I knew immediately I needed to form a stronger association with this person. (It was not a romantic association, and I still have it. Oh, and this person changed my life)"

(Respondent 85).

Other participants described it as a shift in body language—“turning around suddenly” (Respondent 18), “relaxing as if a weight had been taken off their shoulders” (Respondent 36), and “sudden release of weight, and an increase in energy” (Respondent 97).

**Head.**

Twenty-four references thought intuition felt like something that occurred in the head. Some examples included: head nodding, smiling, frowning, head scratching, stroking one’s face, clicking of tongue, relaxing of face, tilting head, and changing facial expression. It is important to note that with both this item, and the next – Eyes – the respondents are describing what intuition looks like in another person. This is important, because we don’t know whether the descriptions relate to the moments before, during or after an intuitive insight has occurred.

**Eyes.**

There were 22 references in the data related specifically to seeing something occur in the eyes when intuition was taking place. These included, eye contact, eye twitching, eyes widening, upward gaze, looking into space, closing eyes and then opening rapidly, clarity in the eyes, and raised eyebrows.

The literature did not specifically discuss the body, head and eyes as having to do with intuition. In my opinion, this is due to the fact that most researchers relate intuition to the gut feeling.
Feelings

There were 31 references to intuition as a “feeling.” Many participants stated it was a feeling without describing the type of feeling, for example, “Having a ‘feeling’ or insight about something or someone” (Respondent 91) and “I rely on my feeling on the situation and which side I am swaying toward” (Respondent 57).

Vaughan (1979) described these types of feelings in her second level of intuition. At the second level, emotional, “intuition comes into consciousness through feelings” (p. 69). There were several specific feelings that people cited—feeling of right/wrong, unexplained feelings, a hunch, flow, and a vision of the future. These feelings are broken down in the following sections:

**Feels right/wrong.**

There were 67 references in the data about intuition as a feeling of “right” or “wrong.” For example, “making a good decision based on a feeling of ‘rightness.’” This just feels right to go in this direction” (Respondent 64) and “I still gather the information to make informed decisions, but in the end it comes down to what feels right for me” (Respondent 74). There were also two specific examples from the data:

- “My wife and I bought a small property in France a number of years ago. For us it was a big investment and we’d been looking for a quite a while for the ‘right one.’ When we went to view the property that we consequently went on to buy - it ‘felt right,’ there was a ‘good vibe,’ it made me ‘feel happy’ - of course it also met some other more logical hard criteria, but the sensation was enough to sway our decision. When we eventually got round to signing the legal documents, the whole process was carried out in a language that we didn’t understand and whilst I imagined that that should have been a highly stressful situation, at no time did I feel that this was not
the right thing to do. I think my intuition bolstered my nerve. I think we own the place now” (Respondent 36).

• “Others seemed to just "feel" right. For instance, when I was looking around at graduate programs in the summer of 2005, I was trying to decide about some here in Orlando. I was checking out others when I received an article from a friend. At the bottom was the web address for ICSC. When I found out ICSC had a master's program, I "knew" intuitively this was the program I wanted to enter” (Respondent 85).

The emotional sensation of “rightness” and “wrongness” was discussed by Sadler-Smith and Shefy (2004) in their paper that explored the insights of an intuitive person:

They can often instantaneously recognize in a highly convincing manner whether an investment is likely to turn sour, whether a potential hire is good or bad, whether a new product will make it or not; but frustratingly they may find it difficult to articulate the reasons behind these decisions which may just ‘feel right.’ (p. 78)

**Unexplained feelings.**

Eighteen respondents referenced a feeling that they were unable to explain or find rational data to support. For example, “it is a feeling about something that you cannot prove but definitely feel and believe to be true” (Respondent 5). One participant provided an example:

• “My decision to undertake the MS in Creative Studies was 100% based upon intuition. I had a strong feeling that this is what I needed to do. The feeling was powerful and I can recall where I was walking and discussing this major life choice that helped the decision to take root. There was not concrete data of students that preceded me with similar backgrounds that had specific career paths--my field is business and I have had a lifelong fascination with creativity. This intuitive decision was full of ambiguity in so many ways. I trusted and the future is unfolding” (Respondent 92).
Of all the researchers that discussed intuition as a feeling, I felt that Isenman (1997) did the best job of highlighting the feelings that were described by my participants: “feeling is not necessarily synonymous with emotion. It refers instead to a non-rational capacity for fine discrimination, an underlying current registering mental harmony or discord, a sense of being on or off beam” (p. 400).

**Hunch.**

There were 12 references toward having an inner “hunch.” One participant stated, “I often have ‘hunches’ that prove to be true when I trust them” (Respondent 72). Another participant provided an example, “I added something to a cover letter that was not "typical" of me because I had a "hunch" that I should highlight a certain aspect - Not only did I get the job - the boss eventually complimented my cover letter unsolicited” (Respondent 11).

There is some confusion in the literature related to “hunch.” Some researchers use the term “hunch” and “intuition” interchangeably (Isenman, 1997). Other researchers refer to “hunch” as synonymous with “gut feeling.” In other words, hunch is the manifestation of intuition, rather than the intuitive process itself. The respondents in my study appear to construe hunches as manifestations of intuition, similar to gut feelings.

**Flow.**

There were nine references toward being in a state of “flow.” Csikszentmihalyi (1997) characterized flow as “an almost automatic, effortless, yet highly focused state of consciousness” (p. 110). Examples from the data included, “when people are just doing. They are in the groove and are really flowing, almost subconsciously” (Respondent 24) and “it feels like time is suspended and that nothing is as important to me in that moment
in time as the information, feelings, or support my intuition is offering me” (Respondent 87).

Interestingly, Csikszentmihalyi made no reference to intuition in his book “flow” (1996). Notwithstanding, the one respondent (24) who described the feeling of time being suspended, I believe there is an important distinction between flow and intuition. Flow states are characterized by intense focus and timelessness. Whereas intuition seems to be more related to breadth of vision and being completely in the moment.

**Mental**

Under Vaughan’s model (p. 73), the mental (third) level of intuition “comes into awareness through images or what is considered ‘inner vision’.” In my study, 11 respondents referred to intuition occurring as part of a “mental image” (Respondent 2) “coming from the mind” (Respondent 35). One participant stated, “I feel a little surge in my brain...like a little red flag is being waved telling me what is amiss” (Respondent 81). However, it isn’t clear, from their responses, whether these descriptions are truly ‘images’ or simply mental ‘experiences.’ If they are the latter then there may be a strong overlap with both the “aha,” and “feel right/wrong” descriptors. There again, it might simply be that intuitive insights can be experienced in several different ways.

Isenman (1997) stated,

although intuition is independent of conscious rational activity, it appears to have access to logical as well as associative processing modes…it is tempting to say that intuition as a bridging function has access to both the associative processing capacity of the unconscious and the logical processing capacities of the conscious mind. (p. 399)

He goes on to state that the main difference between intuition and rational
processing is that intuition is much faster, which was similar to Gladwell’s view of rapid cognition in Blink (2005).

Spiritual

There were 15 references to intuition being a type of spiritual or religious experience. For example,

- “for me, intuition is more connected to the soul-nurturing. One way is religion, which is the road I love. It helps that my religion is a way of life and not just a set of rules and orders to live by. It is lived everyday, from the second I open my eyes, to the second before I drift off to sleep. The more I nurture it, the more I’m connected to my soul, and the more I am intuitive” (Respondent 68)
- “in many cases, my intuition is reassuring as if it is an indication that I am not alone, that there exists this sort of higher order wants to support me” (Respondent 98).

Vaughan (1979) believed the highest level of intuition was spiritual. “Pure, spiritual intuition is distinguished from other forms by its independence from sensations, feelings, and thoughts” (Vaughan, p. 77). Other theorists (Harman & Rheingold, 1984; Maslow, 1992; Miller, 1994; Palmer, 1998; Sisk & Torrance; 2001) also argued that intuition comes from a higher power. Many of those theorists believed that in order to move from the mind to the whole self, it should be done through the sacred unconscious.

While the question of whether intuition involves communication with a higher power is beyond the scope of this study; it is clearly the case that my respondents experienced their intuitive insights through a range of mechanisms, and ascribed them to a number of different causes. This diversity of sources, and manifestations is encapsulated in Figure 9:
Figure 9. A View of Intuition

**How do Creativity Practitioners Construe Intuition?**

*Figure 9* represents a synthesis of the descriptors of intuition, volunteered by the respondents. It shows how the study’s participants: 1. define intuition; 2. explain its sources; 3. describe its result; and 4. outline its various manifestations.

- To begin at the top, intuition is a natural process that occurs at the unconscious level. While it is something that may be deliberately enhanced, as a natural process, it cannot be forced.

- Intuitive insight comes from our senses, domain expertise and past experiences, and divine knowledge. We pick up this information tacitly—through our sensory perception, from our lived experiences, and/or our connection to the universe. The mind uses this information and works at an unconscious level to seek
patterns, sense gaps, and makes connections. Once the “work” has been completed, the answer will arrive.

- The answer will come in an instant, as a rapid flash of insight. There will not be any logical data to back the answer up, at least initially. However, the person will “know” it is the answer without knowing why.

- The answer can manifest itself in several different ways: physiologically (as a gut feel or surge of energy); emotionally, (as a feeling of right/wrong or unexplained feeling); mentally (as an aha!); or as inner guidance (as an inner voice telling one what one should do). This categorization echoes Vaughn’s (1979) levels of intuition—physiological, emotional, mental and spiritual. However, the data set did not reflect a spiritual manifestation. Instead, it demonstrated an inner guidance, which for some, may be considered spiritually oriented, but was not explicitly stated as so.

In conclusion, I believe that this diagram provides helpful guidance to creativity practitioners, because it highlights both the sources of intuition, and the likely channels through which it can manifest itself. Armed with this information, the practitioners can deliberately create activities that will enhance the sources of intuition, and help participants pay attention to their insights. Without this guidance, the insights may have gone unnoticed.
Chapter Five: The Role of Intuition in Creative Problem Solving (CPS)

Overview

The previous chapter explored how creativity practitioners defined and construed the intuitive process. This chapter continues the theme but with a sharper focus on the participants’ view on the role that intuition could play within the Creative Problem Solving (CPS) process.

In order to understand the practitioners’ perception of intuition within what is essentially a cognitive process, I asked three ‘positioning’ questions at the start of the questionnaire. The questions were:

• In your opinion, is there a role for intuition in CPS? If so, how would you describe the role? If not, please explain.

• Do you make it a practice to foster the use of intuition in your CPS sessions? If so, in what ways have you fostered intuition?

• Have you ever used any deliberate tools or techniques when engaged in CPS? If yes, please explain the tools you used.

These questions were designed to quickly highlight the participants’ attitudes about intuition within CPS. The summarized results of the first part of each question are described below.

In Your Opinion, is There a Role for Intuition in CPS?

In answer to this question, 98 participants said “yes,” there is a role for intuition in CPS. One participant said, “I think it’s a quality that resides in individuals and comes forward when the climate is safe for it. So, I don't see intuition as having a "role," so
much as individuals who are running CPS sessions, provide a climate to receive it when it comes - because it is not necessarily only coming forward at points of generative thinking” (Respondent 48). Another participant said, “not sure…this is something worth investigating” (Respondent 1).

**Do You Make it a Practice to Foster the Use of Intuition in Your CPS Sessions?**

Fifty participants said “yes” they make it a practice to foster the use of intuition in CPS sessions. Twelve participants said they didn’t deliberately foster it, but have used it in some instances, but perhaps not as much as they could. Twenty-six participants said “no,” mostly because they didn’t know how to, or they thought it was a natural process, not a deliberate process and nine participants said it was not applicable because they were not currently running CPS sessions.

**Have You Ever Used any Deliberate Intuitive Tools or Techniques when Engaged in CPS?**

In answer to this question, 51 participants said they had used deliberate intuitive tools and techniques when engaged in CPS, 41 participants said no, they had not used deliberate intuitive tools and techniques when engaged in CPS and 8 participants left the answer blank or said it was not applicable because they were not engaged in CPS sessions.

**Discussion**

It was evident from the data that creativity practitioners do see a role for intuition in Creative Problem Solving. However, given that only half have made it a regular practice to foster it, and only half have used deliberate intuitive tools and techniques, it is
also evident that there is a significant gap in materials, techniques, and tools that could provide a practitioner with the means to deliberately maximize intuition within the CPS process.

Digging Deeper

Having established that the community did believe that intuition had an important role to play, my next step was to understand exactly what this role(s) might be. I reviewed their responses, and organized them into categories, following the same procedure as with the previous question. The following table (Table 3) contains the resultant category structure.

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<thead>
<tr>
<th>Category</th>
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<th>Sub-sub-category</th>
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<td>The Dynamic Balance</td>
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<td>Asking Questions (15)</td>
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<td>Art Tools (15)</td>
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Use of Photos (10)
Centering Tools (7)
Deliberate focus on
intuitive response (5)
Analogies (5)

Passive intuition
(incubation) (44)
Within the CPS tools
(12)
Trust the Process (5)

Holistic Perspective

One of the clear themes (29 references) which emerged from the data, was the intimate relationship between intuition and the cognitive function. I decided to classify these references under the title of ‘holistic’ because I believe that word most accurately captures the essence of what the participants were trying to say. For example:

- “I believe that CPS and intuition go hand in hand” (Respondent 15).
- “Intuition leads to actions but is not an action itself. It is an experience that combines both the mental, physical, emotional and spiritual selves. It is like a binding agent in the self” (Respondent 38).
- “I feel that intuition is the breath and CPS is the body. One needs unhindered deep circular breaths to energize the body into action. By giving people permission to "trust their gut" and use all information available to them” (Respondent 82).
- “Intuitive solutions are an aspect of my problem solving as they seem to address the reality from perspectives that were not previously considered by the logic mind” (Respondent 93).

Since the beginning of this research, I have intuitively felt that intuition and cognition work in concert, however I have not been able to decipher how the cooperation
functions. Many of the responses suggest an almost conspiratorial relationship, with each party moving in time with the other. Additionally, a number of theorists discussed the need for connection and balance of the rational and intuitive (Dane & Pratt, 2007; Klein, 2003; Miller, 1996; Sadler-Smith and Shefy, 2007; Sinclair & Ashkanasy, 2005), but there was limited literature (Parnes, 1992) that had specifically discussed the role of intuition in Creative Problem Solving. The participants’ responses strengthen my understanding that for many people, there is an inherent co-ordination between cognition and intuition within effective Creative Problem Solving.

Clarifying The Problem

Clarifying the Problem is the first component in the CPS process. It involves moving from a loosely defined ‘mess’ to a collection of provocatively defined problem statements via a data collection stage. Many practitioners regard this component as the most important because it is essential to ensure that one is solving the ‘right’ problem before engaging in further idea development.

Twelve participants believed intuition assisted with clarifying the problem. The following are some examples from the data:

- “I think intuition helps with detective work. You can use it to clarify” (Respondent 14).
- “Intuition helps get to the essence of the problem--excellent in problem-finding” (Respondent 32).
- “Often we go through the process of the client uncovering the correct problem to solve using CPS. I have experienced situations where some individuals just will not allow themselves or the group to go back far enough in there current situation to uncover the real issues. Following my intuition in response to their situation, at this point in my work, I have been able to direct
clients through data gathering and problem statement (despite their individual Foursight preferences) to allow the client to solve the correct problem” (Respondent 58).

While I could not find any literature to support the use of intuition in “Clarifying the Problem,” Sinclair and Ashkanasy (2005) cited several studies that stated intuition played a role in poorly structured and ill-defined problems. Furthermore, Rickards (1997) believed that intuition played a role in dealing with “fuzzy problems” for which there is not enough factual data (p. 42). Both these descriptions would sound very familiar to creativity practitioners who frequently engage with these types of problems. In fact, it is probably fair to say that CPS is very rarely used with neatly defined problems, therefore the overlap between Clarifying the Problem and the researchers’ descriptions is very salient.

In my own experiences facilitating CPS, I often found myself working with a client on the wrong problem because they had tunnel vision on what the problem actually was. At times they were only looking at the facts of the situation when the emotion around the challenge was the real problem. Other times, they were so emotionally charged about a challenge that they refused to “see” the actual problem at hand. It was these experiences that lead me to develop a tool called, Facts, Feelings and Hunches (Burnett, 2006) that I presented as part of my doctoral coursework.

Facts, Feelings and Hunches is a tool that looks at the individual data around a challenge (first the facts, then the feelings, and then the hunches) and then views the challenge from a holistic format to see the connections, what they might have missed, etc. This tool was tested as part of the third question of this study and the results can be found in chapter six.
Dynamic Balance

The “dynamic balance” in Creative Problem Solving refers to the relationship between divergent and convergent thinking and how this needs to be managed during the overall process. In total, there were 63 references to dynamic balance with specific references to divergence, convergence, and the principle guideline of divergent thinking, “deferring judgment.”

Present in both divergence and convergence.

Seven participants described intuition as being present in both divergent and convergent thinking processes (the dynamic balance). But a larger proportion of the participants were more specific, stating that it was present in either divergent or convergent thinking.

Divergence.

Twelve participants described divergent thinking as a way to access and include intuition in the process. Several participants went further by referencing the use of brainstorming – a specific divergent thinking technique:

- “If you have an idea, get it out, write it down and go with it... see where it leads” (Respondent 24).
- “I think it is built in CPS - particularly in brainstorming” (Respondent 65).
- “The other place where I use intuition is with idea generation. To get ideas I think of the closest field or topic to my heart at that time and I dig deeper in it (does not have to be related to the problem I'm trying to resolve). I go straight with my instinct and don't think of the relationship. It doesn't serve me immediately, it usually does in the next problem to solve... making my intuition in control again” (Respondent 68).

Sadler-Smith and Shefy (2004) believed that “creative intuition is a valuable tool...
for those decisions that require divergent thinking processes” (p. 85). From my own personal experiences, I believe that divergent thinking, and specifically deferral of judgment, allows for intuitive insights to come to surface and be added without the censor of “we don’t have any facts to support that.” Additionally, no-one stops to question “is this an intuitive idea or a rational idea?” In divergent thinking, all ideas are good ideas.

This leads me to the principle guideline of divergent thinking, “defer judgment,” as a means to accessing intuition, which ten participants cited. For example:

- “I would characterize intuition as a lack of self-censorship during divergent activities...Deferring judgment begets intuition?” (Respondent 26).
- “People self edit all the time - and it's often those intuitive ideas that they're unsure of that they edit. I work hard to get them to stop the editing and get the ideas out there. ‘No idea is a bad idea’ becomes like a mantra” (Respondent 74).
- “The act of deferring judgment alone, in my mind, is another way of saying, let your intuition have its say” (Respondent 77).

In addition, Parnes (1992) discussed the relationship between incubation and deferral of judgment. He stated that “by deferring judgment we thus increase the time spent in obtaining a variety of perceptions of the problem” (p. 141). In essence, the longer that one is able to spend exploring possibilities, the greater the likelihood for tapping into and making connections into the unconscious, and the greater the chance for creating novel ideas.

Convergence.

Although a number of participants referenced divergent thinking, there were significantly more- 34 in total- references to intuition in convergent thinking. Four
subcategories emerged from the data; *What feels right; Making Intuition Explicit; Finding Solutions;* and *Convergent Tools*. None of the subcategories stood out as significant, in terms of the number of participants’ references. However, each subcategory deepened my understanding of the range of ways in which intuition contributed to the convergent process. The following highlights participants’ views of intuition in those four subcategories:

**What feels right.**

*When converging, participants spoke about selecting an idea that “feels right” or “jumps out. For example, “When we converge I do require my students to then think about the feelings they may have had” (Respondent 49). This subcategory links back to the definition and model of intuition described in chapter four.*

**Making intuition explicit.**

Several participants discussed making intuition explicit within the convergent stage, by addressing it up front with the client. For example,

- “The only way I can think of is that my clients need to use their intuition while choosing and narrowing down their options. Even if a solution or idea sounds good, if your intuition is telling you that it’s not something that you’ll ever follow through on, then do not bother picking it” (Respondent 59).

**Finding solutions.**

Being able to use intuition to find solutions also emerged as a subcategory of convergent thinking. For example, “it helps direct the user toward the best fit solution to their problem” (Respondent 8). It is important to remember that the CPS process consists of a number of divergent and convergent stages. Therefore, the ways in which
participants describe convergent activities may vary between stages, but the fundamental process, i.e. a narrowing of options, remains the same.

**Convergent tools.**

Finally, several respondents viewed convergent tools as a place where intuition played a role. For example, “*I regularly point out the usefulness of it in making decisions. In fact, most of the basic CPS convergent tools rely a lot on intuition*” (Respondent 52). Despite these references, the only convergent tools that were cited in the data set were hits and highlighting- a total of four times. It would seem as though intuition is providing an almost contextual role in the participants’ thinking. In other words, the convergent tools are building on top of, or perhaps providing a cognitive justification for, the decisions created through the underlying intuitive process.

**Discussion**

When I started this study, I believed that the role of intuition would emerge as being strictly convergent. I had formed that conclusion because, in my experience, intuition had always been about finding ideas that “felt right.” In other words, it was a convergent process. The results from this study show that the weight of the participants’ responses tends to support this view. The subcategories that emerged show that intuition influences the convergent process in a number of different ways.

However, the data also points to a more complex view of intuition’s role. The ability to subconsciously generate novel connections and thereby produce new ideas appears to have an intuitive component for some people. Likewise, the act of deferring judgment seems to give intuitive insights ‘breathing’ room. It is, therefore, probably more accurate to say that for the majority of participants, intuition’s primary role is to
help in the convergent processes.

Although intuition offers a powerful convergent capacity, it is not without its risks. This power/risk combination has been recognized in the new model of CPS- the Thinking Skills Model (Puccio, Murdock and Mance, 2006). The model’s authors added “stay focused” as a convergent guideline. The authors explained (citing Palus & Horth; Guzzo & Palmer) that critical analysis was a necessary countervailing factor that balanced the ambiguity associated with intuitive convergence, and that intuition provided an elegant escape from the quagmire of “analysis paralysis” that can so often emerge from strictly objective decision-making. Unfortunately it appears that creativity practitioners have not adopted the new guideline because it was not mentioned in the data set.

While I agree with my colleagues regarding the importance of staying focused, I also believe that creativity practitioners need to make intuition more deliberate within the convergent stage. In order to support this objective, I recently developed a tool called Head, Heart and Gut (Burnett, 2006) where the decision maker is given three “hits” with which they judge their choices. The first hit is a blue sticker. This sticker is placed on the idea that makes the most rational sense. The second hit is a red sticker. This sticker is placed on the idea that excites them and makes them happy. The third hit is a yellow sticker. This is for the idea that “feels right” or “what the gut is telling them to do.” The stickers may be placed on the same idea. The decision maker must then reflect on why they selected the ideas, what implications this has on his/her decision making, and find ways to possibly combine ideas. This tool was tested as part of this study, and the results may be found in chapter six.
One of the main reasons I developed this convergent tool, was to find the balance between the rational, emotional, and intuitive. As much as I am a proponent of tapping into intuition, I also believe that our intuition can act as the voice of judgment, but based on tacit biases and/or past experiences that are no longer relevant. For example, I was recently invited to facilitate a local organization. However, something didn’t “feel right,” so I declined the job. Upon later reflection, I realized that my intuitive response had been based on my fear to facilitate this type of domain because of a previous experience. Unfortunately, this meant that I possibly missed out on a wonderful opportunity.

I believe it is critical to give voice to our intuitive judgments and, at the same time, to be aware that we are making a judgment, but don’t necessarily know why. This is what ultimately makes the tacit visible and capable of exploration. I feel if we don’t explore then we are in danger of allowing our decision making to be driven by our unexamined prejudices, rather than illuminated by our deep insights.

**Active Intuition**

The term “active intuition” came from an article I co-authored (Francisco & Burnett, 2008) about deliberate intuition. We defined active intuition as recruiting intuitive capabilities through the use of deliberate tools and techniques that honor gut feelings and blink-of-an-eye insight. In addition, active intuition tries to deliberately tap into the unconscious through reflection, mindfulness, and visionizing (Parnes, 1992).

A recent Master’s project (Bissett, 2008) identified intuitive tools- or itools- in the literature. The effectiveness of these tools and techniques, combined with the tools described below, are explored in depth in chapter six of this thesis.

I was very curious to see what tools and techniques the participants used in their
attempts to tap into intuitive capabilities. And, whether their choices matched the list that had been created through the Master’s research. The following “intuitive” tools and techniques highlight what was found in this data set:

- **Visualization Techniques** (27 references): using guided visual imagery sessions and exercises, and imagining all possible outcomes;

- **Asking Questions** (15 references): having participants ask questions about life, using senses to ask questions, and asking questions and listening for an answer;

- **Art Tools** (15 references): writing exercises, freenoting, improvisation, drawing, poetry, music, body movement, painting, storytelling, singing scat, and role playing;

- **Visual Explorer and use of photos** (10 references): utilizing images, video, collages, Visual Explorer (Palus & Horth, 2001);

- **Centering Tools** (7 references): focusing tools, meditation, labyrinths;

- **Deliberate focus on intuitive response** (5 references): Ask, “what is your gut or intuitive response to this?”;

- **Analogies** (5 references): analogical thinking.

*Visualization* and imagery techniques were found throughout the Creative Problem Solving literature since the start of CPS (Miller, Vehar & Firestien, 2001; Parnes, 1992; Noller, Parnes & Biondi, 1976; Puccio, Murdock, & Mance 2006). Extensive information on the various techniques can be found in the Sourcebook for Creative Problem Solving (Parnes, 1992).

Parnes (1992) cited the blending of “non-verbal (imagery) processes with the verbally-emphatic Osborn-Parnes model of Creative Problem Solving” as the “Third
Generation” of CPS (p. 151). However, despite his argument for the “Third Generation” to overlay the intuitive on to the cognitive, most creativity practitioners have avoided using these techniques, because of their lack of skill working with these methods, and their general concern for coming across as “soft.”

Bissett (2008) categorized these tools within her category, “Artsy Fartsy Tools,” or, using imagery and visual stimuli to tap into intuition. The tools she included in this category were, “Art Gallery of Your Mind,” “Blind Contour Drawing,” “Collage,” and “Image Streaming” (p. 27) and were tested in chapter six of this thesis. Her category also incorporated my categories of “Art Tools” and “Visual Explorer.” The reason I did not collapse these categories into one was because I felt the expansion emphasized the breadth of ways in which images were utilized within the tools and/or techniques.

The importance of Asking Questions is frequently mentioned throughout the Creative Problem Solving literature. However I could not find any specific references to asking questions as a tool for stimulating intuition within the CPS literature. I believe that questioning of oneself and others can have an important role in both divergent and convergent thinking. The questioning process can assist people in going beyond the obvious, tip of the iceberg ideas, and into a deeper level – be that conscious or unconscious.

Given that intuition is often associated with the artistic side of creativity, it is not surprising that Art Tools and Techniques emerged as a category. Unfortunately, despite the appeal of these types of tools, I have found from my own experience of teaching the process that my students were often concerned with how to integrate artistic tools into what they saw as an exclusively scientific process. I believe that there is a need to
legitimize artistic techniques within CPS, and at the same time, to develop simple and accessible tools that make it easy for any practitioner to use this approach in their sessions. Fortunately some of the artistic literature, (Cameron, 1997; 2002), offered tools that would fit well with the process, and especially within personal application of CPS.

*Visual Explorer* is a deck of 224 color images that have been “selected for their ability to connect literally and (especially) metaphorically with a wide variety of topics” (Palus and Horth, 2001, p. 396). Groups use these pictures to explore complex challenges and to evoke “mutual understanding of emotions, intuitions, and tacit knowledge that might otherwise be left unspoken and unillustrated” (p. 398). The purpose of the cards is to elicit various perspectives using “vivid metaphors and imagery” (p. 397). While this tool is not specifically aimed at CPS, it does come from the Center for Creative Leadership ([http://www.ccl.org/leadership/forms/publications/publicationProductDetail.aspx?productId=zzzzzzzz723&pageId=1257](http://www.ccl.org/leadership/forms/publications/publicationProductDetail.aspx?productId=zzzzzzzz723&pageId=1257)), and has been used extensively in their work on innovative leadership.

*Centering Tools* such as focusing, meditation, and labyrinth, have received some attention in the Creative Problem Solving literature (Gowan, 1978; Franscico, 2006). Although people make distinctions between the various tools, at their core, they are all intended to help one manage one’s awareness. For example, meditation is the “process by which we go about deepening our attention and awareness, refining them, and putting them to greater practical use in our lives” (Kabat-Zinn, 2005, p. xvii). The labyrinth is both an example of moving meditation and an archetypal tool that assists with personal and group change and transformation. Francisco (2006) outlined all of the ways to utilize
the labyrinth in creativity. These reasons include, “visioning,” “creativity excursion,” “brainstorming,” and “Creative Problem Solving Facilitation” (p. 18).

Bissett (2008) described this category as “follow the yellow brick road” as a metaphor to find the answer from within. The tools she included in her data set were Labyrinth, Not Kansas, Vision Walk, and Walk in the Woods and are explored in chapter six of this thesis. (p. 29).

A deliberate focus on intuitive response was similar to Bissett’s (2008) “quick and dirty” category of itools. These convergent tools help to gather intuitive insights in just a few minutes. The tools Bissett included in this category were “Coin Toss,” “Glass of Water,” “Head, Heart and Gut” (outlined in this chapter) and “Is it a Yes or a No.” They should be used when the client wants to check-in on gut feelings or decide on several options. Descriptions of these tools can be found in Chapter Six.

An Analogy “involves making a statement about the similarity, or relationships, linking two objects” (Mumford & Porter, 1999, p. 71). Initially, analogical reasoning was not considered a part of creative thinking. However with the awareness of creativity “depending upon a combination and reorganization of our extant knowledge structures,” analogical reasoning is taking on a new role, potentially “laying a foundation for creative thought across a wide range of endeavors” (p. 71).

Parnes (1992) believed in making new connections through analogy in the CPS process. He stated, “the new connections are encouraged by the diverse environmental input through our senses. This can add important inter-relatable elements to the deep personal bank of memory that is tapped extensively in the earlier intense deliberate effort” (p. 151).
One of Bissett’s (2008) categories - “Abracadabra Tools” - was not found in this data set. These tools are meant to bring a bit of “magic” to the process. The tools she outlined were “Double Entry Aha Method (DEAM),” “Mindmapping,” “Photoreading” and “Thin-Slicing.” These tools were tested as part of this study and further descriptions may be found in chapter six.

Passive Intuition (Incubation and Excursions)

My colleague and I (Francisco & Burnett, 2008) defined passive intuition as “creating the space for intuitive insights to make themselves known through the use of incubation and excursions” (p. 244). A number of participants cited incubation, and excursions, as a means to deliberately promote intuition in CPS. The following were some of the suggestions from the participations:

For personal creative problem solving…

• “Use the exercise trigger...I try not to think of the problem, then I go for a walk, or a jog, or even a bicycle ride” (Respondent 10).
• “When faced with complexity- sleep on it. Deliberately wait, think, wait, write, walk, think, wait” (Respondent 71).
• “I frequently put a question to myself and then brainstorm for different ideas...then leave the problem and come back at another time to see what has percolated in my head. It works with group problem solving as well” (Respondent 94).

For group creative problem solving…

• “Suggest that we take a break and come back to the problem at a later time in hopes that something will have been jarred forward in individuals’ minds” (Respondent 12).
• “A period of silence or walking for people to be ‘with themselves’ for a moment - whether they know it or not, I think this is a time when they might
become a little more aware of their intuition” (Respondent 36).

- “For sessions that are multiple time frames (over weeks, etc) do ask people to "sleep on it" reconsider and reflect and capture ideas in between” (Respondent 71).
- “By scheduling sessions over time and asking participants to actively incubate on how to resolve a situation” (Respondent 87).
- “Deliberate inclusion of elements that promote incubation, such as art museum visits in the middle of a technical problem solving effort” (Respondent 89).

Incubation is clearly an essential ingredient for intuitive insight (Goldberg, 2006; Gowan, 1978; Parnes, 1991; Sadler-Smith and Shefy, 2004). Parnes (1992) stated when we incubate, we:

attach ourselves for a time while we allow new associative links to be stimulated via new sensory input from the widest variety of sources-as we gain new perceptions of the problem. Thus incubation provides for further deferment of judgment about the problem, and bombardment of the mind with the greatest variety of random input so as to increase to likelihood of a chance connection- a ‘lucky’ observation. (pp. 141-142)

The role of incubation has now been recognized in the Thinking Skills Model. The model contains what is known as the Wild Card principle “allow for incubation.” The authors stated that incubation should be deliberately built into both the divergent and convergent processes, thereby allowing greater time for intuitive thoughts to be recognized. The practical application of this principle was explored in an article (Francisco & Burnett, 2008) that outlined specific approaches to building incubation into the overall process.

This recognition of incubation has led some researchers to draw a distinction between intuition and insight. Hodgkinson, Langan-Fox and Sadler-Smith (2004) stated
that insight is the “aha” moment that comes after incubation, whereas intuition is an instant affective response. The data in this study suggests that this distinction is too simplistic. Participants described intuition as manifesting itself in several different ways and in combinations rather than just one specific modality. For example, an instant awareness of an idea may be accompanied by a strong sense of ‘rightness.’ A combination of both cognitive and affective intuition.

**CPS Tools**

A number of participants stated that intuition was inherent in some of the regular Creative Problem Solving tools. The following CPS tools were cited:

- Visually Identified Relationships (5)
- Hits (3)
- Ladder of abstraction (2)
- Brainstorming (2)
- Forced connections (2)
- SCAMPER
- Highlighting
- Forced fit
- Pluses, Potentials, Concerns
- Brainwriting
- Mindmapping
- Paired Compared Analysis

While a number of the CPS tools were cited, the only one that I felt had any significance was Visually Identified Relationships (VIR). VIR is a CPS divergent
thinking tool whereby participants go on a mental “excursion” by viewing images and writing down observations of those images. When they return to the challenge, they develop connections and/or ideas based on those observations they had made while on the excursion (Miller, Vehar, & Firestein, 2001). The key point about this particular tool is that the initial stage of the excursion is intended to separate one’s mind from the problem. Only once this has been achieved is the mind re-engaged with the challenge and the images then employed as stimuli. This approach is quite different from other ‘stimulus’ based creativity tools, which do not seek to encourage separation before attempting to generate new ideas. VIR therefore links both passive and active intuition by bringing in imagery and allowing time for incubation.

**Trust the process**

One participant stated, “‘trusting the process’ is what I'd consider ‘fostering the use of intuition’” (Respondent 11). Several other participants mentioned trusting the process, as described by one of the creators of CPS, Sid Parnes. Trusting the process refers to letting go of whether or not the process will work, and allowing the process to do the work it was designed to do.

**Summary**

It was clear from the data set that there were several places within the Creative Problem Solving process, where creativity practitioners described a role for intuition. For example, the use of active and passive intuitive techniques appeared to be an easy mechanism for CPS facilitators to weave deliberate intuition into their CPS sessions. Intuition was also frequently mentioned as living in the dynamic balance of divergence and convergence. In fact, the core divergent guideline, “defer judgment” was mentioned
However, CPS is more than tools and the dynamic balance of divergence and convergence. It is a series of process stages that are designed to achieve a specific outcome. I was therefore intrigued by the fact that while a few participants mentioned intuition as being present throughout the whole process, the majority of participants – who identified a specific stage - described intuition as existing within “clarifying the problem.” When I reviewed the entire data set, I was left with a series of additional questions and insights.

First, only one guideline- defer judgment in divergent thinking- was mentioned in the data. This led me to ask the questions, do the current CPS guidelines inhibit the use of intuition? Does there need to be an additional set of intuitive guidelines to be used throughout the process? If so, what would those guidelines be?

Second, there was only one explicit component of the process participants made reference to- clarifying the problem. Therefore, is the role of intuition greater in the upfront part of the process, clarifying the problem? Does it have a role in other stages of the process, and what did that look like? For example, what does intuition look like in the development of ideas and planning for action? Given the absence of specific information, I struggled to develop a theoretical model of where intuition played a role within the process. I continued to search for answers, and allowed the natural process of intuition to guide me toward a solution.

Third, while I went into this data with an open mind, I was initially thinking about the role of intuition in the *process* of CPS. Throughout the coding process, I was therefore surprised to find that participants often referenced the *person* involved in the
CPS process, not the actual process. For example, “Yes there is a role for this, much like the role of natural ability for leaders. I think it can be taught, learned, as well as something some people are born with. Being intuitive is a gift and a skill” (Respondent 53) and “Yes, I would go with my intuition and make changes to my next step in a facilitation session. For example, if you get the feeling that the resource group is bored, I will spontaneously do an interesting activity” (Respondent 37).

Finally, in my review of the literature after coding the categories, I came across the following quote written by one of the originators of CPS, Sid Parnes (1992):

I contemplate a fourth generation of deliberate creativity development processes by the turn of the century. My vision of it is the blending of the third generation (spontaneous imagery supported within the solid CPS structure) applied together with self-healing technology toward the goal of high-level wellness-not merely physical wellness, but psychological, sociological, political, and spiritual wellness as well- moving toward what Maslow meant by the self-actualizing person (p. 152).

It was at this point in the coding process that my own intuitive insight occurred. Aha! Bringing intuition into the CPS process means not only integrating it into the process itself, but most importantly, into the people involved in the process - the facilitator, the client, and the resource group.

This realization encouraged me to review the remaining data in a new light. I examined the “free nodes” and found that they contained the characteristics, skills, and attitudes of the intuitive person. The following table (Table 4) shows the resulting categories, along with and examples of the data set:
### Table 4 Free Node Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Sub-sub-category</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of Being</td>
<td>Calm (29)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alignment (12)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In tune (10)</td>
<td></td>
</tr>
<tr>
<td>Listening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mindfulness</td>
<td>Awareness (76)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heightened Awareness (30)</td>
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</tr>
<tr>
<td></td>
<td>Sensitive to the Process (18)</td>
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</tr>
<tr>
<td></td>
<td>Sensitive to Others (15)</td>
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</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td>Slowing Down (10)</td>
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</tr>
<tr>
<td></td>
<td>Being Present (9)</td>
<td></td>
</tr>
<tr>
<td>Trust Yourself</td>
<td>Trust Own Intuition (28)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Confidence (15)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vulnerability (4)</td>
<td></td>
</tr>
<tr>
<td>Sensing gaps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolerance of Ambiguity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sorting through the fog</td>
<td></td>
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</tr>
</tbody>
</table>

**Introduction**

In order for my research to be applicable in the field, I believe that it is very important for creativity practitioners to develop the core skills required to assist their clients in bringing deliberate intuition into the sessions. The following section is intended to outline what I believe are the essential skills that could be implemented.
within the existing CPS process.

**State of Being**

There were 51 references to the state of mind in which intuition occurred. This included three categories: calm, in tune, and alignment.

**Calm.**

Twenty-nine participants discussed calmness in their questionnaires. Some participants believed intuitive insights occurred as a result of staying calm, even throughout difficult situations. For example, “*When working with a client, if I am not sure what to do next, I get calm, breathe, and let whatever I'm to do next come to me*” (Respondent 85). Others believed that when an intuitive insight occurred, they felt relaxed, and peaceful, “*a relaxed feeling once I've taken an action based on an intuitive feeling. It's kind of like my body saying, 'yes, you did the right thing, now I can relax'”*(Respondent 77).

**Alignment.**

Twelve participants discussed a whole self alignment when in an intuitive state, “*I notice it more when I am in a good place myself spiritually, and mentally, well and calm*” (Respondent 7) and “*the closest to physical is when I maintain my health--weight and well being because I am being who I am!*” (Respondent 32). There were also several references to alignment with the universe, “*felt at the right place and right time*” (Respondent 46) and “*being in line with the universe*” (Respondent 82).

**In tune.**

“In tune” is a term taken straight from the data. It refers to listening and being in
touch with yourself and the environment you are in. For example, “I've always been fairly 'in tune' by being attentive to my 'gut' feeling which plays a big part in using one's intuition. This allows the individual to 'be' in tune with all of one's components” (Respondent 70) and “if you are really in-tune with yourself (willing to listen) there is no need to ‘think things over’...you just know” (Respondent 78).

Discussion

References to this state of being calm, aligned and in tune is found throughout the intuition literature (Sadler-Smith & Shefy, 2007; Walters, 2002), but is noticeably absent in the Creative Problem Solving literature.

From my own experiences in teaching and facilitating CPS sessions, I want my students to be energized and enthusiastic about the task. To this end, I always begin my sessions with an energizer in an attempt to raise the groups’ energy and get the participants thinking about the challenge. After reviewing the research data, I am curious to know how I might also get the group calm, aligned, and relaxed- in order to tap into their intuition. The challenge is of course to find a way to relax the participants that doesn’t result in them losing the energy required to generate ideas. In essence, I need to find ways to help the group be both relaxed and energetic.

The need to balance this duality suggests that CPS may need a second dynamic balance - the balance between a calm and energetic state of being. However, whereas we know when to move between divergence and convergence, it is currently far from clear as to when it is appropriate to have a calm state in CPS and when it is inappropriate. Also, how does the calm and energetic continuum map on to the CPS process and how might you move people between calm and energetic states throughout the facilitation?
In my own opinion, it would make sense to have an energetic participant for the divergent stage of CPS, and a calm, relaxed and aligned participant for the convergent stage of CPS. Energy drives the generation of ideas, and being able to sort through a mess to relax and “listen” to the most promising idea is essential for allowing the intuition to have a say in the selection of ideas. Practically, this could be added by having participants do a relaxation exercise, excursion or an intuitive tool before going into the convergent stage of the process.

Listening

Being able to listen, to both yourself and what the world is telling you, was referenced 46 times in the data. One participant stated, “If the quiet sounds are present it is almost the listening skill that allows intuition to really take hold” (Respondent 70). Twenty-two of those responses specifically sited “internal” listening such as, “I listen to that ‘voice within’ me more” (Respondent 54) and “the conscious mind shutting up and listening to the far more complex unconscious components of our mind” (Respondent 89).

Additionally, 12 participants talked specifically about a way of “tuning into” and listening to their intuition. “I am able to tune into what my intuition tells me through physical symptoms and stop, listen and decide how I will let that information guide my decisions and actions” (Respondent 8), stated one participant. Several participants also related “filtering through noise,” as a form of “tuning in.”

Clearly, listening is an essential skill for intuition. If we refer back to the definitional model of intuition described in chapter four, we must “listen” to our gut feelings, unexplained feelings, “ahas” and inner guidance, if we want to tap into our
intuition. This extends beyond auditory listening to “listening” to our body, “listening” to our thoughts, “listening” to our emotions, and “listening” to the little voice inside our head. There is a natural connection between listening and the state of being. If we are chaotic, then the answer may be clouded by noise, and we may not be able to hear the answer. However, if we are calm, we are more able to “tune in” and listen.

**Mindfulness**

There were eighty-six references to intuition occurring in a state of mindful awareness. In general, the references described mindfulness as, “being in-the-present-moment,” and often coupled this with “deliberately slowing down.”

I decided to turn to the scholarly literature to gain a deeper understanding and definition of the term “mindfulness.” In an article titled, “Mindfulness: A proposed definition” eleven doctors and researchers (Bishop, Lau, Shapiro, Carlson, Anderson, Carmody, Segal, Abbey, Speca, Velting, & Devins, 2004), collaborated to develop a universal definition of this word. What they created was a two-component definition: “Mindfulness begins by bringing awareness to current experience - observing and attending to the changing field of thoughts, feelings and sensations from moment to moment - by regulating the focus of attention” (p. 9). “The second component involves adopting a particular orientation toward one’s experiences in the present moment, an orientation that is characterized by curiosity, openness and acceptance” (p. 9). Reading their definition, I was immediately struck by how their language elegantly linked the two worlds of intuition and cognitive CPS. Without the management of one’s awareness it would be very difficult to hear the ‘quiet voices’ of intuition that many of my participants had discussed. Equally, the orientation towards curiosity, openness and acceptance,
seemed to be essential if one were going to avoid the trap of intuition acting as the tacit censor of one’s thoughts. The concept of mindfulness therefore seemed to be an essential enabling factor to bring intuition into deliberate creativity, and thereby produce a holistic CPS. But, how might one become more mindful?

According to Kabat-Zinn (2005), developing mindfulness requires that “we have got to pause in our experience long enough to let the present moment sink in; long enough to actually feel the present moment, to see it in its fullness, to hold it in awareness and thereby come to know and understand it better” (p. xiii).

Awareness

Awareness, and slowing down enough to become aware, was another important theme in the participants’ responses. Thirty participants referenced awareness as being a means to access their intuition. This idea was explored by Sadler-Smith and Shefy (2004) who defined intuition as “a form of knowing that manifests itself as an awareness of thoughts, feelings, or bodily sense connected to a deeper perception, understanding, and way of making sense of the world that may not be achieved easily or at all by other means” (p. 81).

The participants elaborated further, describing the role of awareness as, “The fuel for intuition is wisdom and awareness,” (Respondent 31) and “I see myself as a very ‘receptive’ person which means that intuition has grown stronger over the years - with accumulated experience and heightened awareness - and it has tended to strongly guide or color my decision making” (Respondent 38). On further examination I noticed that there were three subthemes related to “awareness”- sensitivity to environment, sensitivity to others, and sensitivity to the process.
Sensitivity to environment.

There were 13 references regarding being sensitive to the environment. One participant referred to “paying attention to the rhythm or pace of the room” (Respondent 85) and another, “to be aware of one's surroundings in order to make better decisions” (Respondent 99). Most of these citations were related to the facilitator needing to be sensitive to the environment.

Sensitivity to Environment is considered one of the affective skills in the Thinking Skills Model (Puccio, Murdock, and Mance, 2006). It is defined as “the degree to which people are aware of their physical and psychological surroundings” (p. 52). Although this is a distinct capability, it can also be seen as closely related to the overarching concept of ‘management of attention.’

Sensitive to others.

Fifteen participants discussed the relationship between intuition and being able to pick up on non-verbals and changes in tone. Some examples included: “It is sometimes not in what people say but what they do not say” (Respondent 7), “I am able to sift through lots of information to figure out what is most pertinent and relevant. I am able to identify inflection points, whether they are in a person's tone, attitude, body language or other detail that tells me what is really important” (Respondent 14), and “I feel that I have the ability to pick up on emotions and read facial expressions in order to make decisions” (Respondent 99).

I believe this skill relates to two categories in Emotional Intelligence- social expertness and empathy. (Lynn, 2004, p. 40). In EI, social expertness refers to “how well we are able to collaborate with others and blend thoughts and ideas to achieve goals.
or live out intentions” (p. 41). In CPS, I think this transfers to how well we are able to have a transparent, positive, collaborative relationship with our clients to assist them in achieving their goals. Empathy, in EI, refers to “the ability to understand the perspectives of others” (p. 41). This reflects the participants’ views of the importance of sensing the emotions of others- be it through the verbal or non-verbals- and responding accordingly.

**Sensitivity to the process.**

Eighteen participants made reference to being flexible to the process, or what this category is titled, “sensitivity to the process.” Specifically referring to the facilitator of the process, this skill requires a person to be able to “adjust the course in the confluence of the dynamics of the room” (Respondent 18) when “something tells her they aren’t going in the right direction” (Respondent 13). The following were some examples from the data:

- “I was working with a group recently and realized that I needed to jump off of tasks and process and switch into conversation / "coffee talk" mode and reground the individuals involved by validating both sides of the challenge and reminding that the tensions of specific individuals in a room represent a huge field of tensions between a much larger playing field” (Respondent 45).
- “A suggestion from one person in a room of 30 that we should radically alter the plan I had design for the day. My partner and the client wanted to 'hold the course' and insist that we had thought out the plan. I went with the suggestion, after only a quick glance at the faces of the other participants” (Respondent 73).

Having spent many years teaching CPS, and the facilitation of the process, I have often been struck by how difficult it can be for new facilitators to ‘read’ the dynamics of the process within a group. And yet, over time, these same facilitators can develop the
sort of intuitive capacity described by the respondents above. The fact that this ability only emerges with experience strongly suggests that this is an example of intuition through the accumulation of heuristics. Making these tacit rules-of-thumb visible and experimenting with more effective ways to teach them to new facilitators is an important area of future research.

**Slowing down**

Intuition operates at its own pace. And, that pace needs to be slow enough to allow us to “pause in our experience long enough to let the present moment sink in” (Kabat-Zinn, 2005). It therefore suggests that attempting to rush or force one’s thinking processes is likely to be counter productive. The need to manage one’s pace appeared to be an issue for ten participants who referenced slowing down, to allow their intuition to emerge naturally. One participant wrote,

- “It is thinking in a what if... kind of way that goes on under your awareness. You set the process running and then you need to let go and let the internal search happen. You end up thinking about other things. From time to time a response pokes up into your awareness and you are joyful at the gift, you judge it against the criteria for it being successful and then either enthusiastically implement it or set it back down to ferment in your mind some more. This process shouldn't be rushed, but can be sped up” (Respondent 67).

**Being Present**

Continuing the theme of allowing time to be aware, fourteen participants experienced intuition from being ‘present.’ For example, “I experience intuition there is a sense of being "grounded" or very present in my space” (Respondent 87). One participant stated she “developed its (intuition) use through the moderation of groups
over the last 20 years. It has made me more receptive to what is happening overall in the moment” (Respondent 38). On the face of it, ‘being present’ seems very similar to mindfulness. However, I classified them separately, because the participants chose to use different language, and may be talking about a more physical sense of presence, rather than a purely conceptual one. In other words, being present might have stronger kinesthetic qualities. This is a topic for future clarification.

Trust Yourself

There were 47 references about being able to trust your intuition. This was broken down into three categories; trust your intuition, confidence and vulnerability.

Trust your intuition.

Twenty-eight participants talked about the importance of trusting your intuition. One participant stated, “I have learned how to use my intuition and trust the information that it presents” (Respondent 87). Another participant referenced trusting intuition as similar to trusting the process, “One must be able to trust their intuition in order be an intuitive person--like trusting the process” (Respondent 92). Additionally, one participant discussed why people don’t always trust their intuitions, “Yes, but I don't always trust it. The problem with intuition is that if you have it and you're dealing with an issue on which other people need to weigh in, then intuition can get buried under others' assumptions. This sometimes makes it difficult to distinguish whether your own intuition is valid or just another bad assumption” (Respondent 88). This leads to the themes vulnerability and confidence.

Vulnerability.
Vulnerability refers to allowing defenses to be down while trusting our intuition. Intuition, by its very definition, produces thoughts without the associated logical underpinning. Attempting to defend these insights is therefore difficult, and potentially impossible. Choosing to embrace intuition means that people are also choosing to increase their vulnerability, at least in the eyes of their colleagues. One participant stated:

- “There is no such thing as making decisions on the cold. If we seek creativity, thus venturing into ambiguous and unknown territory, we will never have perfect information to make a decision and therefore we will consciously or unconsciously use our intuition to aid us in the decision making process. A big barrier in being more deliberate with the use of intuition is the fear of failure and punishment to failure. If I make a decision based on intuition and I am wrong, probably next time I will be forced to be more rational in my decision making process. In other words, be more deliberate to have more facts (to minimize the risk) and therefore rule out intuition” (Respondent 19).

Paying particular attention to the success of intuitions is important because we are all prone to fears, emotions, and sources of bias which may impact upon the efficacy of intuitive decision-making. Testing out the validity of gut feelings over time can help an individual executive determine how much trust she or he can put in them. (Sadler-Smith & Shefy, 2004)

The notion of quantifying the risk associated with intuitive decision-making is extremely important. The ability to take risks is seen as a key skill in innovation. In fact risk-taking is identified as one of the affective skills in the new thinking skills model (Puccio, Murdock & Mance, 2006). They described tolerance for risk as “not allowing yourself to be shaken or unnerved by the possibility of failure or setbacks” (p. 54). However, there is a huge gap between having the emotional strength and openness to vulnerability, to tolerate calculated risks, versus just making wild leaps of faith. In order
to sustainably employ intuition, one must understand its limits and operate within them.

Confidence.

Fifteen participants discussed confidence as playing a role toward trusting their intuition. “I had confidence and patience that my intuition would be correct and it has often been so” (Respondent 6), “physically I hold my head high, look into people’s eyes and feel very sure of my decision” (Respondent 13) and “it requires a sense of belief and confidence that the solution will present itself (therefore becoming more intuitive is a virtuous cycle, and can be broken with a fixation on results not yet achieved)” (Respondent 67).

Some researchers (as cited by Hodgkinson, Langan-Fox & Sadler-Smith, 2008) believed that intuition was “characterized by intense confidence in the intuitive feeling” (p. 13). Their article goes on to debate whether or not intuition is “correct” and that “it is possible that intuition may be more useful for generating hypotheses that need further testing before they are considered valid” (p. 13). Furthermore, Sadler-Smith and Shefy (2004), believed that people should “try to distinguish intuition from over-confidence and be realistic about their abilities to control events through intuitive or rational means” (p. 86).

I believe that there is an important distinction to be made between confidence in one’s intuition, and confidence in the products of one’s intuition. By developing confidence in one’s intuitive ability, it will be possible to access a range of insights that one might otherwise dismiss. However, these insights may or may not be valid, and it is therefore essential to use systems, such as CPS, to explore and validate or falsify our insights.
Sensing Gaps

This theme emerged from comments such as “read between the lines” (Respondent 9), “find connections between what is and what should be” (Respondent 10), and the “ability to understand based on limited external data or observations” (Respondent 41). In the context of Creative Problem Solving, one participant stated, “We enter into CPS because there is a gap between what we have and what we need. Intuition is another tool that helps fill that gap” (Respondent 82).

According to Puccio, et al., (2006), sensing gaps is about purposefully becoming aware of intuition, your hunches and your gut feelings and choosing to act on them. Their text refers to our innate ability to recognize that something “is missing” or “not adding up” without being able to explain how this conclusion was reached. Although the authors presented this capability in affective terms, their description closely matches typical descriptions of intuition. Further more, the capacity to identify gaps is reinforced by experience, i.e. experts are more able to perform this function. The fact that this skills is developed over time, gives greater weight to the idea that intuitive skills can be developed, irrespective of whether that development is deliberate or simply a side-effect of time and experience.

Tolerance of ambiguity

Tolerance of ambiguity is directly related to both trusting the process and trusting your intuition. The following are participant examples:

• “Being comfortable with the uncertainty of not yet knowing the answer, tolerating ambiguity and paradox, that creative place where all things are possible; when you are in that place where you have no reference points you always have your gut or intuition as a reference point; and sometimes that's a
good place to start to find it and exercise it” (Respondent 61).

- “If we seek creativity, thus venturing into ambiguous and unknown territory, we will never have perfect information to make a decision and therefore we will consciously or unconsciously use our intuition to aid us in the decision making process” (Respondent 19).

- “In my opinion, CPS is almost solely based on intuition. I can say that because of the way that I define intuition. There is no manual, so much ambiguity, endless possibilities of tools to use, how to time things, when/if to move to another stage, when to revisit a stage(s), etc. Intuition is the compass for the journey” (Respondent 45).

Tolerance for ambiguity was considered one of the essential affective skills utilized throughout the Thinking Skills Model (Puccio, Murdock, & Mance, 2006). They defined this skill as the ability “to deal with uncertainty and to avoid leaping to conclusions” (p. 52). When viewed through the lens of intuition, it seems as though there are two separate, but related, skills - one affective and the other intuitive. The affective skill relates to the ability to manage ones emotions in such a way as to tolerate the ambiguity. The intuitive skill gives one the ability and tools to navigate the ambiguity. Without the affective capacity, a person might find ambiguous situations too stressful to allow them to engage in an intuitive exploration. Likewise, without intuitive skills, ambiguous situations may persist beyond anyone’s tolerance. These two skills therefore reinforce and support one another.

**Sorting Through Fog**

CPS is frequently applied to complex problems that have resisted more conventional ways of developing solutions. Often, these problems are complex because the information describing the situation is messy and potentially contradictory. Despite these difficulties, some people are particularly good at identifying critical facts within the
‘fog’ of data. This capability, which I have labeled “sorting through fog” was identified by 8 participants. As one participant stated, “can see through the ‘fog’ in various scenarios” (Respondent 1). Sorting through fog could be seen as a particular type of convergent intuition, one that is focused on defining the problem, rather than selecting solutions.

**Representational Model**

After exploring the various categories of the intuitive person, I developed the following diagram (*Figure 10*) to demonstrate the intuitive skill set for the Creative Problem Solving process:
Figure 10. Intuitive Skill Set
Discussion

When I placed the word “intuition” at the top of this model, I reflected back on the various categories that described the intuitive person in CPS. For me, it was clear that “mindfulness,” was the key ingredient for intuitive insights to occur in the CPS process. There were two main categories that fell under mindfulness, “deliberate awareness” and “open attitude.”

Deliberate awareness requires a state of being where an intuitive person is calm, in tune, and holistically aligned with him/herself. If we are present, in the moment, and relaxed, then we are opening ourselves up for intuitive insights to occur.

In order to be deliberately aware, we also must be connected and in the present with our internal and external world. We may connect to our inner world by listening to ourselves, and the inner voice telling us what should be done. We may connect with our external world by being sensitive to the environment. To be sensitive to the environment, we need to be aware of the emotional state and non-verbal cues from other people involved, as well as judge the overall energy of the physical and psychological environment of the situation.

There are several categories that fit into “open attitude.” First, in order to have an open attitude, we need to trust the process. CPS has been designed to lead us in the direction we need to go, and we need to trust that we will arrive where we need to be. Second, we need to trust ourselves. This requires a degree of confidence in our ideas, to be vulnerable and take risks by trusting our intuition, and to tolerate the ambiguity when the process becomes difficult and uncertain. At the same time, we need to be sensitive to the process, and know when it is important to change gears and go in a different
Finally, Creative Problem Solving is complex. There are four intuitive skills required to navigate this complexity—reflection, sensing gaps, sorting through fog and visionizing. When solving problems, we must utilize our senses to identify gaps of information, take the factual data that we have and discern the essential components (sorting through fog), and reflect upon the data that we are given to see if connections can be made.

**Closing**

When I began to compare the intuitive skill set with the affective and thinking skills sets outlined in the latest version of Creative Problem Solving (Puccio, Murdock, & Mance, 2007), I noticed a number of skills overlapped. For example, visionary thinking is described as a cognitive skill in the Thinking Skills Model. Risk-taking, tolerance for ambiguity, tolerance for complexity, and sensitivity to environment overlapped as both affective and intuitive skills. I spent some time trying to define exactly which skill should go where. After some spending several frustrating days on the task, I had a realization. For me, it did not matter whether a CPS skill was classified as intuitive, affective or cognitive. What mattered was the importance of integrating these skills into a new holistic approach to Creative Problem Solving. I believe that the data categorizations that have emerged from my data provide a sound starting point for developing such an approach.
Chapter Six: Intuitive Tools and Techniques

Figure 11 - Participants' hands from blind contour drawing
This chapter focuses on the question “are intuitive tools and techniques effective? If so, when are they effective?” To examine this question, I selected ten intuitive tools identified in Bissett (2008). I, along with two other facilitators versed in intuitive tools, taught each of these tools to the eleven participants in this study. The participants used these tools in class, and then practiced with them at home. Each participant wrote a reflection on their experience of using the tools. Some of the participants described the challenges that had decided to focus on. However, many of them applied the tools to quite personal topics. For that reason, I decided not to ask the participants to describe the challenges they had selected.

I found it helpful to organize the participant reflections by using a Creative Problem Solving cognitive tool called POINt (THinc Communications, 2006). POINt is an acronym that stands for Pluses, Opportunities, Issues and New thinking. For each tool, I have provided:

• The title of tool and a short description;
• An example of the tool in action (from the participant responses);
• The Pluses of using the tool (from the participant responses);
• The potential Opportunities to use the tool in the future (from the participant responses);
• The Issues that need to be overcome (from the participant responses) following with my own interpretation of the problem statement using statement starters How to, How might I, What might be (labeled in bold);
• New thinking on how to overcome the problem statements (written by the
• Once the POINT analysis was complete, I used the intuitive tool itself to evaluate the research question, “are intuitive tools and techniques effective, and if so, when are they effective?”

• Finally, I completed a reflection on using the tool to complete each section.

**Facts, Feelings And Hunches**

**What is Facts, Feelings and Hunches?**

Facts, Feelings and Hunches (and unanswered questions) (2007) is a data collection tool that I designed during my doctoral coursework. This tool came to me as a result of an intuitive insight I had when I was learning about the balance between the cognitive and intuitive functions in holistic education. My insight was a sudden realization that there were no tools in the Creative Problem Solving literature that allowed a “space” for intuition or emotion. Additionally, I noticed that some people were looking at their problems through an emotional lens and some through a cognitive lens, and I knew intuitively they were missing an essential part of the whole picture.

When I designed this tool, I created three pie pieces - one piece to collect facts regarding a question, one for feelings and emotions, and one for intuitive hunches. These three pieces fit together to form a whole circle and to hopefully gain a full picture regarding the question. The diagram also contains a space to list unanswered questions. An example of this diagram may be found in my reflection area in Figure 12.

**Facts, Feelings and Hunches in Action**

• “‘Facts, Feelings and Hunches’ was a very enjoyable experience. I chose an
IWBG1 that has recently come to my attention due to my situation. It is something that has been sitting in the back of my mind for years, and I still have problems sharing it because it is such a precious dream. I wrote down all the facts first. I realize that it was difficult to write ‘facts.’ Some of them were feelings, and I had to acknowledge it. I was tempted to write, ‘It is a fact that I am scared!’ Once I really decided what my criteria were to distinguish facts, I was on a roll. Feelings were next. I, of course, had lots of feelings. They ranged from sheer excitement to intense fear. It was very cathartic getting all of those feelings out of my heart and on the page. Finally, I wrote all my hunches. I expressed how my ‘gut’ felt about the situation. The best part was putting it all together and looking for themes and connections and drawing conclusions. Again, it felt good to get them on to paper and reread them. It was very enlightening” (Blaise).

Positives of Facts, Feelings and Hunches

- “While doing this activity, it felt very good to get all of my feelings out on paper and to see the problem from three different perspectives. I was listening to love song music while doing this tool, which in some ways helped me to come to a conclusion on my challenge. After putting all three together I saw that I was becoming too emotionally invested in the situation and that I wasn't getting anything in return. I feel a lot better about the challenge, though I know things won't change over night. For some strange reason, I do feel like a stronger person when I do these tools. The feeling may only last for a little while (just because I let myself go backwards a times), but a lot of these tools have helped to bring clarity to my situations” (Shawna).

- “I really like this tool because, as with most of the tools, it gives me time to actively reflect upon a situation. This time I found that I had more knowledge about the situation than I thought. In reality, I already knew my answer too, but the chance to see all the components spread out in comparison helped to verify me in this” (Eliza).

- “After acknowledging the facts, feelings and hunches and then stepping away
I found that when I returned there was a sense of clarity that had not been there before” (Sue).

- “I REALLY liked the hunches because of the freedom to dig and let myself trust my intuition on what I can do about the problem. Once again, because of the nature of the problem I chose, feelings kept entering into my mind while writing. The facts weren't as plentiful as I would have liked. However, what worked well was the hunches. The reason I would use this tool again is just so I can have an outlet to use my intuition and trust it. The writing came fluently as I felt connected to what I knew was my gut was telling me. And I felt comfortable with the ideas the "hunches" were coming up with!” (Mary)

- “What a great tool! It seems like something you should do for every problem, but is rarely set out in front of you like that. I think that was what made this so powerful. It forces you to dig deeper into every aspect of a problem- separating facts from feelings, but setting them out in front of you next to each other. After writing down information for each section, it’s easier to take it as a whole and get insights from it. I loved it” (Lily).

- “The F, F, H itool was beneficial for a couple of reasons and none of them were transformational but more incremental and summaritive in nature. I had a bunch of concepts floating around my mind and was feeling anxiety because I had not taken any actions to move forward or even truly address the issues, so I decided to use FFH to purge those thought (facts, feelings, and hunches) onto paper and see what insight it could bring (if any). What resulted was the confirmation of my "hunch" that what really needed to take place was not clarifying or uncovering more data but rather that, everything that I needed (for these challenges) was already in place and right around me, I needed to formulate a solid action plan (a vision) and then identify the smaller steps to make that happen. Also, of particular interest, it was revealed to me that I had already subconsciously taken steps to move many of the items into action (I am always very clever at hiding things from myself)” (David).

- “Reviewing my notes after writing down my facts feelings and hunches
helped me see that I am very fearful of pursuing this idea because it is so very new and that I am very apprehensive as a result. Afraid/Fearful was a recurring theme in the notes of this exercise. It was very useful though because it did at least help me identify part of my problem” (Joanna).

• “If I could have vocalized this experience it would have been a cross between a deep rejuvenating breath and a WooHoo!! I feel very connected to this itool. Maybe because each time I have used it, it has given me huge insights. I feel connected to my intuition when I use this itool. It is a tangible way to communicate with my intuition... So many important realizations came to me as a result of using this itool...I see myself juggling these beautiful balls; I am dancing, light and graceful, fluid and immensely happy. I am using this image in my meditation practices” (Jolene).

Opportunities for Using Facts, Feelings and Hunches

• “I decided to use colored pencils to further differentiate between the facts, feelings and hunches and this proved to be very helpful to the ever visual me. Because of this there were colors flying and paper being moved to fill in every available space. The color helped me to realize which category had the most information” (Sue).

• “I liked this tool a lot because I don't rely on my hunches as much as I should. Because of this, I have not always made the best choices” (Mary).

• “It was a really bright sunny day, so my kitchen windows were open. Light always puts me in a great frame of mind. I also had music on low in the background. I only try quiet for meditating. Normally, I like a little noise around me!” (Mary).

• “I also think this would be great to make ‘kid friendly’ in some way to use with students to separate facts from feelings which may resolve some of the conflict issues that arise in the classroom” (Anna).

Issues with Facts, Feelings and Hunches

• “The hunches aspect was the most difficult for me to do. It’s deliberately
using your intuitive sense in the situation/problem, and for me that was hard to do” (Mary).

How to make people feel comfortable using their intuition?

New Thinking to Overcome Issues with Facts, Feelings and Hunches

How to make people feel comfortable using their intuition?

For some people it is clearly difficult to listen to, and more importantly, trust their intuition. I believe the first way to get people comfortable with their intuition is by establishing the psychological climate as a place of openness and trust. Throughout the CPS session, it is important to deliberately give participants a place to voice their thoughts without judgment, and provide them the opportunity to share intuitive insights. This tool highlights the various functions with equal weight, giving participants a view of the whole picture.

Applying Facts, Feelings and Hunches to the Core Research Question: Are Intuitive Tools and Techniques Effective in CPS? If so, When are They Effective?

In an effort to fully understand this question and to utilize the tool, I have completed the facts, feelings and hunches on the research question:
Participants in this study were enrolled in my Holistic Approaches to CPS course.

11 students and three Facilitators used these tools.

This study began in January 2009 and ran over three weekends in three Months.

This study took place at the International Center for Studies In Creativity at Buffalo State

This is the first time a course like this has been taught.

This is a challenge because there is no data to support Intuitive tools in the research.

Because I value intuition, I value Intuitive tools. My thought is people who do not value intuition, may not value Intuitive tools.

I have noticed that when people hesitate or get frustrated for any reason while using these tools, the tools then tends to be ineffective.

Are intuitive tools effective in CPS? If so, when are they effective?

**FACTS**

- What are all the facts related to this question?
- Who is involved?
- When did this start?
- Where is this taking place?
- How have you handled similar situations?
- Why is this a challenge?
- How do your beliefs, values and culture influence your reaction to this question?

**FEELINGS**

- What are your feelings about this question?
- What excites you?
- What makes you anxious?
- What are you afraid of?
- How does this question affect your emotions?
- What are you afraid of?
- I feel curious, apprehensive, fearful and excited all at the same time.
- I am excited to read the participant responses and analyze the data.
- I am afraid that it will be difficult to judge whether an average person (not enrolled in a class of this nature) would find equal or less value in these tools.
- I feel anxious presenting the results in this unusual format.
- It leaves me feeling more curious. I wonder how to get these tools out to a greater audience to test and develop.

**HUNCHES**

- When you reflect on this question, what do you notice?
- What ‘signs’ have you noticed - both internally and externally?
- What is your 'gut' reaction to this question?

- When I reflect on this question, I think that some tools should be modified to be used in a non-threatening way.

My gut says that some of the tools will work some of the time- very much like cognitive tools and there needs to be a safe Psychological climate in order to use these tools.
Personal Reflection of Using Facts, Feelings and Hunches

I found that working through the various sections of this tool was invigorating and effortless for me. While I thought that starting with the facts would be the “right” place to begin, my intuition was telling me otherwise! I ended up writing a bit on intuition, and then went on to feelings and then back to intuition. In my experience of facilitating this tool, I have found that some people have problems differentiating between feelings and hunches. I explain the difference by saying that ideas and feelings, which you understand, should go into the feelings and facts categories, whereas ideas and feelings that you don’t understand should go into the hunches category. I was also surprised at how easy it was to generate unanswered questions, once I completed the three categories.

Image Streaming

What is Image Streaming?

Image Streaming is a divergent tool in which a participant closes his/her eyes, and describes in as much detail as possible, the images that come up in the mind to a partner or tape recorder. These images are then reviewed for a relationship to the challenge at hand. Image Streaming was originally developed by Wenger and Poe (1996) and adapted by Von Reumont (2006) and Bissett (2008).

Example of Image Streaming in Action

- “I also used a voice recorder. It was nice to go back over and listen to everything in detail once again- actually two times over. Every single word I said, I could hear, I liked that about using the voice recorder. I set my challenge and intention (it revolved around using affirmations- which ones are the best for me and how to really use them and believe them. I have been
reading the book *Creative Visualization* that I borrowed after Jolene read it for her book report and a big part of it, is using affirmations. I like this idea and am trying them, but need some guidance. So I decided to ask my intuition for help through this i-tool. I got comfy on my couch, no one was around. It was just me talking to my voice recorder. Yes, I did feel a little weird at first—was someone really listening? But then as I started to describe my images, I really got into it. After listening to my image streaming, I definitely had some insights. My image that I was actually describing was my creative visualization of how I wanted my life to be, feel, etc” (Lily).

**Positives of Using Image Streaming**

- “I love the idea of just capturing everything down to the last detail. For an observer this tool is like going into a candy store for the eyes. It’s amazing what can come up when you just give it a chance” (Sue).

- “I thought it was a great idea because it allowed me to create whatever images I needed to help solve the problem…What occurred during this experience was that I was able to view my challenge in many different aspects with whatever images my mind decided to create. It looked like a lot of mess running across my vision as I sat with my eyes closed. I liked that I didn't have to sensor my self to what was being asked of me. I was able to use whatever images came to mind” (Shawna).

- “I love this i-tool. It resonates with me because it allows my imagination to come out and play with my other thinking processes. It is also similar to creative visualization, but without a clear desired state…I used this tool to facilitate clarity around a goal. It gave me a deeper vision of my goal, and gave me many ideas about how to actualize my goal…It felt like I was dreaming. The images sometimes seemed disconnected and random, like in dreams. It was fun. I enjoy using my imagination and drawing connections. I also love to delve into symbolism. I was able to defer judgment easier while doing this by myself, as opposed to telling someone else. Strange images were just recorded without the concern of judgment from an outside listener.
Describing the images quickly also helped with keeping my cognitive processes at bay. The faster I went, the easier it was to defer judgment and refrain from trying to immediately connect the images to my goal” (Jolene).

- “I had wonderful visionary experiences and could see myself in the place I chose. Actually, it was so vivid that when I stopped, I felt funny because I wasn’t sure where I was. Feeling that way, I knew the tool had worked because I got in the ‘zone’ of the iTool...Just like in class, the insights I gained were insightful. I journaled right after and found myself writing many reflections, just like in the vision walk experience. Because I was able to journal so much and come up with some good work, I know the two iTools, the vision walk and image streaming really take me to a place I feel comfortable and at peace...I liked this tool and will do the next session with a partner!” (Mary).

- “In particular I enjoyed image streaming and it reminded me a lot of the ‘excursions’ tool from CPS. The difference with image streaming is that you verbalize your excursion; the similarity is that you attempt to touch, taste, and feel the place you go to in your head” (David).

- “I realized that I was able to describe the image better with a recorder, because I was not concerned with another person’s interpretation of what I was trying to say. I didn’t have to worry about my image being list in translation. That was really nice” (Blaise).

- “It was valuable to have what I said available for playback on demand. It made me think I really need a vacation. In class I reflected on snowshoeing and a particular hike I took. For this challenge I reflected on a general vision I have that has to do with camping; the smell of the fire, the heat, the log benches, the comfortable feeling of calling a cabin home for a couple of days, the silence and nature all around me. I felt very refreshed and relaxed after the vision streaming. I don’t know that it really helped with the challenge but it did transport me away from reality for a little while. For those who have not used this itool yet, I recommend the voice recorder, its nice to go back and hear what I described, even a week later as I am writing.
this” (David).

Opportunities for Using Image Streaming

- “The good thing is that the exercise is taped and I can refer back to it at any time” (Eliza).
- “I recorded my images for about eight minutes. It became easier as I went along. It took me a couple of minutes to get into the flow of the process. Once I did, a richness of imagery emerged. I wonder how the notion of striving for quantity relates to getting into the flow of images. Rather than a striving for images, I experienced a relaxation and grounding that helped me move fluidly through the process…How can this tool be used with children, like within ‘Imagine That!’? -How would reflecting immediately and later, after incubating, effect the process? -How could this tool be used to develop a mission statement? I think it would be a fantastic tool for that type of exploration” (Jolene).
- “I am going to continue using this i-tool as a tool for my creative visualization as well. It really helps me with it. I will also try it again with an unrelated challenge and see if I get similar results” (Lily).
- “I feel myself let go of tension and stress which frees me up to connect with an area of the brain that allows me to reflect on a situation” (Mary).

Issues with Using Image Streaming

- “It felt okay while I was doing it but when I played it back, I had trouble listening to my recorded voice. I ended up playing it back twice” (Sue).
- “The experience with a partner was more personal and it was nice to have a connection with someone. Although, with a voice recorder you can play back what you said a few times, I would prefer in the future to work with a partner again” (Mary).
- “This was not nearly as effective as it was when I did it in class. I struggled, again, with recording my own voice and having to listen to it purposefully. I also found that my mind wandered more – I went from one image to another
instead of keeping the same image the whole time” (Eliza).

**How to utilize the tool in a way that is comfortable for you?**

- “When I changed from image to image they seemed unrelated. I pulled some meaning from the image streaming that I can apply to my problem, but I felt like I chose the wrong challenge for the exercise” (Eliza).

**How to select the right problem?**

- “Maybe next time I need to be more open-minded with the answers that do come to me” (Shawna).

**How to be open-minded throughout the process?**

- “In some ways, I felt very rushed in this exercise... I felt that I needed more steps to force to develop a better image. As I mentioned in another tool I felt very heavy in the beginning because I felt that I was being asked for a lot up front... The only concern that I had was that I didn't really come to an answer that I wanted. Maybe that was selfish on my part because I wanted something different” (Shawna).

**How to come up with the answer I wanted?**

**How to accept the answer I received?**

**How to slow down the process?**

- “It felt strange at first. These types of tools always seem to work so much better in the ‘intuition bubble’ of class. Visions seem brighter, intentions seem more effective, and my overall confidence gets a boost” (Blaise).

**How to develop an intuitive “bubble” wherever you are?**

**What does an intuitive “bubble” look like?**
New Thinking to Overcome Issues with Image Streaming

How to select the right problem?

Similar to Creative Problem Solving, not all problems are suitable for intuitive tools. The criteria we use in CPS are 1. Do you have ownership over it? and 2. Is this problem something that warrants Creative Problem Solving? From my own experiences, and in reading the first set of data from this study, I think a challenge needs to be personal and meaningful to deserve intuitive attention. Questions such as, Should I buy this house? What should I do with my life/career? Should I get out of this relationship? Etc.

For me, the clear difference between the criteria for CPS and the criteria for intuitive tool is the fact that you do not necessarily need ownership to use an intuitive tool. The reason is because your intuition can shed light on a challenge or situation that you might not see. Therefore, the fact that you do not have ownership over the problem is irrelevant. For example, I was recently collaborating with a colleague. For some reason, I felt tension in this relationship and felt she was not contributing in the way that I had hoped she would. I didn’t have ownership over the fact that she wasn’t doing her end of the work. I decided to ask my intuition for assistance, and when I reflected, realized she wasn’t intrinsically invested in the collaboration as I had originally thought. We restructured the relationship, and are able to move on from this collaboration. This would not have been something I would have used CPS for - but it was highly valuable to uncover my tacit knowledge, and that lead to a resolution of the challenge.

How to present the tool in a way that is comfortable for you?

Different students preferred different modes of transcription during the use of this
tool. As the reflection papers noted, some found benefit in using a tape recorder, and others found it inhibited their flow. I think it is important to check in with the participants you are working with to decide the best means of capture for them. Perhaps, if doing this in a group, you could offer participants the opportunity to work in partnerships or on their own with individual recording devices.

**How to be open-minded throughout the process?**

I discovered, from the first set of data, that openness is a critical component to using intuitive tools. If people are not open to CPS and/or not open to intuitive tools, then I don’t believe utilizing them to start a session would be in any way useful.

Instead, I think it is important to initially set up the psychological environment, by introducing basic Creative Problem Solving skills, and providing a trusting and open space to discuss ideas. Then, once the participants are ready, merge the various tools and techniques into the session.

**How to come up with the answer I wanted? How to accept the answer I received?**

It is evident, from my reading and research, that the participant must let go of expectations and results, and focus on being present and open to the data intuition provides them. Intuition may not give the answer they desired. However, they need to recognize it as data, and reflect on the other elements of self (the cognitive and affective). Also, if the participant receives, what they believe to be, unrelated or irrelevant data, it is still important for them to acknowledge that data, and see how it may contribute to the resolution of the challenge at hand.
How to slow down the process?

One thing I noticed in teaching this course is that in general, iTools don’t work well if their application is rushed. Unfortunately, given the rapid pace of our 21st century lives, it is often difficult to get participants to agree to slowing down and not expecting immediate results. The challenge is therefore how to convince people that the results will be worth investing the extra time required to travel slowly. One approach might be to start with some of the “quick and dirty tools” as described by Bissett (2008), and to build people’s confidence through early ‘wins.’ Hopefully, this will lead to a greater tolerance for the ambiguity that is so often associated with the use of intuition.

What does an intuitive “bubble” look like? How to develop an intuitive bubble wherever you are?

While it is difficult to discern exactly what this participant was referring to, intuitively I believe she was referring to the safe, open, and trustworthy environment that was established in the class to utilize the various tools. Under these conditions, it is easier to take risks, make mistakes, trust yourself and be open for new ideas and connections to emerge.

In my opinion, I think that we can establish an intuitive bubble for ourselves when the psychological conditions for intuition are in place. I also think that by nurturing the intuitive skills we naturally trust and listen to ourselves more, which may allow for the bubble to be created around us. I also think it is important to identify and explore when and where our intuitive bubble is around us, and spend time some time there when faced with difficult challenges.

Applying Image Streaming to the Core Research Question: Are Intuitive Tools and
Techniques Effective in CPS? If so When are They Effective?

I sat on my couch in a comfortable position. I set up a tape recorder and began to describe the various images that came in my mind:

- I see a tree—it has a very, very long brown—almost drawn like in a crayon—very brown stump. It has big bushy green leaves on top. The sky is very blue with soft, white fluffy clouds in the sky. Almost like you could take them and eat them like cotton candy. I see a car. It is a yellow car. It is a punch bug. It is a very old punch bug. It has rust around the rims and smells like fumes. I see a brown wheelbarrow with rust all the way around it. It is holding big large red bricks that I imagine in my arms to be very heavy. As I touch it, it scratches my skin. I see a blue vase that is see-through. It is about three feet tall and it is holding yellow flowers—roses and tulips, lilies, daffodils, sunflowers. I smell the flowers and they make me feel better. I see chocolate chip cookies. They are fresh out of the oven. They are moist and gooey. As I go to pick one up off the tray, I put it in my mouth and it melts. I can taste the brown sugar. They are still a bit undercooked so I put them in the oven. It makes my house smell blissful. There is nothing like fresh baked homemade cookies. I see green grass, just being sprouted—little tiny green grass coming out the of dirt. I want to watch it grow, but I know I don’t have the time to sit and watch it. But I take note in the beauty of its simplicity and infancy. I see a black coat. It is a winter coat. It is a big old coat and smells like mildew. I put it on, but don’t like the way it feels. It feels wooly and scratchy and all I want to do is take it off. Instead I leave it on, because it is cold out, and it will keep me warm. I know at some point, I will be able to take it off.

Personal Reflection of Using Image Streaming

My experience with image streaming gave me the following insights into my challenge:

- Like the half-baked cookies, I am enjoying the exploration of whether or not
intuitive tools and techniques actually are effective, and I am willing to let the question “bake” a bit longer.

- With regard to the sprouting grass, this research on intuitive tools is also in its infancy. While I could probably spend my life exploring and understanding intuitive tools, I know that is not where my passion lies. My passion can actually be found in the whole tree- something much bigger than just the grass. For me, the tree in the image streaming session represents the growth of the work, and the clear and sunny sky represents the light that surrounds the work.

- The rust represents the people who are “rusty” in using their intuitions, and how they might come across to “scratch” me. I recently presented some initial findings of my research, and while some praised the thought of incorporating intuition in CPS, some were a bit “scratchy.” I recognize that this will not be for everyone, and that one must be open and willing to use intuition.

Blind Contour Drawing

What is a Blind Contour Drawing?

Blind Contour Drawing is a drawing exercise originally developed by Nicolaides (1941) in the book A Natural Way to Draw. As part of her Master’s project, Bissett (2008) further refined this exercise into an intuitive tool, which was tested as part of this data set. Blind Contour Drawing may be used to “gain insight into the unseen details of a given challenge particularly when assessing the situation, exploring the vision phases of the CPSTSM process, but can equally be adapted to exploring ideas, as well as other parts of the process” (Bissett, 2008, p. 31).

Like many other tools, this tool begins with a challenge in my mind. The
participant sits at a table with paper and pencil. The participant relaxes and focuses on the non-dominant hand and then draws the non-dominant hand with the dominant hand, moving very slowly and paying close attention to the detail. As the participant draws the hand, they do not look at what they have drawn, they simply keep the pencil on the paper the entire time and focus on what they are drawing. Once the drawing is complete, they put the drawing aside, and on a new sheet of paper, the participant begins to write whatever comes to mind in relation to the challenge.

The instructions were explained in class, and the resulting hand drawings are shown at the start of this chapter.

Example of Blind Contour Drawing in Action

- “The day after class I had six high school girls over for a Bible study I run. I usually do a warming up activity by asking them about their lives. This time I had them do contour drawing...I had to guide them in how to write their problem as a goal on the top of the page. Then I let them draw. Most drew their hand more than once. Some drew their hands open and then again close-fisted, and vice versa. One girl didn’t quite understand and drew a sunshine, which she later said was a representation of what she thought the answer to her problem was (H2 be happy). I thought it would be easier for them to pull out meaning from the drawing, but I realized I should have given them more guidance for this part. I didn’t think to give explicit instructions because it is easy for me to draw meaning from anything. It helped that they shared their insights with each other as a group after personally reflecting because it allowed the others in the group to build on the issue with more ideas. I thought this was a useful outcome of the experience. They each wanted to take their pictures home with them and said they enjoyed the experience. I was glad to test the tool with a group. One girl made the comment that she didn’t solve her problem, but journaling reflectively about
the activity made her realize she was targeting the wrong problem, which was an answer for her in itself” (Eliza).

**Positives of Using Blind Contour Drawing**

- “I think that may be the best thing about the exercise- I have always loved to draw and as I get older I find less excuses to do it” (David).
- “I actually like this tool because it makes me feel like I’m back in art class. I was never a good drawer, but now that I am all grown up its okay that I suck at drawing. I had fun with this one... My hand actually looked worse then when I did the tool in class. An insight that I took away was that I can't always be perfect. In a lot of the situations that I deal with I am always second-guessing myself if I am doing it right. I came to the realization that I can't do everything right. I can only be me and try my hardest” (Shawna).
- “When I was done I sat for a long time looking at the drawing and remembering the experience before I began to freewrite. I ended up with pages of writing and unbelievable insights into balance” (Sue).
- “When I finished with the drawing, I began to write. I made leaps and connections with the process, more than with the final drawing. I linked the painful slow drawing to the painful slow process that change usually feels like” (Blaise).

**Opportunities for Using Blind Contour Drawing**

- “I sat down with a huge sheet of paper that was the size of my table taped at the corners. I got one of those huge chunky pencils that you used when you were little, the kind that you had to hold in your fist because it seemed so huge...” (Sue).
- “My mind just was not focusing, I tried to plug through, but it just was not working for me. This time I did not use my hand, I used my sleeping son’s face. I was having a difficult time settling down. My mind was racing from topic to topic. I feel centered and focused when I am with Danny, so I decided to draw him” (Jolene).
• “I realized that I still have a lot to learn about slowing down and really paying attention to details. It is something that I have struggled with my whole life. I’m an implementer, so I am always ready to get things started. I rarely take the time to check and double check” (Blaise).

Issues with Using Blind Contour Drawing

• “I was not a big fan of this itool in class and it really hasn't done anything for me this go round either. I tried it at home with my challenge in mind and it did help me get some ideas (which is good), but I think the ideas came from my thoughts about drawing rather than drawing my own hand or paying attention to my own hand” (David).

• “So I wasn't a huge fan of this when we tried it during class. Giving it another shot helped, but I still don't know if I'm sold” (Lily).

• “This tool was difficult for me. I was surprised at how difficult it was. I am usually good at focusing when I need to. I had started and stopped this itool three times over the past week. My mind just was not focusing, I tried to plug through, but it just was not working for me” (Jolene).

• “I struggled with this iTool. It’s not that I doubt its effectiveness. I just have a hard problem looking at the final project! My drawing ability is suspect! I know that it’s not about drawing ability, but it’s hard to look at it objectively for an answer when it’s so darn ugly!” (Blaise).

• “The process seems a bit restrictive and forced to me. This tool does not work as well for me as some of the others as I do not feel a natural flow of energy with this one as with mind mapping to use an example” (Anna).

• “The blind contour drawing activity is not my favorite tool. I feel bad saying this, but I had a lot of trouble getting energy from it. I set aside my feelings about the tool and tried it on myself because I wasn't feeling positive about it and didn't want to portray this feeling onto anyone else I used a problem that was fairly simple about a project I want to start at school...When I finished, I didn't have any clarity. I was thinking maybe because it was abstract and I couldn't find anything logical. Or maybe because I didn't choose the right
problem. Finally, maybe I am over analyzing and it's okay that this didn't really work for me!” (Mary).

**How to accept that tools don’t work?**

- “It actually came out pretty well though, even the second time around too. I noticed though that I drew quite a few lumps and bumps” (Lily).
- “I started with the slow drawing and even though this is my second time doing it, I was totally out of my comfort zone. It was almost painful to have to draw so slow and really look at the details. This tool was good for making me stretch” (Blaise).

**How to let go of expectations of creating the art?**

New Thinking to Overcome Issues with Blind Contour Drawing

**How to accept that some tools won’t work?**

Bissett (2008) developed this intuitive tool as part of her Master’s project, but perhaps it is a tool that doesn’t work or needs to be modified. This was the only tool that the majority of the participants couldn’t connect to and didn’t like. Judging from their responses, I think they became too caught up in their expectations of “creating” something, instead of simply using the drawing as a way to incubate.

**How to let go of expectations of creating the art?**

If this tool were to be modified, I think it is critical for this to be emphasized as a type of incubation activity and NOT an artistic endeavor. As Bissett wrote,

Please note that this is not a drawing exercise, but rather an observation exercise. It is not about artistic skill, or a final product to be displayed. Blind contour drawings are often a tangle of lines, and are not meant to be realistic depictions of the object being observed. Have fun, relax, and learn
to observe! (p. 32).

Applying Blind Contour Drawing to the Core Research Question: Are Intuitive Tools and Techniques Effective in CPS? If so, When are They Effective?

My biggest insight upon completing this tool, was that in order for intuitive tools and techniques to be effective, the participants need to be open to going outside of their comfort zones, by taking risks and potentially making mistakes. With this type of open attitude, there is a greater chance of effectiveness, and at the same time, a greater chance of ineffectiveness if the tool is not managed properly. Therefore, the benefits should outweigh the risks. The facilitator needs to practice and understand the tools, and when best to use them, in order to ensure a positive experience.
Personal Reflection of Using Blind Contour Drawing

I began this session by stating my intent (the question that guided this portion of the study), and then started to draw my non-dominant hand without looking at what I was
drawing. I felt self-conscious about what I was drawing, because I knew I was going to put my own drawing into the chapter (see Figure 13). My curiosity led me to wonder if one of the modifications to this tool should be to state up front that this is not an artistic exercise, AND that it will not be looked at by anyone in the room. In fact, I wonder if the drawing should be flipped over until after the reflection period. I also wonder if it would make sense to do a practice blind contour drawing before hand (pun intended) to get participants warmed up to an art based activity. Finally, I am curious if finger paint, being a more playful medium, would be more effective then a sharpie marker.

Glass Of Water

What is Glass of Water?

Glass of Water is a tool designed to “allow the unconscious to sort out a challenge or question, and then to have it communicate the answer, solution or insight to the conscious mind” (Bissett, 2008, p. 26). This tool was originally developed by Jose Silva (1991), and elaborated instructions may be found in Bissett (2008). Participants in this study used the tool on a challenge before they went to bed. The process is quite simple. First, they filled a glass of water, while thinking of their challenge and intention. Next, they drank half of the glass of water, and went to sleep. Upon waking, they drank the other half of the glass of water, and wrote down any insights into their challenge.

Example of Glass of Water in Action

- “I spent the day researching and writing. Or actually attempting to write. I wasn't having much luck with how to organize my research and then I was done for the day. I decided to give this tool another chance and set my intention to know how to organize my paper. I got my glass of water (this
time I used a very small glass) and thought of my intention while filling it and sipping it very, very slowly. Next thing I knew I was in bed, waking up and staring out the window to see what the weather was like. I looked at the glass of water and there it was, 5w's and an H. Not literally in the glass of water but as soon as I looked at the glass of water that's what I thought. I immediately had the realization that the tool had worked. The next thought I had was "I wonder what will happen if I really drink the water and not just look at it?" So I sat up and slowly drank the water not knowing what to expect... the answer to another challenge, winning lotto numbers, a margarine crown... Nothing... I got nothing. For me just looking at the water triggered my answer and then I began to think and by the time I drank the water the moment was gone. It definitely has to do with the not quite awake state for me. I will use this tool again when the right moment presents itself” (Sue).

Positives of Using Glass of Water

- “I tried Glass of Water a couple of times, but only once did I take the time to fully set an intention and reflectively journal the next morning. I thought I had considered all the options, but as I journaled, a new idea appeared. It was just as I was summing up my thoughts, proving to myself that I had not reached my intended solution, when the words just fell out on the paper” (Eliza).
- “I felt great using this itool. It gives me focus, which I sometimes lack in approaching and implementing ideas. I love ritual, and this is a ritual of sorts. Rituals help to focus and ground my abstract nature to concrete reality. I used to do rituals for intention through prayer and nature magic. I moved away from it as I became more of a skeptic (the hazards and gains of dating a magician). I now see the ritual as a bridge between intention-energy and tangible reality. I have been using Glass of Water in a nightly ritual in conjunction with my meditation and affirmation practices. It works great for me” (Jolene).
Opportunities for Using Glass of Water

- “What about writing your goal/challenge/intention, on the inside label of the water bottle, so it's literally staring you in the face in the morning” (Russ).
- “I decided to use the glass of water iTool to practice the art of setting ‘intent.’ I’ve had a rough month, and I wanted to have a drama free day. I set my intent, and I drank the water. I said aloud three times, “I will have a drama free day tomorrow!” Then laid down to rest. When I woke up in the morning, I drank the remaining water, focusing on my intent: Drama free day. I began to write the things that usually brought stress to my day like being late, misplacing things, meetings at work, and over scheduling. I then wrote ways I counter these things, or even prevent them from stressing me out. The result was me, feeling centered and prepared for the day. The day didn’t end up being totally drama free, but I had my ‘intent’ to refer back to” (Blaise).
- “I am a notoriously slow (and also meticulous, if that makes sense) incubator and I will revisit the ‘glass of water’ challenge I developed again tonight and probably more nights just to see if anything comes of it. I take the glass of water as symbolic but I think there is some very intentional things I can do to facilitate my subconscious problem solving process-especially by revisiting the challenge for many nights instead of expecting results immediately” (David).
- “I have used the glass of water tool many times in the past few weeks; the best results have come when I write upon waking. I have also used the tool as part of my new nightly affirmation/meditation ritual. I set my intention for a good restful rejuvenation sleep, and a fantastic day filled with peace, joy, growth and love. I wake up feeling great and excited about the coming day. I am also managing stress better” (Jolene).

Issues with Using Glass of Water

- “My only question is, if the solutions many of us seek result from our time of reflection, is it just the art of reflecting within a set time frame that produces
ideas? In other words, would I get the same, or equally valid, results from setting aside an amount of time at any point during the day as long as I gave the task my full attention?” (Shawna)

Would simply setting aside time to reflect produce equally valid results?

• “For this tool, I used another small scale problem. I think it allows me to let it go for the night and to get a better sleep to, well, sleep on it. When I woke up, I finished the water (which was a bit warmer now) and I took my notebook into the bathroom. I wrote, “Not feeling much in the way of insight. Feeling ready for the day though. Maybe a shower will offer more?”... But maybe the problem wasn’t significant enough to warrant intuitive insight. Maybe the feeling of being ready to face the day was my insight. Perhaps next time I’ll try a bigger problem...” (Lily)

How to select a significant challenge to work with?

• “I understand how the Glass of Water tool could be useful, but at this moment in time it just seemed like it got in the way of a usual process I find in rest and sleep” (Anna).

How to have a restful sleep when working with intuitive tools in the evening?

New Thinking to Overcome Issues with Glass of Water

Would simply setting aside time to reflect produce equally valid results? It is difficult to know whether or not this would produce equally useful results. This tool is designed to set intention, allow for incubation through sleep, and then to reflect when the mind is clear in the morning. Further research is required.

How to select a significant challenge to work with?

This is similar to a concern in one of the previous tools. Again, the challenge that is selected should warrant Creative Problem Solving and an intuitive tool.
Personally, I would not use Glass of Water to explore what I should eat for breakfast, but I may use it to explore how to get my two-year old to eat a wider range of food.

**How to have restful sleep when working with intuitive tools in the evening?**

When we discussed this tool in class, a number of participants were concerned because focusing on the challenge before they went to sleep, caused them to have upsetting or busy dreams throughout the night. Additionally, drinking a glass of water before bed also caused them to have a biological problem in the middle of the night!

After further discussion, we decided to use this tool during the day, as an experiment. We set the intention before lunch, drank a half a glass of water, and returned after lunch to finish the glass and reflect on the challenge. Many of the participants found this to be more useful, and felt that it overcame the disturbances that were caused by doing it at night.

**Applying Glass of Water to the Core Research Question: Are Intuitive Tools and Techniques Effective in CPS? If so, When are They Effective?**

For me, this tool was unquestionably the easiest to do, but the most difficult to complete. The tool requires drinking half a glass of water before bed and drinking the rest of the water upon waking, followed by a period of journaling and reflection on the problem. I had no problem setting the tool up in the evening, but given I already wake up at 5am every morning to feed my baby, I couldn’t manage to get up any earlier to produce any kind of thinking.

After several weeks of failed attempts, I decided to modify the tool to work for me. I set up a bottle of water in my office, wrote the question down, drank half the bottle of water, and when I returned to my office the next day, completed the tool. I am
not sure if this affected my results, but this was the best I could do given the situation. When I returned to my bottle of water to take a sip, I spilled a mouthful down my face and on to my shirt. The insight I had on my challenge question was intuitive tools need to be handled with mindful care. If you try to rush the tool, it will not be effective. Also, you shouldn’t drink too much at once.

Based on my experiences facilitating this tool, I believe this is a fantastic way to bring deliberate intuition and incubation into a CPS session.

Art Gallery Of Your Mind

What is Art Gallery of Your Mind?

The purpose of Art Gallery of Your Mind is a “to use imagery to tap into intuition in finding possible solutions or answers to a given challenge, or to gather insights in exploring a situation or challenge” (Bissett, 2008, p. 29). To introduce this tool, I took the participants to the new Burchfield Penny Art Center located on Buffalo State College campus. They had to bring a challenge that they wanted to address through their intuition. The process was quite simple. As the participants walked around the gallery they had to select a painting, or photograph, and “spend time with” it. Next, they had to use their senses to describe the painting, and then describe the painting through poetry. Finally, they had to look through their notes to find connections to their challenge. For more elaboration on this tool, please see Bissett (2008, pp. 29-30).

Example of Art Gallery of Your Mind in Action

• “I prepared my challenge question, took a moment to set my intention and walked through my house looking at all the paintings, photos, posters and sculpture until I found one that I was drawn to at the moment. I took the oil
painting of the New Mexico landscape/skyscape out onto my back porch and sat with the painting three feet in front of me. What did the tool look like in action? It looked like me relaxing on my porch in my old metal chair, rocking and staring. At some point it looked like me being drawn into the painting head first, almost like I was diving into the rolling clouds. Eyes were closed, eyes were open, deep inhales and at one point I picked up the painting and felt it with eyes open and closed. What did it feel like? I felt very at home on my porch, comfortable with the familiarity of my painting. At some point along the way I felt like I was falling into the scene and that was a wonderful, relaxing, calming adventure. What did it sound like? It sounded like wind blowing, birds singing and squirrels running through the trees. I think the squirrels were running in the tree just off my porch! What worked and didn’t work? I really wanted to be able to handle the art so I chose to do this at home with a piece of my own art. It was really nice to take the time, and experience something that I look at everyday on a different level. Many different things came up; my connection to the area, the artist, the mood of the painting. I loved the way that this tool engaged all the senses. The journaling at the end was very important for me to do immediately. Otherwise I could have stayed in that meditative state and forgotten what my challenge was” (Sue).

**Positives of Using Art Gallery of Your Mind**

- “When I practiced this tool on my own I found it interesting that the main punch for me came during the poetry section. I tried to concentrate and expound with the other questions, but all my observations were surface-level. Then, I started writing the poem. I expected to write four lines, but when it came to writing the fourth line, the poem took me down a new path. I expounded on emotions I had not intended to discuss. I realized that the emotions coming out, that I was projecting onto the subject in the picture, were really the emotions I was feeling about the challenge. The tool turned out to be helpful as I became honest with my own emotions, giving me a level
from which to move forward towards a solution” (Eliza).

• “This itool is fantastic! I love symbols, metaphors, and art so this itool combines many things that naturally resonate with me... It felt very natural for me. It was fun to explore a photograph that I was already familiar with, and take it to a deeper level. There were tremendous connections that I was able to make with my challenge. It was emotionally intense, due to the nature of my challenge, but it was a welcomed intensity... I really like delving into the photograph. I explored it on a deeper level than I had ever done previously. Sally Mann’s work is filled with metaphor and depth. The intricate nature of the photograph provided a great wealth of input for me to explore. I think that a simple art piece would also work, but for my particular challenge, it provided a depth that fed my intuition” (Jolene).

• “The gallery was essential, and I did find connections between my challenge and small parts of the painting that I wouldn’t have “pulled” if not for the questions asked by the iTool” (Blaise).

• “I was feeling kind of down about some stuff that was on my mind and I was trying to get some clarity on some things which have been on my mind when I began to reflect on our classes art gallery experience. This made me think about the "machine graveyard" at my old place of employment. It is a basement full of retired machinery and tooling from my last machining job. I called up the owner and asked him if I could come over and say hi to the crew and then stroll the basement, he was happy to have me. I was feeling much better once I connected with some of my old coworkers but I still had my challenge in mind when headed for the "graveyard.” It was great! I found an old machine that I worked on before it was sent down there. I drew a rough sketch of the machine and wrote down all the aspects that made it up, imagined who worked on it before me, who built the machine, who designed, the ship or plane it must have come over to the U.S. on (it was built in Japan in the 1980's). I shared my insights with my coworkers and somewhat explained, as they asked, "what the hell I was doing down there? I gained some great insights and had a fun afternoon!” (David).
• “I felt at peace in the room and was able to have a great experience. I enjoyed the part of the tool where my eyes were closed. Just hearing the crickets gave me such a good, warm feeling. Because my challenge involved family, memories of summer and camping with family created visions in my head. I was able to write many ideas and thoughts in my journal during the experience and after” (Mary).

• “I did enjoy pretending I was in the picture and discussing what sounds I might hear and what it might taste like. Creating a new word and poetry was also fun” (Joanna).

Opportunities for Using Art Gallery of Your Mind

• “I wonder: -Is it easier or more difficult for a trained artist to use this tool? I wonder if specific art training would affect the process in how they view the art work. -How would the use of collage work would be for this itool? I love collage work because of the interconnection. I think that it would be very interesting to try. -What would it be like to use a self created art piece, maybe one that was created a few years ago? I think that revisiting your own creation would be interesting” (Jolene).

• “I can also see this tool being expanded to be used in a walk in nature” (Anna).

Issues with Using Art Gallery of Your Mind

• “I think my main hang-up with this tool is that it is so long. There are so many questions and so many sections, and I end up wanting to rush to the end” (Eliza).

• “I found the instructions on this tool to be cumbersome and too lengthy, which kept taking me out of the relaxation zone where most productive things happen for me. It felt too contrived” (Anna).

• “I liked this tool but was also a bit put off by the number of instructions and the very short period of time given to accomplish the task” (Joanna).

How to provide quick and easy instructions?
“I expounded on emotions I had not intended to discuss. I realized that the emotions coming out, that I was projecting onto the subject in the picture, were really the emotions I was feeling about the challenge. The tool turned out to be helpful as I became honest with my own emotions, giving me a level from which to move forward towards a solution” (Eliza).

“It was emotionally intense” (Jolene).

How to manage emotions that might emerge that participants and facilitators might not be prepared for?

“It wasn't exactly what we did at the art gallery but it was the best I could do (I'm really not a fan of formal art, such as we have in Burchfield-Penny)” (David).

How to utilize other “forms” of art?

New Thinking to Overcome Issues with Art Gallery of Your Mind

How to provide quick and easy instructions?

This tool was presented in the way it was developed in Bissett (2008), consisting of fifteen steps. These steps included a full sensory experience, exploring emotions associated with the painting, writing poetry drawn from the emotions, and making connections. This tool could easily be modified to create a version that encapsulates one small piece of this elaborated tool.

How to manage emotions that might emerge that participants and facilitators might not be prepared for?

This is my greatest concern in using intuitive tools. When we engage with the unconscious, we tap into the hidden aspects of a person. This tacit knowledge may be emotionally charged, and as facilitators of intuitive tools, we need to be prepared to
manage these emotions.

To prepare our participants to use these tools, we must set up a psychologically safe and trusting environment, tell participants that they do not need to participate in anything they are uncomfortable with and give them an option to stop at any point.

If emotions arise, then the facilitator would need to listen and help the participant to a place of comfort. For example, if working with a group someone starts to cry, the facilitator should take a break and check in with the individual. Further research on ethical practices using these types of tools needs to be conducted.

How to utilize other forms of art?

This tool does not need to be limited to formal works of art. A person could go to a junkyard, a garden, a bakeshop, a shoe store- the ideas are endless! I also think this tool could be modified to fit the group of participants. For example, when working with
Figure 14. The Feather of Ma’at

A group of engineers it might be appropriate to visit an automobile dealership, and to ask the participants to view the vehicles from an aesthetic perspective.

Applying Art Gallery of Your Mind to the Core Research Question: Are Intuitive Tools and Techniques Effective in CPS? If so, When are They Effective?

Personal Reflection of using Art Gallery of Your Mind

- With the idea of modifying this tool and not having the time to visit a formal art gallery, I decided to utilize a piece of art in my office. I began by setting my intention and asking the question, “are intuitive tools and techniques effective in CPS? If so, when are the effective?” I reviewed the piece of art—“The Feather of Ma’at” created by a former student and photography
professor, Catherine Carderelli. This work was sent to be on display at my former mentor’s memorial dinner two weeks ago, and was still sitting beautifully on my office desk when I decided to practice this tool.

- As I sat with the work, I began to look at the detail of the feather. Over the last few weeks, I have looked at this feather dozens of times. However, it wasn’t until I looked at it closely that I realized it was not an actual feather, but a photograph of a feather! This blew me away! How did I miss that? I was curious where this feather came from, what made the artist create it, and what the feather symbolized.

- This picture made me feel as if I was floating away, feeling “light as a feather,” and at the same time, it was also a bit rough around the edges. I envisioned beautiful birds sweeping through my office space, and all I wanted to do was reach out and touch them. Upon closing my eyes, I saw a fluffy feathered pillow filled with these beautiful feathers, and the pillow was as soft as silk.

- When I reflect back on my intention question, I realize that in order for intuitive tools and techniques to be effective, we need to play close attention to the details, otherwise we might miss the purpose of the tool. Intuitive tools are only effective when we are mindful and open to what it is we are meant to see.

**Vision Walk**

**What is a Vision Walk?**

A Vision Walk is a way to generate states that fluctuate between consciousness and unconsciousness. As a participant goes on a walk, “whatever catches the attention and is most likely to ‘resonate’ with the issue at hand, bringing the conscious mind in closer proximately to where the spark of inspiration, ideas and solutions can ‘jump’ across into consciousness” (Bissett, 2008, p. 43). This tool begins with a guided meditation. Once participants go through the meditation, they may choose to continue to
meditate or go on a 10-20 minute walk “like they are floating in a dream” (p. 43), paying attention to the world around them. To conclude, the participants write a reflection in their journals.

Example of a Vision Walk in Action:

- “I sat under a tree in a park near my house and listened to the guided meditation. Then I walked around my quaint neighborhood in the village. It was a beautiful day. I did not make much noise, but my walk was filled with sound: birds, children, bells, music, wind, squeaking swings, cars, etc. I listened for sounds that resonated with me, and there were many that related to my challenge. There was a point in my walk that I heard the song of everyday life. It was beautiful. I relaxed into the song and it carried me to a depth of understanding my challenge. It felt rejuvenating, inspiring, and peaceful. I felt grounded, alive and connected. The process was very auditory for me. It felt like my intuition was softly singing to me” (Jolene).

Positives of Using a Vision Walk

- “What worked: Recording the guided meditation was very helpful. I think that it is very important to be in a relaxed and open frame of mind for this tool. The meditation helped to prepare me for the journey” (Jolene).
- “I thought this was a really great experience because it forced me to go into a very deep meditation” (Shawna).
- “At times, it was very peaceful and I got a really good feeling. Other times, as cars whizzed by or something, it was like my concentration/focus was broken/interrupted. I had streaming thoughts the entire walk, about my surroundings, things I’ve never noticed, good things, bad things, my feelings, my questions, my anxieties, things I’m grateful for- a lot of thoughts!” (Lily).
- “I read the guided journey out loud and was not surprised at the question that presented itself. It seems as though the universe is trying to tell me something. Anyway, I went on my vision walk and completely enjoyed it. The
entire process from guided visualization to signs and symbols presenting themselves was just the affirmation that I needed at the moment to push on. Another lovely iTool” (Sue).

• “The walk was enjoyable because I really took notice of textures, smell and sound. I just floated along for about 30 minutes. I wanted to journal immediately after, so I had my notebook with me. Finding a bench along the water, I sat and actually wrote about 4 pages of material, and mindmapped! If I could vision walk along the ocean like this all the time, I think all of my problems would be solved (just kidding), but the experience left me feeling peaceful and able to open up enough to free write many things and come up with some good ideas and thoughts...So, great tool and one that will be used in the future! (Mary).

• Nature sounded wonderfully loud and I felt connected and overwhelmed by the beauty I witnessed. This tool definitely taps into the reality of the possibilities of expanded consciousness” (Anna).

• “I really had some great revelations and positive vibes going around my challenge. I felt the need to move right into a plan of action and I acted that afternoon; I was very inspired. I really went out on a limb with this one, but it very personal so I will not share, but I feel like I made the right choice and it has had great implications for my happiness overall. I feel like many times in my life I have been on a vision walk and I'm happy it surfaced as an itool in our class because now I can be more deliberate about employing it and when you love the outdoors and nature like I do, its a good excuse to get out and enjoy life!” (David)

• “What I most enjoyed about my vision walk was that I was able to focus on two persons who remained in the room with me and focus on them for use in my challenge. I used their movements or lack thereof as a segue into solving my challenge. I found this most entertaining, amusing and surprising since I was concerned that my lack of desire to ambulate would stifle my creative ability. Nothing could have been further from the truth! My creative fire was stoked and did not want to be put out once it was lit.
I appreciated that this vision walk is not necessarily as literal as it seems” (Joanna).

Opportunities for Using a Vision Walk

• “I turned off the audio and took myself on my own journey. I ended up combining the walk with the visualization – which could also be considered an image streaming session” (Eliza).
• “I wonder:
- Some of the things I noticed on my walk did not seem to speak to me, but I wrote them down anyway. I wonder if they will eventually or if they were just random bits of information.
- What structures of the brain would be activated during the use of itools?” (Jolene).
• “I didn’t just have thoughts on my question, but other ideas popped into my head about the upcoming summer” (Mary).
• “I really saw some great things in my neighborhood which I had been missing previously” (David).

Issues with Using a Vision Walk

• “I wasn’t sure if I wanted to be lulled into a guided visualization by my own voice, but I recorded myself reading the journey anyway. However, when I made time to implement the tool a few days later, I couldn’t bring myself to go through with listening to the audio I recorded. I tried, but I couldn’t relax while listening to my own voice” (Eliza).
• “It was awkward at first to hear myself saying this guided meditation but I think now that I’ve used it, I’m going to keep it on my voice recorder and continue to use this tool with it. I think hearing myself say it might actually benefit my focus and I might actually internalize it more (hopefully) (Lily).
• Ok. I was not feeling this on my own. It just didn’t work. Trying to lead myself on a “guided journey” just felt ridiculous” (Blaise).
• “I would have liked to have someone else read the visualization. If I do this
alone again I might record myself reading the visualization and then play it back. I might even write my own visualization to make it more personal. I liked the quest journal prompts because they gave just enough direction without leading” (Sue).

**How to have a prerecorded voice to guide the visualization aspect of vision walk?**

- “At first I felt very heavy because it felt like I was being asked for a lot emotionally that I don’t know I was ready to give yet. I had a lot of images going on in my mind because at first I was in the control tower and then in the heart room where I was asked to let my problem go. At first, I felt that this exercise might be too much for me to handle, but then I felt relieved when I was asked to let my challenge go and let the universe figure it out. The end part of this tool was very important to me because in order to truly let my problem go, I needed a place to release it” (Shawna).

**How to manage the emotions that might come up in this exercise?**

- “I felt pressured in regard to time. So that was in the back of my mind throughout my walk. Although I had a good experience, I think that if I did not feel constrained it would have been even better” (Jolene).

**How to have enough time to make this a relaxing activity?**

- “It felt forced, just like the Artsy Fartsy iTool, because I didn’t feel like I was doing it “right.” This was because of my failed journey” (Blaise).

**How to use the tool organically?**

**New Thinking to Overcome Issues a Vision Walk**

**How to manage the emotions that might come up in this exercise?**

This issue also came up in Art Gallery of Your Mind. With this tool, it would be
more difficult to check in if people are on walks (and out of view), and at the same time, if a facilitator notices emotions have emerged and need to be further explored, there is time in this tool to pull the person aside, and have a discussion.

**How to have a prerecorded voice to guide the visualization aspect of vision walk?**

This tool begins with a guided visualization and it was awkward for some of the participants to guide themselves through a visualization. In a case where there is a facilitator, this issue would not be of concern. However, when doing this on an individual basis, it would be useful to have a prerecorded guided meditation/visualization.

**How to have enough time to make this a relaxing activity?**

Again, there needs to be enough time allocated to get into the state of mind required for this activity. Either, the facilitator needs to factor in the time, the tool needs to be modified, or the tool should not be used.

**How to use the tool organically?**

Selecting the right tool for the task is a critical, and potentially difficult process. Ideally, the selected tool should feel like a natural enhancement to the overall CPS process. On the occasions when the wrong tool is selected, participants will feel as though they are being ‘forced’ to work in an uncomfortable manner, and usually struggle with, or completely reject the tool. Even when the tool is accepted by the participants, it may still not achieve the desired result. For example, a facilitator should not use the vision walk if he/she wants to encourage teamwork, because this is not a team-based
activity.

For the purposes of this research, I asked my students to try all the tools, and in some instances, they had to force the use. This is to be avoided in general.

**Applying Vision Walk to the Core Research Question: Are Intuitive Tools and Techniques Effective in CPS? If so, When are They Effective?**

**Personal Reflection of Using Vision Walk**

- *I set out to try this tool on a number of occasions, but my timing never seemed to work out. Finally, on a day I was emotionally exhausted, I found the time to practice the vision walk. Too many things were clouding up my mind, and I couldn’t focus on anything. Intuitively, it felt like the right time to do this particular tool.*

- *To begin, I laid on the grass in my front yard. It was a beautiful, warm day, and the sun beat across my body. I didn’t have a recording to do a guided meditation, so I did a breathing meditation. As I took each breath, I paid attention to the sounds around me—cars driving by, birds flying, leaves rustling, children playing down the street. After ten minutes, I stood up and begin to walk around my neighborhood.*

- *When I was walking, the thought, “nothing is happening,” kept coming up in my mind. I gently reminded myself to let go of expectations and continued to breathe in the fresh air. My walk only lasted about 20 minutes, but at the end of it, I felt completely calm and focused. The only insight I had relating to the research question was the fact that some intuitive tools should be done after being calm and aligned, and others help you become calm and aligned.*

- *I think this it the perfect tool to bring into a facilitation when people are emotionally or mentally exhausted. In my opinion, it is important to do this walk individually, with no added interruptions (headphones, cell phones, outside interferences, etc). This tool provides a non-threatening way to get people in the state of mind to use their intuitions.*
Labyrinth

What is a Labyrinth?

The Labyrinth is “an ancient, flowing path designed to be a walking meditation. It offers only one way in to its center and the same way back out” (Francisco, 2006, p. 3). Francisco also believed that a labyrinth could be used as a metaphor for divergent and convergent thinking, and is the “ultimate creativity excursion” and “idea incubator” in creativity. There are many places that host a walking labyrinth (http://labyrinthlocator.com/), however, a finger labyrinth may also be substituted.

When I introduced this tool in class, I gave everyone a hand-carved wooden labyrinth to practice with.

Example of a Labyrinth in Action:

• “I set my intention with my challenge. This challenge was more of a curiosity, I suppose, that an actual "problem" challenge. I took a few deep breaths and began tracing the labyrinth. I traced it slowly and it seemed to flow so easily as I went through it. I repeated this three times. After each time through, I put it down and wrote down the thoughts and insights I was having that time through. After the third time, I wrote down any remaining thoughts and tried to tie it all together with my challenge. I loved what I ended up thinking about and my insights, even though I couldn't make an exact connection to my challenge” (Lily).

Positives of Using a Labyrinth

• “I really enjoyed this tool because I physically got to touch the tool while I went through the experience. While using the pointer to go through the labyrinth I noticed that focus was on delicately going through the maze until I got to the center. In some ways I felt free because it forced me to focus on the
center of myself to find an answer. At first it looked like a complicated maze that didn't seem like it would come together. But at the end the maze was very smooth. I could hear the metal wand scraping against the freshly cut wooden maze. It felt very relaxing to circle around the maze for a couple of times” (Shawna).

• “When I read through the directions this time, I noticed the part about having an affirmation to recite as you walk. Somehow I missed this before. Anyway, I affirmation/mantra I chose turned out to be, in a sense, my answer. It was from saying the affirmation over and over to myself as my mind wandered with my finger through the labyrinth that I discovered some truths about my situation I had chosen not to see before. The answer to my question was simple, but it was the steady, reaffirming voice in my head that gave me the confidence to trust my instinct and believe the answer was true” (Eliza).

• “The Labyrinth reminded me that the journey is the experience and that the best rewards lie in the steps to get there and not always so much the arrival... I didn't arrive at a solution to this challenge but a more definitive direction has come to light” (David).

• “I focused on a challenge that was very personal and filled with emotion. I approached the labyrinth with the surface intention of finding a solution. The process did not give me an answer, but a new and deeper understanding and peace... I really like how the instructions highlight the importance of detaching from the intention. This was a vital step for me. My intention was to bring into my awareness a solution. What I received was a subtle message from my higher self. The detachment from my intention allowed me to flow in a new direction, contact my Higher self and receive deeper understanding. The Labyrinth lead me in a different direction. If I had not detached from the intention, I may not have moved as fluidly in that new direction. This detachment may be an important step for the majority of itools.-I love how connected the Labyrinth is to the CPS process.” (Jolene).

• “I took the time to really work with the directions and make sure I was ready
before I moved on. I have a lot of stuff going on so I decided to keep the intention, question and affirmation more global or general than specific. This worked perfectly and I found that by the time I got to the center the insights were piggy backing, crossing and bouncing off each other. I find this tool to be very relaxing and nurturing in the balance and flow of the movement and the fact that there are no decisions to make. Once you begin you simply move inward until you emerge. I also like how the path in is the same path out, and yet it felt very different going in than it did coming out... I felt completely at peace and relaxed even when the insights were coming at me like fastballs. I don't think I flinched once!” (Sue).

• “This challenge was more of a curiosity, I suppose, that an actual 'problem' challenge. I took a few deep breaths and began tracing the labyrinth. I traced it slowly and it seemed to flow so easily as I went through it. I repeated this three times. After each time though, I put it down and wrote down the thoughts and insights I was having that time through. After the third time, I wrote down any remaining thoughts and tried to tie it all together with my challenge. I loved what I ended up thinking about and my insights, even though I couldn't make an exact connection to my challenge. My insights were more life-in-general insights, and even though I didn't "solve" a specific challenge, they helped me. And now I am incubating on them and will go back and read over my journaling to see if I can make a connection after some more incubation” (Lily).

• “I like using the labyrinth as a means of meditation and to assist in mindfulness and awareness about our ability to make a path leading us to a high consciousness (center, oneness aware of the universal energy and order)” (Anna).

Opportunities for Using a Labyrinth

• “I didn’t do this exercise to find one particular answer. I just did it to free my mind” (Shawna).

• “I ended up doing the finger labyrinth on my computer screen and capturing
insights right on the word document below the image. I did this method more out of necessity because I was in a place where I didn’t have my paper or wood maze. I cringed when I started because I know you’re not supposed to touch a computer screen, but I really liked having the image and the documentation so close and accessible. This electronic version gave me a new understanding of ‘portable labyrinth’” (Eliza).

• “The labyrinth has been recovered from the depths of the piles on my desk and is now displayed prominently and ready for more frequent action in my problem solving process and also will serve as an escape to mindfulness when my plate becomes too full. I like when my skepticism is dispelled” (David).

• “The Labyrinth is beautiful and is displayed in my office and people ask to ‘play’ with it all the time. I use it as an opportunity to teach them it is a tool to be used, not a toy” (Blaise).

• “I wish I would have had the opportunity to walk an outdoor labyrinth. I know that in the future I will try different things like using my finger, closing my eyes and spending alot more time circling and resting in the center” (Sue).

• “I have mostly used it just to take a break and re-focus myself every once and awhile. It really does have a calming and centering effect” (Lily).

Issues with Using a Labyrinth

• “For me, this type of itool really needs the preparation of a space within the user. A place of relaxation, trust, patience, and openness” (Jolene).

How to create a psychological space for intuition tools?

• “When I read the instructions of ‘detaching from my intention,’ I realized that I was not ready to effectively use the tool. I didn’t want to detach. I went back to step one and thought of another intention. Nope...didn’t want to detach. I don’t think I’m the “detaching” type of girl!” (Blaise)
• “I did not enjoy the tool. I much preferred the vision walk to this type of walk. I think why is because I didn't want to detach myself from the intention. I felt detached from the process when thinking this way and couldn't connect to the tool. I even tried the process at my favorite place, along the ocean, and still couldn't feel anything” (Mary).

How to manage people who don’t want to engage in the tool?

• “I think the instructions overwhelmed me until I found the best place to start” (Sue).
• “The prescribed instructions felt a bit too prescribed to me and in the future I will use the mini labyrinth most effectively as a reflection tool” (Anna).

How to simplify instructions?

New Thinking to Overcome Issues with a Labyrinth

How to create a psychological space for intuition tools?

As with other intuitive tools, the labyrinth needs to be used in a psychologically safe space in order for the participants to be authentic, calm, open, relaxed and present. Creating the space begins with the physical environment. Personally, I have found using an open space, with chairs in a circle - and no tables to hide behind - is essential. Ideally, there should be bright, natural light in the room, plenty of water and snacks available, and relaxing music played. The facilitator should welcome and acknowledge each person as they come in the room and do regular check-ins with everyone involved. Again, it should also be stated up front that people may opt out any point if they feel uncomfortable.

How to manage people who don’t want to engage in the tool?

I have seen this tool presented in a number of different ways. While people often
decide to walk the labyrinth and deliberately engage it in Creative Problem Solving, I have also seen people using it as an incubation, and even relaxation, tool. Interestingly, people seem to find the finger labyrinth just as engaging as the full sized version.

The labyrinth has a polarizing effect on people. Some love it, and others - at best - find it pleasant but largely pointless. Fortunately, it is also the type of tool that can be offered to a group, and the individual participants can then choose to use it if and when they feel it is appropriate.

**How to simplify instructions?**

Again, this tool may be modified from the original version that was presented to the students in class. The suggestions as stated above would also help individuals to utilize the labyrinth in the best way they see fit.

**Applying the Labyrinth to the Core Research Question: Are Intuitive Tools and Techniques Effective in CPS? If so, When are They Effective?**

**Personal reflection on using a labyrinth**

- **To begin this tool, I brought out my hand-held wooden labyrinth, and sat at my desk. I reviewed the instructions (Bissett, 2008; Francisco, 2006) for the tool and the core research question. The instructions stated that I needed to “detach” from the challenge and let the information naturally emerge. As I began to trace the labyrinth with my non-dominant hand, my mind began to race. I continued to repeat the phrase “I am present,” and was able to acknowledge what was going on in my head. Once I acknowledged the noise, it seemed to go away.**

- **Using the tool produced a number of insights – both related and unrelated – to my research question. For example, for a number of weeks I had been struggling with the design of the facts, feelings and hunches diagram. After**
using the labyrinth I realized what I needed to change in the design. A second example was that I came to the realization that in order for intuitive tools to be effective, you need to trust yourself. Although I had had similar thoughts in the past, I was really struck by the power associated with this insight. As I traced the labyrinth, with my finger, I felt myself censoring my thoughts, and then saying, “I trust myself.”

- My final insight came from my initial need to race through the labyrinth so that I could tick it off my “things to do” list. Half-way through the labyrinth I recognized that I was defeating the purpose of the tool, stopped, and took some deep breaths. I realized that these tools needed to be set up with time—time to play, time to reflect, and time to “be.” For me, intuitive tools are a gift of time. They have the potential to help me dive deep into the heart and mind, and to produce have powerful insights, but only if one takes the time to use them ‘properly.’

Thin-Slicing

What is Thin-Slicing?

Thin-Slicing (Francisco, 2008) is a tool developed to capture the “thin slices” of data in a given situation. It is similar to brainwriting, where participants silently write down their ideas. However, in thin-slicing, there are specific questions asked - in rounds - to capture the initial gut reactions of the participants. The following are the questions asked:

- Round 1: What’s my first impression?
- Round 2: What do we, as a group, need to know?
- Round 3: What’s right about this situation?
- Round 4: What’s wrong about this situation?
- Round 5: What’s our best course of action?
For further elaboration on this tool, see Francisco and Burnett (2008).

**Example of in Thin-Slicing in Action**

- “I wanted to complete thin slicing with my team because we don’t spend a lot of time sharing ideas. Once in awhile I’ll hear the teacher across the hallway and think to myself "what a great idea.” When asking them to help me with the iTool, I explained that with 4 intelligent minds, we would be able to come up with great solutions...I used the school's conference room in the morning. My sheets were ready, I explained what we were going to do etc... Our problem was working on h2 utilize a classroom teacher to help with time outs, cool downs and a break for a teacher when a student is having a difficult day. We all agreed that we need to help each other with stress because we rely on each other more when no other help is available. What the session sounded like: A lot of laughter. Thank goodness we all have a sense of humor! I did try and discourage a lot of talking, but also let the flow be casual and keep them focused on the sheets. I also REALLY stressed divergent thinking. They knew divergent thinking from a session I did with them before. The room wasn't quiet, but we aren't used to quiet- so this was okay. What did the session feel like: Comfortable. This was a safe environment for everyone. No one is judgmental on our team and we know each other's strengths. Also, we all agreed it felt good that we were at least trying to do something! The session worked on paper and the dynamics of the group meshed really well. I don't think anything didn't work. The sheets were used well and mainly filled. We didn't have a ton of time - always an issue. But we got some good ideas down and all that's needed is to implement” (Mary).

**Positives of Using Thin-Slicing**

- “The tool helped me to identify some of the elements associated with my challenge. It also helped me frame the challenge to make the complexity a bit more manageable” (Jolene).
• “It allowed me to purge my thoughts and it was very apparent where the process was leading me when I reflected back on what I wrote a couple hours later. I think it will be interesting to use in a group setting” (David).

• “What I liked about the tool is that it reminds us that everything is the sum of it's parts and that by looking at one portion at a time we can see different aspects of the whole which may help us in approaching challenges. Looking at the tools thus far as a body of ‘assistors,’ I would put them into three categories: -useful in bringing intention to the forefront; - useful in bringing attention to awareness and mindfulness; -useful in sorting data - powerful in opening and expanding consciousness” (Anna).

• “I did this tool tonight at a leadership meeting I had. It went really well. It brought team unity and allowed people to be honest about their feelings because it was written down instead of saying the ideas aloud. They liked the aspect of passing sheets around and the fact that everyone was occupied the whole time. Our experience was comfortable and relaxed. Since our group was small, we went around and everyone read off all the ideas on their sheets one category at a time. This was good so everyone could hear the ideas, and I did a debrief at the end of each category to capture general thoughts, but I wish I had created a better system for capturing overall insight. I would use this again, and in other settings” (Eliza).

• “It was so easy to just write and write under each question. After I had everything filled out, I read it all over and wrote a reflection paragraph as well. I got great insight from that reflection! It was great- the Thin Slicing Solo worked for me! I think the questions were geared toward this type of individual challenge as well as its original intent with a group challenge” (Lily).

• “This was a great tool to relate to massage and assessment. It was effortless to move from one question to the next. At the end it was natural to debrief and look at the responses. All in all just a more formal way of doing what we already do on a regular basis...It was very quiet. As a group we are used to being very quiet and it is amazing what comes up in the silence. The
discussion was full of "ohs" and "ahs" as people heard all the others responses” (Sue).

Opportunities for Using Thin-Slicing

- “Suggestions: -Use intuitive wording for questions such as, What does your gut say about the situation? What 1-3 words describe your vision for this situation? What feels right about this situation? What is blocking the flow of this situation? What are some symbols that represent the situation? -Change the wording for ‘What is wrong with this situation?’ to something with a positive connotation like: What is challenging about this situation? What are the resisters within the situation? What are the blocks to this situation? What are some obstacles regarding the situation? -Maybe having a separation of divergent and convergent thinking by using two different worksheets, one to get a thin-slice of the challenge prior to ideation, and one to get a thin-slice of implementing an idea” (Jolene).

- “It lends itself to being adapted and adopted for many different situations and application” (David).

Issues with Using Thin-Slicing

- “I felt a little confused with the questions and the intention of the tool. The wording of the questions is very direct and concrete. If the intention of the tool is to get at subconscious impressions and insights, perhaps the wording should be more intuitive. I feel that this tool has promise, but needs some refining.

- The last two questions, ‘What is the best course of action?’ and ‘What can I do right now, to address this situation?’ seem to overlap in meaning. These also get into the Prepare for Action component, which shifts the thinking from divergent to convergent. This shift is challenging” (Jolene).

How to create more succinct language?

- “I think I would like to tailor the questions a little to relate them more to the
situation but other than that I liked this tool” (Sue).

**How to tailor questions to each situation?**

- “I do not particularly like the added questions to each round of ideation. It just seemed like too many constraints for a tool that utilizes ideational thinking. I really struggled with getting anything out of it. I really wanted to like all the tools. I know that’s not a goal of this journey, to ‘like’ everything, but I felt badly that I didn’t enjoy it” (Mary).
- “I followed the directions with the group, and at one point I wanted to quit, I just couldn’t get my head around the purpose of the questions. Maybe I was over thinking it; maybe I was under thinking it. In any event, it wasn’t an enjoyable experience. I found myself writing options that were not very thought out… My biggest insight was that I will not like or enjoy every tool or experience during this journey, and that’s okay” (Blaise).

**How to remember that all people won’t like all tools?**

**New Thinking to Overcome Issues with Thin-Slicing**

**How to create more succinct language? And how to tailor questions to each situation?**

This tool is in the very early stages of development and needs further refinement. The general process for this tool- quickly capturing bits of information- may be useful, but needs to be explored more in depth and tested with various groups using tailored questions for each challenge. Additionally, it might be useful to refine this tool to be an individual rather than group tool.

**How to remember that all people won’t like all tools?**

The lack of connection and enjoyment in using this tool could have come from the
fact that it needs refinement. Furthermore, as stated in a previous tool issue, not every tool will suit all participants.

Applying Thin-Slicing to the Core Research Question: Are Intuitive Tools and Techniques Effective in CPS? If so, When are They Effective?

Round 1: What’s my first impression?

• My first impression is that intuitive tools and techniques can be effective if the tools are managed well by the facilitator.
• These types of tools should not be used with people who are not emotionally/psychologically strong.

Round 2: What do we need to know?

In order to manage these tools well, the following needs to happen:

• The facilitator needs to be intuitively skilled (see Figure 10), specifically skilled at mindfulness, ability to tolerate complexity, sensitivity to environment, sensitivity to process, and tolerance for ambiguity.
• The facilitator needs to be trained in using intuitive tools and techniques, and needs significant practice in low-risk environments.
• The facilitator needs to understand and implement a psychological climate that fosters intuition.
• The facilitator needs to check-in with participants frequently.

Round 3: What’s right about this situation?

Based on the responses from the creativity community, there appears to be a strong interest in incorporating intuitive tools in Creative Problem Solving. These
responses include:

- Invited presentations at international creativity conferences.
- High number of participants at sessions on this topic.
- Excitement and energy from participants to include intuitive tools in the CPS toolbox.

Round 4: What’s wrong about this situation?

- There needs to be time to use these tools and techniques, and participants often don’t feel as if they have time.
- Many facilitators are also pressed for time, and they don’t think that taking the time to use these techniques will offer sufficient return.

Round 5: What’s our best course of action?

- When working with new facilitators, have them start with simple techniques in CPS, and when ready, encourage them to start using these tools in ways they find useful and meaningful.
- Make time.

Personal Reflection of Using Thin-Slicing

This tool, in its original form, was designed to be used by a group. However, for the purposes of my research, I opted to use it alone. Despite this change, I found the structure surprisingly helpful. The combination of guided questions, coupled with the need to write whatever comes to mind, resulted in a useful list of thoughts and ideas.

While I think the wording could be improved, I found the existing prompts sufficiently powerful to produce useful results. Perhaps suggesting that the current
language is appropriate.

**Head, Heart And Gut**

**What is Head, Heart and Gut?**

Head, Heart and Gut is a convergent tool, similar to “hits” used in the Creative Problem Solving Process. After diverging on a topic of interest, the participant(s) have three different colored sticky-dots. The blue dot is “hit” or placed on to the idea that makes the most logical sense. The red dot is “hit” on the idea that excites participant the most. And the yellow dot is “hit” on the idea that makes the most sense intuitively (or something they think or feel is a good fit, but can’t explain why). Finally, there is a comparison and discussion about where the three dots have been placed (and they may all be on the same idea), and an exploration of the best course of action.

**Example of in Head, Heart and Gut in Action**

- “I used this tool on a situation with another person that I have interactions with. In this particular situation things were not going as well as I wanted them to and I needed to make a decision on whether to continue interactions with this person. I figured this tool would really help to organize my thoughts into a logical solution. After I generated my thoughts and did my hits, I looked over my ideas and realized that I let my heart rule my thoughts, when I need to let my gut and head make decisions for me. In regards to this person in my mind I knew that I didn't need to deal with them anymore. But my heart overruled that logical decision and I kept interacting with this person knowing that it wasn't good for my emotional state of mind. When I went back to my challenge I realized that I needed to go with my head this time and try to become stronger and leave the person alone. Its only been a day since I did the tool, but I have cut interaction with this person. I feel
really good, but at first I had a funny feeling in my stomach when I thought about the issue I was having with this person. It looked like a whole lot of mess with my thoughts, but it came together in the end” (Shawna).

**Positives of Using Head, Heart and Gut**

- “I've found asking them about their heart and gut to be a very freeing experience for them and that they instantly light up, become more engaged and often quickly come to a decision - and one that feels 'right.’ I think it's something that should be readily and easily incorporated to CPS, as a whole” (Russ).
- “I thought I was able to really let my imagination go more so with this tool. Loved it!” (Lily).
- “It felt good to acknowledge the different reasons for choosing the different hits. It's nice to validate the importance of seeing something for what it is. It also felt great to be able to go through the whole process and give yourself permission to use intuition at the end...This tool works for me and I can see using it alot in the future” (Sue).
- “I know it is a different itool than Facts, Feelings, and Hunches but it really gets at the same core idea. It wasn't really transformational for me to see my selections, but I truly feel like I am an individual who is continually taking cues from all these senses anyway” (David).
- “It felt great to use this tool. It gave me more permission to hit things that may not make sense now, but have some sparkle to them. I could feel my intuition guiding me as I worked...This is a tool that I will use often for myself and in facilitations I conduct. It allows for more than cognitive thinking, and creates the space needed before the Prepare for Action stage of the CPS process. I think this aids in slowing down the process, which is very important for incubation” (Jolene).
- “This tool worked for me because I am visual learner. I do not always go with my gut or with what energizes me and the tool showed me an alternative way to view a problem” (Mary).
Opportunities for Using Head, Heart and Gut

- “I liked the different colors and I may even use symbols to make them stand out even more” (Sue).
- “I like the potential it hold for people who are relying on this triangulated approach to evaluation to a lesser degree... I have not had the opportunity but I would like to conduct a whole CPS session using strictly intuitive tools (this would be contingent on the clients needs), I would like to experience bringing about transformational results for someone, in regard to evoking their intuition into the process” (David).
- “I also made many more hits than usual with this tool. I think it opens up more possibilities, which helps in utilizing more ideas to address a goal or problem” (Jolene).

Issues with Using Head, Heart and Gut

- “I realize that more attention to my semantics, along with practice, can make this tool more effective for me” (Eliza).
- “I noticed that the vocabulary of the post-it ideas had similarities in each mode of evaluation. For example the head hits had to do with designing, strategy, and tangible properties. The heart hits had vocabulary that had emotional content, they dealt with intrinsic motivation, imagination and fun. The gut hits had visualization, mission, and big picture vocabulary in them. This tool gave illumination in regard to the different areas of my goal. I also noticed that the concentration of How 2 statement starters was greatest in the Head mode” (Jolene).

How to refine the directions associated with this tool?

- “It felt a little disappointing. Not the tool, just my experience. The challenge was I “hit” the head, heart, and gut options, but it only hindered my choices. I saw the three labels, and I felt like it was irresponsible to go with my heart or gut, just because we have been taught that the logical choice is the best choice. I have just begun my education about intuition, so I imagine the
more I learn, the more I will break that paradigm, but this may be a challenge for some... I need to learn to trust my intuition, and not just go with the logical choice, because sometimes the intuitive choice is the most logical!” (Blaise).

How to feel comfortable using your intuition?

New Thinking to Overcome Issues with Head, Heart and Gut

How to refine the words and/or directions associated with this tool?

When I designed this tool, I thought it was a model of simplicity and clarity. However, my experiences with my students have shown otherwise! I have been surprised by the number of times in which students have struggled with the differences between the three categories. As a result of these difficulties I have changed the language I use to describe the process. Recently when I have facilitated this tool, I have said, “what does your head say? In other words, what makes the most rational sense? What does your heart say? In other words, what idea makes you feel energized? and What does your gut say? In other words, what feels right but you can’t explain it? Perhaps your three dots go on the same idea or perhaps they don’t.” I have found that using this wording makes the most sense to people.

How to feel comfortable using your intuition?

In my opinion, the more people acknowledge and become aware of their intuition, the more they are likely to trust and understand their intuition. This is a quick and easy tool to capture an intuitive response, while at the same time focusing on the cognitive and affective responses. Therefore, it helps people to select an option by using a holistic perspective.
Applying Head, Heart and Gut to the Core Research Question: Are Intuitive Tools and Techniques Effective in CPS? If so, When are They Effective?

Given Head, Heart and Gut is a convergent tool, I needed to begin this application by generating a list of ideas. Therefore, I used my research question and brainstormed the following divergent list related to “how to integrate intuitive tools and techniques most effectively in CPS?”:

- Set up a psychologically safe environment
- Set up a relaxed physical environment
- Make time to use the tools
- Make time to practice the tools
- Simplify instructions
  - Practice using the instructions
  - Allow for voice without judgment
  - Stress deferral of judgment
  - Have participants let go of expectations
  - Make sure people are warmed up
  - Be aware that facilitator may be taking people outside of their comfort zones
- Know when to use tools
- Know when not to use tools
- Don’t force a tool on participants
- Don’t force a tool into a CPS session
- Modify tools according to the group
- Make time for reflecting and journaling
• Have participants set intention

• **Trust the process**

• Take risks!

Once I completed the divergent list, I decided to converge on what I thought was the most *important* thing to know with regard to how to make intuitive tools and techniques effective in CPS.

Based on participants responses, I felt *simplifying instructions* was the most logical choice on how to make intuitive tools effective. If we simplify instructions and make them clear to participants, then I think the tools will be more effective. Therefore, this phrase received a blue coding. Given my experience in using these tools with the participants and knowing how they emotionally responded in person to the various tools, I felt *setting up a psychologically safe environment* was my selection for the “feelings” selection of red. Intuitively, *trust the process* seemed like the most appropriate selection, because while I can’t describe it, I believe trusting the process is what ultimately allows people to stay open, tolerate ambiguity and navigate complexity, the big three affective skills related to Creative Problem Solving (Puccio, Murdock and Mance, 2006). I gave this idea a yellow code to represent my selection based on my intuition.

**Personal reflection of using head, heart and gut**

• *Although establishing the context for this tool was somewhat artificial, its subsequent application ultimately brought clarity to the ideas around this question. I agree with one of the participants that it may limit the number of ideas selected, and that is a limitation, because I found tremendous value in a number of other ideas I generated. In order to make this particular tool more*
effective, I think having participants select a larger number of ideas as general “hits” (Miller, Vehar, Firestein, 2001), and then use head, heart and gut to select the final three (or less than that if the hits go on more than one idea) would produce a more favorable outcome.

**Mind Mapping**

**What is Mind Mapping?**

Mind Mapping is a method for generating and organizing ideas in a visual “map.” Various forms of Mind Maps have been around for centuries, but the development of modern Mind Mapping is generally attributed to Buzan (2006). To begin, the participant takes several colored markers and a large sheet of paper. The participant writes the key concept at the center of the paper, and then begins to branch ideas out, creating clusters, making free associations, and generating ideas. What emerges is a map of the multitude of ideas and concepts. For further elaboration on this tool, please see Bissett (2008).

**Example of Mind Mapping in Action**

- “What occurred? I knew before I even started that I would love this. When we did a practice run in class I couldn't wait to try it on my own. I went to my trunk of art supplies and found some colored pencils. They were from my days of architectural renderings and when I picked them up I felt an intense energy. I went back into the trunk and found some silly pencils that I got to use with my nieces and nephews and they had the energy I was looking for. I reread the directions for use and chose a topic that I wanted to get a little insight into and away I went. The topic is a "deep" one and this is why I wanted to use the silly pencils instead of the ones that felt so intense. I really wanted to see where this might lead. I put my topic in the center and jumped right in. The pencils were flying, the colors were popping and the words just
poured out. What did the itool look like in action? At first it looked a little slow and then I had a thought bubble that reminded me of the rules of divergence and then it looked like a whirlwind of color and pencils and ideas. There were words, pictures, symbols, scribbles, question marks and holes (from where I got a little to rough!). What did it feel like? Initially it was a little choppy but then it really began to flow and I felt like I wanted the whole world to be one giant piece of paper so that I could go on and on and on... What did it sound like? The sound of pencil on paper sounded like a sword fight that tiny little knights would have. What worked and didn’t work? I really liked taking the time to pick the right pencils. I think that next time I would use flip chart paper or maybe even just have an entire wall of chalkboard or whiteboard. Once I really let go and just went for it I got to places that I didn't even know were there. It felt like the difference between thinking about something and being a part of something. I give this two thumbs up!!” (Sue).

Positives of Using Mind Mapping

- “With this freedom in mind, I just went for it and had a lot of fun” (Eliza).
- “I really love this tool. I have used it multiple times during the past few weeks. I take notes using mind mapping when I read for classes. It is such an intuitive way for me to organize information. I find that I am able to remember more because I can make personal connections and associations when I am taking notes ... I felt great while doing the mind mapping. I love doing things that are spatial and deal with kinesthetic organization like, collages, photography, writing, etc. I love the focus I get and the feeling of the universe coming together for me. I often enter a state of Flow when I work like this. It was also great to step back from my mind map and have a sense of peace about my assignments. I love the process of mind mapping. I think in tangents and this tool allows me to make tangents in thought and then return to the central topic. It facilitates associations and interactions among concepts, and digging a bit deeper. The mind map gave me a way to
categorize, look at the whole picture as well as the individual assignments, and see connections” (Jolene).

- “Mind mapping...let me stand back and behold what I have created as to view my current reality as a snapshot of thoughts, feeling, behaviors, and aspirations. This truly gave me some clarity on what I'm dealing with, how I can do it better, and also (and most importantly) what I'm already doing well and having small successes with” (David).

- “I had to provide a little more guidance with the Mind Mapping than we did in class. There were strands that I wanted them to cover and let them know to use those. I put out the important information they needed to take away, and together we created the Mind Map. It sounded like students starting to grasp the material as they took turns sharing what they wanted to add to the Mind Map. I felt that it was successful and for the most part, the students did too. By the end of the class, they said they had a better understanding and wouldn’t mind using this technique again” (Lily).

- “I enjoyed looking at the notes because of the color and the way I had used different colors to represent different topics – this helped me visually organize the notes” (Mary).

- “I love the freedom in mind mapping...using pictures...not having to organize thoughts...posters and markers and crayons...a great ‘free wheeling tool’ that allows our thoughts to be free w/o any restraints, or preconceived notions of where we should be headed. I did it after a 15 min meditation and had a very powerful mindmapping session” (Anna).

**Opportunities for Using Mind Mapping**

- “I’ve been using mind mapping as a to-do list and it’s great. I'm able to get out all to-dos and tasks floating around my head, and it's MUCH more fun than a traditional to-do list - I'm actually inspired to get my to-do lists done!... I used it with my girlfriend, and it was interesting to see our differences play out. We set a challenge/question in the center, and I immediately started mapping very logical, rationale questions/thoughts,
while she took time and advantage to 'pretty up' her ideas. Most interestingly, was that her ideas were much more personal and brilliantly and enlightenly simple. Essentially, we balanced each other out, and found collaboration to be very helpful, because I never would have thought of the ideas she thought of” (Russ).

• “One of the other ways I used mind mapping is to organize my assignments for this semester. I am taking four classes, and I was getting overwhelmed by the assignments. I needed to put them in a better framework to gain some perspective on them. I mind mapped each course as a circle, with branches out to little boxes which are the assignments. I then made overlapping connections between assignments for research topics. I also made idea notes for where I want to take the assignment” (Jolene).

• “I think next time I would like to try mindmapping with material that allows for a little more freedom, creativity and reflection. But I’m certainly happy with the way it turned out though, even if it wasn’t the exact intended way of using the tool” (Lily).

• “Someone taking a picture would have seen exuberation, a thrilled look on my face as I completed a mindmap of Mary Sue and her gems on life (hers and others)” (Joanna).

• “It could be called "brain dancing" as it reminded me of the same approach as following your heart /instinct when you are moving; either by going into a deep meditation prior to movement or jamming with traditional cultural music (preferably live) which had a purpose of ritual or healing such as African, Egyptian, South American/ Haitian, Sufi in its' original intention” (Anna).

Issues with Using Mind Mapping

• “The only difficult part for me is spacing and messiness. I am looking for a mind mapping software program that is user friendly. I think that it will help with the mess and spacing issues” (Jolene).

How to organize your Mind Map?
• “For some reason, I didn't enjoy using this tool in class and found it very hard to practice outside of class. I can't seem to put a reason as to why I don't like this tool, but I guess there is something about the execution of this tool and the multiple stems of ideas that I don't like. I will try again to use this tool later in the week, but right now the results really aren't worth stating yet” (Shawna).

How to accept that some tools don’t work for everyone?

New Thinking to Overcome Issues in Mind Mapping

How to organize your mindmap?

Mind Mapping is not meant to be an organized list of ideas, but rather a non-linear way to visually represent your ideas. For those that need to organize their ideas in their Mind Maps, there are various online software programs available including NovaMind (http://www.novamind.com/), Mind Manager (http://www.mindjet.com/what-is-mindjet/overview), Inspiration (http://www.inspiration.com/Inspiration) and iMindMap (http://www.thinkbuzan.com/us/).

How to accept that some tools don’t work for everyone?

This appears to be a general theme in the tools. Some tools will work for some people some of the time. Given this tool is visual and non-linear, it may not work for linear thinkers. This is purely a hypothesis. Further exploration and research in this area is needed.

Applying Mind Mapping to the Core Research Question: Are Intuitive Tools and Techniques Effective in CPS? If so, When are They Effective?

I used the iMindMap software product to develop the Mind Map below (see
Figure 15). I selected this particular software because it was created by the originator of Mind Mapping- Tony Buzan.
Personal Reflection of Using Mind Mapping Tool

- I chose to complete this tool last because I felt it might be an effective way to interpret the participants’ results of the original research question, “are intuitive tools and techniques effective in CPS?” I reread the entire chapter, taking notes as I went. I then reviewed the notes and began to create the Mind Map. For me, this was an invigorating and thought provoking tool. It was invigorating because I freely brainstormed around the three main areas that emerged in using the tools, and I enjoyed creating the map. It was thought provoking because it asked me to make connections to the various aspects of intuitive tools and techniques, which caused me to think deeply about the participants’ responses and feelings in using intuitive tools.

Conclusion

After reviewing ten identified intuitive tools (Bissett, 2008), I do believe intuitive tools and techniques can be effective if they are managed properly. Referring back to the Mind Map on this topic (see Figure 15), and with further elaboration on each point, the following is a summary of how to make intuitive tools and techniques effective in Creative Problem Solving:

Set up the intuitive climate with:

- **Trust and Openness** may be developed through both a physical and a psychological manner. Physically, the facilitator may set up the room so that there is an open space, equal level chairs set in a circle and no barriers (such as tables) in front of the facilitator or the participants. Psychologically, trust and openness needs to begin with the client/facilitator relationship, and expands to the resource group. If there is not trust and openness among all members of a CPS session, then intuitive tools should not be used.

- **Idea Time** is essential for effective use of intuitive tools. There should be time
for the participants to create a vision and set intention, time to incubate on the challenge at hand, and time to reflect on the tool experienced.

- **A Relaxed and Inviting atmosphere** may easily be established by having light and bright music playing, toys around the room, and an environment that is not threatening.

**The facilitator needs to:**

- **Warm-up Participants** before engaging in intuitive tools. This may be an energizing type of warm-up or a centering activity such as deep breathing or imagery.

- **Make Instructions Simple and Clear.** Remove any language that is unclear. Modify the tool according to the amount of time allotted.

- **Be Aware of Participants’ Emotions.** If participants’ begin to get upset, pull them aside to check in. Provide an outlet to talk once the session is over.

- **Use Intuitive Tools Organically.** In other words, don’t “force” a tool on a participant or in a CPS session. Know the tools well, and be prepared to use them when needed.

- **Modify Tools According to Groups.** The tools do not need to be used as described (specifically within Bissett, 2008). The facilitator may pull out techniques from the tools as needed.

- **Set Aside Time for Tool and Debrief.** Aside from the “quick and dirty tools,” most of the intuitive tools and techniques need a significant amount of time to use within a CPS session. If they are rushed, they are unlikely to be as effective. Additionally, when the intuitive tool is complete, the experienced should be
debriefed with questions such as, “What occurred?” “How did that work for you?” “What insights did you gain from using this tool?”

- **Trust the Process.** If the tool is used organically, and the participants are equally engaged, then the tool will take you where you need to go.

**Participant guidelines to using intuitive tools:**

- **Trust the process and Let go of Expectations.** If the participants trust the facilitator, the CPS process, and let go of expectations, then there is a greater chance that the intuitive tools and techniques will be effective.

- **Be Open.** If the participant is closed-minded, then they will not be open to the intuitive insights that might occur while using intuitive tools.

- **Defer Judgment.** Put off judgment on intuitive insights. Let it have a voice, and…

- **Be Aware of Your Intuitive Voice and Emotions.** Encourage participants to listen to the thoughts and feelings that arise, despite the fact that they may not understand them. Provide a space to voice intuitive thoughts and feelings.
Chapter Seven: Transformation Through a Holistic Approach

Introduction

The final question in this research study is, “When Creative Problem Solving (CPS) is taught from a holistic perspective, is personal transformation likely to occur?”

In order to explore this question, I needed to understand – at a practical level - what transformation was, and how one would recognize it.

Clearly, transformation involves change, and potentially quite significant change. Personal Transformation is often associated in the literature with a significant shift in a person’s self-perception following some major life event. But not all personal transformation needs to emerge from crisis and trauma. There is a strand of the literature that focuses on transformation through education, and looks at it from the perspective of the educator, and how they might deliberately design events that create a beneficial shift in self-perception. For example, Cranton (1994) defined transformative learning as the “development of revised assumptions, premises, ways of interpreting experience, or perspectives on the world by means of critical self-reflection” (p. 4).

This idea of changing the basic way in which one looks at the world resonated strongly for me. Even though I hadn’t realized it before, classes in which the students really seemed to ‘get it,’ almost always involved discussions that explored the topic in totally new ways, to them. However, one aspect of Cranton’s definition didn’t fit my experience. She talked about the importance of “critical self-reflection”, but didn’t mention creative reflection. In essence, it seemed to me as though she was only describing one half of the dynamic balance (the separation of divergent and convergent
thinking). So, for the purposes of my research I defined transformation as the process through which learners: develop revised assumptions, premises, ways of interpreting experience, or perspectives on the world by means of creative & critical self-reflection.

Having developed a suitable definition of transformation, I needed to design a CPS course that was based on holistic approaches. In order to do that I decided to use the three components of holistic education described by Miller (1996) 1. Balance; 2. Inclusion; and 3. Connection (p. 3). Further elaboration on these components may be found in chapter two of this thesis, and the course contract and syllabus may be found in Appendix 4.

It is worth noting that although I saw all three elements as essential to the course design, I was particularly interested in the transformation of the personal self through various types of relationships. For example, in holistic education, Miller (1996) discussed the importance of making connections in: “the relationship between linear thinking and intuition, the relationship between mind and body, the relationships between various domains of knowledge, the relationship between the individual and community, the relationship between self and Self” (p. 8). My hope was that focusing on connections and relationships might have a significant impact on the likelihood of transformation occurring.

Eleven graduate students in creative studies opted to take this course, and agreed to be participants in this study. The data came from the participants’ responses in pre and post course interviews, final reflection papers, and post course follow-up meetings and emails.

My goals for exploring the data were three-fold. First, I wanted to discover if,
and when, a holistic approach to education and Creative Problem Solving would create a transformation in the way participants thought about themselves. Would it allow them to move beyond their own constructions and their limiting beliefs? This is what I am calling “Personal Transformation.” Second, would the approach impact the way the students construed and related with the external world (others and the environment), what I am referring to as “Interpersonal Transformation.” Finally, I wanted to discover whether or not using this balance consistently throughout the college classroom would change the way that participants approach problems. In other words, would a holistic approach enable and facilitate the students to reimagine their model of what creative problem solving comprised and was capable of? I am referring to this final element as “Creative Problem Solving Transformation.” In summary, the three areas I was interested in were:

- Personal Transformation
- Interpersonal Transformation
- Creative Problem Solving Transformation

In order to systematically examine the students’ responses, I developed a loose selection framework, based upon these three elements. The framework was designed to help me identify passages of text that might indicate some form of transformation. In applying the framework, I tried to remain open to the data, and adjust my selections in the light of what the data were revealing to me. The overall process was highly iterative, with passages being included, and then excluded as my understanding of the data gradually evolved.

Having selected the relevant passages, I then examined them more closely, looking for words and phrases that suggested a specific type of transformation. Finally, I
categorized those words and phrases by developing keywords that seemed to capture the essence of what they were saying.

The following section presents the participants responses using the structure I developed. Each participant is introduced, using a brief bio sketch. Their relevant passages are then presented under three headings: personal transformation, interpersonal transformation, and creative problem solving transformation. If no entries were identified for a particular heading, that heading was omitted. Each of these subsections includes the keyword categories that I applied. Finally, I have written a summary of the person’s text, identifying whether I believe that the course had a transformational effect upon them.

Mary

Mary is a 37-year-old elementary school teacher, who has a Bachelor’s degree in early childhood education. The reason Mary initially enrolled in the course was because she thought meditation could be of benefit to her and her young, at risk-students. When Mary began the course, she felt she was intuitive when dealing with personal challenges.

Personal Transformation

- “It’s all about listening and reading body language. I think that’s a huge thing for me out of the class is being able to do that. And for myself, you know, am I getting angry, emotional hijacking, am I having a moment like that? And being aware of that and trying to stem it before it turns into a huge blow up” (Mary-post).
- “I do have intuition and I believe we all have the power to tap into intuition. Listening to your body, mind and surroundings will open up the ability to use intuition. I have always had feelings at certain times that I wish I had paid attention to. Knowing now how to better use those feelings has enabled me
to be observant and avoid or get involved in situations” (Mary-reflection).

Attention to Others, Awareness of Self, Attention to Self, Connection to Intuition, Awareness of Environment, Attention to Intuition, Manage Self-Emotions

Interpersonal Transformation

• “To listen to somebody actually speaking and paying attention to what they’re saying, that’s been big for me” (Mary-reflection).

• “That I have continued to meditate still surprises me. However, why wouldn’t I want to have a session with myself to feel better about my world? That I meditate almost every night is a key learning of how much we all need to focus on ourselves for a little bit of every day. I feel more connected to people and my environment which leads to the use of intuition” (Mary-reflection).

• “Most people I work with are colleagues and, yeah, trying to be more positive because there’s a lot of negativity out there and I think that the class...hearing people better now and listening, you really see the undercurrent of negativity. I didn’t notice it before. I’m usually a very positive person, but since I’ve been listening more, it’s bothering me because I feel the undercurrent now and that’s changing because I’m trying to change that, you know, it’s not fun to work in a negative atmosphere. I think, now hearing that, I’m trying to work on just being a little bit more positive with them so they can get out of their negativity funk. So that’s probably been something that I’ve paid attention to more” (Mary-post).

• “I’m more in tune with people and I’m more in tune with my environment because I’m concentrated on it where before I was scatter brain and just not organized in the head. I think now that I’m more so I can concentrate on listening to what my intuition is telling me” (Mary-post).

• “…less stress. Kind of more trying to be relaxed in life and enjoying it...I’ve got to bring that up because when we (her students) go outside, we take
a deep breath of air because it’s just something that I want to share with them and you know in the mornings, and I can’t call it meditation in the school, but even if we’re just having a rough day, take a deep breath because I need it. So I’m trying to teach my kids that have a lot of anger to just calm, you know, settle down, take a deep breath and just kind of use a little meditation in class. So my learnings I hope are going back to my students and family members because I’m trying to share it with them because they can’t all experience this, but definitely my stress has gone down. I feel a little more relaxed” (Mary-post).

• “and this is honest...because of the class and because of being aware of my surroundings that I was able to read a situation that I would have been oblivious to before” (Mary-post).

Attention to Others, Connect to Others, Connect to Environment, Attention to Emotions of Others, In Tune with Others, In Tune with Environment, Attention to Intuition, Awareness of Environment

Creative Problem Solving Transformation

• “The class has been beneficial to me personally and professionally. I feel I am better with family and friends because I pay attention more. At work, I am able to focus more on tasks because my mind is not going in all directions. I wish more people could empower themselves to learn about ways to help with stress in their lives and how to deal with each other. Now that I have some of the tools, I will try my best to share them and help the people around me” (Mary-reflection).

Attention to Others, Self-Empowerment

Synthesis

Mary described quite significant changes in at least two components of the model:
personal, and interpersonal. Becoming more aware of both her emotional state, and that of her colleagues is clearly a significant step for her. She also described being more closely in tune with her colleagues and her environment.

The area in which Mary seems to have experienced a lower level of change is in Creative Problem Solving. Her description is somehow more functional and task oriented, suggesting that she is paying greater attention to the use of the tools, but has not really embraced intuition as a core part of the CPS process.

**Jolene**

Jolene is a 29-year-old full-time graduate student whose primary responsibility is taking care of her two-year-old son. As an undergraduate, she studied anthropology, English, psychology and creative studies. Entering the course, Jolene felt she was an intuitive person, and believed her intuition assisted with making decisions. She enrolled in the course to potentially gain a deeper understanding of CPS and to fill in some of the gaps she felt in the CPS process.

**Personal Transformation**

- “My intuition has become a compass that I always wear around my neck. I have learned to hear its voice and trust its guidance with grace and ease. I feel balanced and in control of my life. I feel like a stronger woman, mother, and student. I take with me a deeper sense and access to myself, a cornucopia of tools and techniques to practice, and radiating joy and passion for my life” (Jolene-reflection paper).

**Attention to Intuition, Trust Intuition, Balance, Awareness of Self, Connection to Self**
Interpersonal Transformation

• “I look at the world deliberately in a different way like when I’m practicing mindfulness and my awareness has increased” (Jolene-post).

• “Throughout this semester, I have been experiencing an amazing synthesis within my life. Prior to this synthesis, I had felt that my life was a series of beautiful tangents that did not seem to coalesce. Now I feel as if my purpose and vision is taking shape. I believe that this is due in a variety of reasons including, the people that have come into my life, the course assignments that have provoked me, my growing knowledge of creativity, and most importantly the deep and intuitive experiences that have occurred for me as a student in this wonderful course. This synthesis is bringing together all of the joys and strengths of my soul: my deep love and joy of motherhood, my love of creativity, my imagination, my strong sense of family, my intuitive feeling that I will be a great creative leader, my love of laughter and play, and my desire to contribute to peoples’ lives in a meaningful way. I now have a career vision that brings all of these elements together and inspires, energizes, and sets me in motion. I believe that this is a direct result of deeply incorporating my intuition into my life... I have experienced a paradigm shift in my consciousness. I say in my consciousness because I intuitively was aware of this philosophy. This paradigm shift has changed the way I view my reality, mother my son, interact with people, learn, research, love myself, and the choices I make in viewing the world” (Jolene-final reflection paper).

Paradigm Shift, Awareness of Purpose, Paradigm Shift, Connect with Self, Connect to Others, Connect to Environment

Creative Problem Solving Transformation

• “It has made me fall in love with facilitation and I never, from undergrad, never thought that I would want to be a facilitator. It just wasn’t...I liked the tools, it was fun to apply to my own life and, on occasion, to help other people, but I can see myself being a facilitator now” (Jolene-post interview).
• “In creative problem solving, I use mindfulness to aid in data gathering, making novel associations, being aware of intuitive clues being expressed by clients in a facilitation, and being aware of the implicit clues that I am giving myself...I had entered this course with an ambivalent relationship with CPS. I have always felt that something was missing from the process. It seemed to be ridged, rushed, and remote. This course has transformed that relationship into one of excitement, interest, and wonder. The balance of the cognitive and intuitive was the piece that was missing for me, and this course explicitly creates that foundational element and provides tools and techniques to deliberately create that balance. Holistic is viewed as a balance between the cognitive, affective and intuitive, and this course has helped me find and practice the holistic nature of creative problem solving” (Jolene-final reflection paper).

Connection to CPS, Awareness of Intuition, Holistic Connection

Synthesis

Jolene’s responses offer pretty compelling evidence for a significant transformation. It is clear that she has found a deeper connection to herself and her intuition, which has lead her to a significant shift in her perspective, ultimately bringing her a greater vision and purpose to life. It is also interesting to note that her perception of her potential role within CPS has changed quite dramatically.

David

David is a 30-year-old full-time graduate student with a Bachelor’s degree in Psychology. At the pre-course interview, David felt he was an intuitive person because he felted connected to what other people were thinking. He selected this course because his whole family was involved in martial arts and has been doing meditation and
relaxation and was interested to see how those affect what we are thinking.

**Personal Transformation**

- “The biggest lesson life has shown me so far is not to ignore the voice in my head (intuition)” (David-6 month).
- “it’s more paying attention to the subconscious stuff (if that’s possible). Trying to tune in a little more with the meditation and paying attention to the fact that I need more down time than other people might and just saying ok” (David-post).

**Attention to Intuition, Connection to Self, Attention to Self**

**Interpersonal Transformation**

- “This gives me perspective and centers me strangely by reminding me that I am not the center of the universe but just another creature trying to get the most out of the world I am living in. In a seemingly contradictory way, being centered in the above manner gives me the energy to surround myself with the artifacts and individuals I love and to forgive those I do not” (David-6 month).

**Connection to Others, Connection to Environment**

**Creative Problem Solving Transformation**

- “My more in depth and personal definition of intuition reads: Discover who and what you truly are and make it work for you every day. This means taking the good with the bad, the happy with the sad, the things you can control with the things you cannot and embracing them all equally. The act of embracing these factors which are inherent to all of our lives is not a passive process and it is directly coupled with problem solving. Just when we think we understand ourselves a new challenge will arise. Meeting these challenges calls for us to summon all our inner (and outer) resources”
“Before the semester began I had lost a little steam in my excitement about creativity and this course was able to breathe new life into my enthusiasm for creativity and CPS” (David-reflection).

“I believe that embracing intuition, self-discovery, and individual differences is the gateway to excellence in problem solving whether personal or professional. After all, if you encourage someone to take action you cannot be disappointed with the results especially if it makes them happy. The class was a great note to end the program on for me because it really solidified many of the loose concepts that were occupying my headspace and turned them into a unified vision (which is still taking shape)” (David-reflection).

“If we passively let challenges go by or continually choose the path of least resistance than we will not grow and become self-actualized people who feel in charge of their own destiny. Life will not be satisfying. To make discoveries we must frame challenges and attempt to implement our solutions. Intuition is a use it or lose it spiritual tool. It is an intangible part of who we are and what makes us unique from one another in our thoughts and beliefs. The more we draw on our inner resources, the more we begin to exercise our intuition to meet challenge” (David-6 month).

Connection to Self, Embrace Challenges, Connection to CPS, Acceptance of Others, In Tune with Self

Synthesis

David demonstrated all three components of transformation to some degree.

First, he shifted to a greater level of paying attention to himself and his intuition.

Second, he recognized himself in connection with the rest of the world. And finally, he realized the importance of self-acceptance, acceptance of others, and risk taking in tackling challenges.
Anna

Anna is a teaching artist and the Director of a not-for-profit organization. She preferred not to disclose her age, but stated she was over 40 years old. She has a Bachelor’s degree in Human Services. Anna decided to take this course because she thought that anything we do could be considered holistic. She stated, “whether you’re scrubbing floors or whatever your job is I think that you do need to approach it, not to use a cliché, but body, mind, and spirit” (Anna-pre). Anna has been practicing meditation, yoga and dance since she was 16 and considered herself intuitive in the pre course interview.

Creative Problem Solving Transformation

- “I was reminded to get over my own barriers in order to increase my intuition which I thought was very interesting because I didn’t realize it was happening until…I think it was from all the mindfulness and reflections. So, even though as I teach, as I talk about what I’m feeling about and that is to be open to things. I found that I have some resistance that I’m giving myself a break saying ok, it’s ok to work over it. So, two things would be getting over some personal blocks and barriers. The second thing would be to practice tools that will lead to deeper intuition because I can sit here all day and talk about it, but I need to make sure I always give myself the time to do it” (Anna-post).

Overcoming Blocks

Synthesis

While Anna described a shift in overcoming personal blocks and barriers, she did not describe any other type of transformation in her post-course interview or reflection paper. I believe this is because Anna considered herself highly intuitive and self-aware
from the start. In fact, of the eleven participants, I felt Anna was the most in tune with herself and in tune with others. She summed it up in her definition of intuition at the pre-course interview: “I think it’s (intuition) an awareness. I think if you’re aware of your own energy and self, then you can be aware and I think that’s what intuition is, is awareness. I think that anybody can be intuitive and anybody can expand their intuition as well I do consider myself an intuitive person and I think that the older I get, the opportunity exists to increase that.” I think it is reasonable to assume that for Anna, an introductory course on intuition was unlikely to have a transformational effect, purely because of her existing knowledge, skills and attitudes. This does raise the interesting question of whether the class might have been designed in such a way that students like Anna could have pursued goals that were transformational for them, while still fully engaging in the class.

**Joanna**

Joanna is a 39-year-old financial aide advisor with a Bachelor’s degree in Business Administration. At the pre course interview, Joanna did not consider herself intuitive, but she took the course because she thought it sounded interesting.

**Personal Transformation**

- “Well, I think I’m much more aware of intuition, my intuition, when I’m right or when I’m wrong, you know when I have a feeling (or what I think is a feeling) and it’s maybe just more of what I want to happen...I’m more able to determine what is truly intuition and what is really what I want to happen. I can see the difference rather than being oh, yeah, I’m being intuitive. You know, this is what I want to happen and if it happens I can say it was intuition. I don’t want to twist it or turn it that way. So I’m much more able
to determine the difference now, I think after watching it and experiencing it so often and realizing it’s everywhere. I realize it so much more readily since the class’” (Joanna-post).

• “Learning how to meditate was most beneficial for me and has centered me when previously I would have exploded in anger. Meditation brings me away from the stress and calls me down from the ledge when life gets overwhelming. It has helped me realize that my emotions don’t have to control me; I can control them” (Joanna-reflection).

Awareness of Intuition, Attention to Intuition, Manage Self Emotions

Interpersonal Transformation

• “Before enrolling in this class, I did not know how to recognize intuition and did not consider myself intuitive. During this class, I recognized several links between creativity, intuition and religion and was able to identify intuitive occurrences. After completing this class, I can say that I see intuition everywhere” (Joanna-reflection).

Awareness of Intuition

Synthesis

While a holistic approach didn’t appear to make a significant shift in the way that Joanna had used CPS, she certainly described a shift in her awareness and attention to intuition, along with the ability to manage her own emotions more effectively. This change in emotional regulation appears to be quite significant. Although not directly related to core topic of the course, it does seem to be an unanticipated transformation.

Russ

Russ is a 24-year-old full-time graduate student with a Bachelor’s degree in Communications. He decided to take the course because he had an interest in holistic-
type programs such as tai chi. He did not feel intuitive with regard to his own actions and thoughts, but did feel intuitive when it came to understanding other people. He felt he could get a good sense of how they were feeling, acting, and being.

**Personal Transformation**

- “It doesn’t seem like it too much because a lot of me what you see is what you get, but I have this big struggle inside, mentally, in...if you asked most people who’ve met me, they’d probably say I was an extrovert because I am very gregarious and sociable and I am and I like to joke, I like to be funny, but I am an introvert at heart in the sense that I do withdraw. I don’t really let people close to me that or let like the real inner workings upstairs because I am afraid of what they’ll think and I kind of let a lot of that go. And that’s good because I opened one of the quotes that we got from class and someone’s quote was “everybody’s entitled to be a little bit crazy in their own way” and I was like hey I like that because people would joke with me like hey Russ you know it’s a good thing you’ve got good social skills because you’re walking a thin line between crazy and I was like hey whatever. Now I think of it like yeah, it’s a good thing to be a little bit crazy because if you’re not, then you’re just normal and I don’t like normal. Normal is not fun. Normal is, you know, Logan’s Run and things like that and I don’t want that (though it was a good movie)” (Russ-post).

- “I now know how much I needed the class. The cold, hard truth is that I’ve been lost for many years now. Sure, I put on a good front and people look at me and think I’ve got it all figured out, but I most certainly do not. I don’t have demons, but I do have uncertainties – what drives me, what motivates me, what am I doing, where am I going, what am I passionate about, and what is my career path? These questions have haunted me and as I look back, I’ve often denied myself my true desires, either due to fears or due to a jaded sense of selflessness, altruism, and self-righteousness” (Russ-reflection).

- “I’m uncomfortable exposing weakness and admitting I don’t have it all
figured out, but because of this class, particularly the tools, reflections, and open atmosphere (including the salon), I feel more comfortable and confident in saying I don’t know and I’m not perfect. In fact, my imperfections are something I’m growing to embrace – they are uniquely mine and at the very least, give me challenges to overcome” (Russ-reflection).

• “the strides I’ve made through this course have made me a better person, made me a calmer person, a more relaxed person, a more comfortable person. And that’s good because it’s been a lot of mental back and forth and I don’t like that. I don’t like the chaos upstairs and now I think things are clear. I feel more confident in what I’m going to do afterwards” (Russ-post).

• “that it’s ok to be who I am. That I don’t have to play these head games that I play. I don’t…I guess to go back to it all, to be authentic and to be more in the moment because I think a lot of people back-look things. You know, put a little work here for the payoff later and the ends and means and means and ends, but just to be a little bit more grateful for today and just take each day as it comes. I am a planner long term. I like to think about my future and I still do, but I’ve tempered it and that’s good because I feel comfortable. And it’s not very often where I’m sitting in my chair thinking about something else or fretting or dwelling and it’s been, I don’t know, like a weights been lifted and it feels good. I would carry the weight of my world and other’s worlds on my shoulders whether or not thinking that I was something that I wasn’t. Now I’m just me and I like that and I’d rather surprise people than live up to expectations” (Russ-post).

Self-Acceptance, Authenticity, Connection to Self, Appreciation

Interpersonal Transformation

• “Personally, it’s helped me a lot too because I mean just individually, myself, it’s helped with my relationships with my girlfriend and my parents and I’m really close with them, but I’m also more open with them. It’s a much more gratifying relationship and that’s good” (Russ-post).
Open to Others

Creative Problem Solving Transformation

• “And I think I talked about it in the first interview, I didn’t trust my intuition. I recognized it and it would almost be oh, I know it, but I would go away from it in favor of the logic and I don’t do that anymore. Everything has to be grounded in a framework and, for me, I’m big into frames, give me a framework. And I found that once I ground it and get the framework, the intuitive side almost takes over because I do my best work when I’m following my gut because my gut is right. My gut is telling me something. There is something I need to pick up and work on and develop instead of the logical choice. The logical choice gets you in ruts and that’s why you build ruts because it’s the same way over and over and I don’t want to be patterned, I don’t want to be methodical because that’s not the way the world works” (Russ-post).

• “However, thanks to the insight and introspection gained from the tools learned and used in class, I feel much more confident in my future. That's a pretty bold statement, but I realized I never really took the time to discover or grow myself. The beauty of these intuitive tools is how individual they are and how they all help you grow in one way or another – whether it's in making decisions, getting over a block, or simply getting to know yourself better. It's often said, to the point of cliché, that you can't help or know anyone else until you help or know yourself. Well, it's true and it's highly applicable to creativity and creative problem solving. See, I pride myself on being very empathetic, and while I am, it's through intuitive tools, honing my intuition, and this class as a whole that I'm quite confident in saying I'll be able to help people, both personally and professionally, a whole lot more. Whether it's actively listening to clients or loved ones, or utilizing the tools to overcome challenges, I feel like I've grown into a better version of myself” (Russ-reflection).

Trust Intuition, Awareness of Self, Attention to Others, In Tune with Self
Synthesis

Of all the participants in this study, it appears that Russ has had the most significant transformation. At the foundation of this transformation is self-acceptance and authenticity, which is, in my opinion, the most powerful gift one can find. Now that he has learned to trust himself, and his intuition, I believe Russ will make great strides in connecting with others in a much more profound way.

Sue

Sue is a 44-year-old Massage therapist and educator with a Bachelor’s degree in Architecture and a minor in Massage Therapy. From the start of the course, she believed she was intuitive and felt she could trust her intuition. She took the course because the content was related to her Master’s project.

Personal Transformation

- “I think one of the most powerful things that we did in class was to embrace mindfulness and meditation. Over the semester you could see mindfulness and meditation open the mind, body and spirit in a way that invited awareness and knowing. The process of simply making the time to be mindful is one that can easily fall by the wayside, especially in such a fast paced society. I know that I learned a big lesson about the importance of balance this semester, and it was wonderful to see people change as they experimented and found a practice that worked best for them. It seemed as though when people stopped and took the time to get better acquainted with themselves, they learned all sorts of things. I think this class brought everyone closer to who they are, and closer in their view of what intuition is, and the role that it plays in our lives” (Sue-reflection).

Balance, Connection to Self, Attention of Intuition Authenticity
Interpersonal Transformation

- “The most significant thing that I learned from the class was that mindfulness, intuition, and being in touch with your self as well as what’s around you is not optional. It’s an integral part of getting it and being” (Sue-post).

Connection to Self, Connection to Others, Connection to Environment

Creative Problem Solving Transformation

- “I feel that being fully present no matter what I am doing makes each action more real, meaningful and connected to who I am. My foundation of the mind, body and spirit combined with mindfulness, positivity and an overflowing toolbox have forever changed the way that I will approach challenges” (Sue- 6 month).
- “The concept of accessing intuition on an active level has been life changing for me. I know this sounds dramatic but I am a person who relies a great deal on my intuition. Through studying creativity, I better understand incubation, and how I can use it to set the stage for intuition. Until this class, if an intuition wasn’t forthcoming, all I could do was wait. How frustrating is that? Those days of waiting are over, I now have tools for active intuition. These tools make it possible for me to facilitate the intuitive process on a personal and professional level. By integrating these tools into the standard facilitation toolbox, intuition becomes one more thing that can be used in the process of solution finding. Not magical, not mystical, just one more way to engage the client in their quest to address their challenge” (Sue-reflection).
- “The Holistic Approaches to CPS class validated for me that this approach might work in any situation and now I have the tools to use to make this a reality. It seemed effortless to cross the bridge from theory to practice. At any moment, when I felt stuck, I had an arsenal of tools to apply. It was almost fun running into challenges” (Sue- 6 month follow up).
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• “I think I now have more strength and conviction in my ability to be able to pass this on to my students and my clients where as before I felt like as soon as I started talking people saw birds flying around my head, you know, with sparkles and things like that. Now I feel as though I can speak and people can relate better because I know how better to present and use the tools” (Sue-post).

Paradigm Shift, Embracing Challenges, Connection to Self, Holistic Connection

Synthesis

In reading Sue’s responses, it became clear that she had experienced a significant shift in the way she thought about and employed Creative Problem Solving. She had
gained a much wider perspective on the ways in which it could be used. Additionally, she recognized that mindfulness could play a major role in helping her to connect, both personally, and with the wider environment.

**Blaise**

Blaise is a 33-year-old Director of Education at AIDS services with a Bachelor’s degree in Communications. At the start of the course, she felt she was a very intuitive person and made most of her decisions based on her intuition. She decided to enroll in this course, because she heard a presentation I gave on the topic of holistic approaches to CPS.

**Personal Transformation**

- “Mindfulness—This by far was the most important concept I learned this semester, and one of the top three of the entire program. Mindfulness has opened up the world for me. I know that may sound a bit exaggerated, but consider the fact that I am a task master. This has been my place in life for a very long time. I have kept everyone around me on task, and I have lived at the minimum two hours ahead of present time. I have always thought that this “ability” was definitely a gift, and I certainly believed that I was “profiting” from this gift. Not so. Mindfulness has taught me that not only has this task manager ability caused me great stress; it has diminished my joy of the moment. When I think about all the small things in life that have made me smile, I realize now that the smile never went deeper because I could not fully engage the emotion. I was too busy looking for the next chore to accomplish, making sure I was on a fictional time table I had fabricated all to experience a sense of achievement” (Blaise-reflection).

**Appreciation of Life, Connection to Self**
Interpersonal Transformation

- “The simple act of paying attention has enabled me to be a more positive person. It has allowed me to look for the good in every situation. Four months ago, I would have deemed this as “corny,” but a wiser Blaise understands that it is the key to success” (Blaise-reflection).

- “A very good friend of mine just gave me the most beautiful compliment. She said, “Do you know what I love about you, and why you will be my friend for life? It’s because you have such a broad view of everything. Most people only look at their small piece of the world, and they are miserable. You see the whole pie and your actions show it.” I almost cried when she said that. Mindfulness has helped me understand that the joy of life is not staying in your little piece. It is extracting the best out of yours and sharing it with others. By doing so, you open yourself to receiving that same joy from your neighbor’s small piece. This is how you get to taste the entire pie” (Blaise-reflection).

Attention to Others, Attention to Environment, Connection to Others, Open to Others

Creative Problem Solving Transformation

- “One of the things that I think became part of my being, you know, when you’re discovering problem solving whether it be creative problem solving or just thinking about things and learning to trust my instincts. I think it’s easy to second guess yourself and knowing that the decision I make today will eventually work out for my good. Intuition has...understanding deliberate intuition has helped me even. I have stronger faith in that” (Blaise-post).

- “This course was no accident. It was not simply a part of Cyndi’s doctorate studies, or a great idea for the program. I believe this class was ordained. It contained the right people, the right dynamic, and IT happened at the right time. I know that none of us will ever be the same after experiencing this. Well, I hope not. I have so much to be thankful for. This course has not
helped me realize it, because I knew it before, but it has given me tools to engage and enjoy those things. Life potentials may now be actualized due to me understanding the power of my intuition. THAT IS AMAZING” (Blaise-reflection).

- “You know, that there’s legitimacy to it and I think that people are just looking for the affirmation so they can say things when the facilitator or the person in charge (supposedly in their minds) we know that we’re just helping the process along, but when you're in a group setting and they’re used to the person up front talking, being the expert, when you set a standard that says everything has a place here, that really opens up possibilities that you never imagined” (Blaise-post).

Trust Intuition, Appreciation of Life, Attention to Others, Attention to Environment, Life-Changing, Open to Possibilities

Synthesis

Blaise’s reflections suggest a deepening, or accelerated, transformation. In other words, the course, and the use of the tools appear to have helped her move along a path that she was already exploring. Her comment about the course not happening by accident reinforces the idea that she was ‘ready’ for the experience. It is also interesting to note that the intuitive tools have strengthened her belief in her natural intuitive ability.

Eliza

Eliza is a 24-year-old full-time graduate student with a Bachelor’s degree in Early Childhood Education. She considered herself intuitive at the pre-course interview, but took the course because she had me as an instructor, and enjoyed my teaching style.

Creative Problem Solving Transformation
• “I think as far as a general overview, seeing how the class went and the relationships between class members and the personal aspects that were brought up, but also the problems that were solved due to that really testifies to the importance to paying attention to the personal aspects of creative problem solving and realizing that that can be done even in a scholastic setting or a business setting or whatever it might be. Yeah, just knowing how effective that was and how useful that was above many other things that had happened in just the cognitive realm” (Eliza-post).

• “As far as sessions go, knowing that everyone is a holistic person that has all the aspects of both intuition and the cognitive knowledge and the personal knowledge and view each person in that way, both the client and the group, and to be purposeful after feeling out the group and understanding where they are in the source...in the type of the problem; bringing in more intention and intuitive tools possibly or just making room for the validation or the use of intuition in the decision making and problem solving process that is already taking place” (Eliza-post).

Attention to Others, Holistic Connection

Synthesis

Although Eliza enjoyed the course, there was really no evidence of any transformation.

Shawna

Shawna is 23-year-old full-time graduate student with a Bachelor’s degree in Public Relations and Journalism. When asked if she considered an intuitive person at the pre-course interview, she said “not at all.” However, she was interested in enrolling in the course to see how the holistic approach could benefit CPS.

Personal Transformation
Another key take away was my ability to see creativity in a different perspective. Before, I thought that creativity was something that I would never have, no matter how hard someone tried to teach it to me. With this class, I had an “aha” moment that told me that I have always been creative and intuitive because it comes from within. With time and patience I am confident that I can fully foster these tools and become a better person, personally, creatively and intuitively” (Shawna-reflection).

Paradigm Shift, Connection to Creativity, Connection to Self

Interpersonal Transformation

• “I also learned how to be more aware of the people around me. I learned to pay more attention to others through active listening and conscious awareness of what was going on around me” (Shawna-post).
• “I don’t think I could pinpoint one thing, but I would say just being more conscious of the things around me and being more conscious of the people around me and what they’re feeling, what their insights are; in some ways that might help me dig deeper into my insights…Like I said, trying to be more aware of other peoples feelings; before I wasn’t conscious of that and how my feelings would affect them. So, now asking them are you ok, what are you feeling, what are you thinking about what I’m saying or if something’s happened that I’ve done, how are you feeling about that? So, I’ve done that a lot more, trying to listen a lot more” (Shawna-post).

Awareness of Others, Attention to Others, Awareness of Environment, Attention to Emotions of Others

Creative Problem Solving Transformation

• “While it almost took me the entire program to figure it out, I realized that I was not a very mindful person and that I was having trouble tapping into my intuition and creative abilities. Before this class, I was not mindful about
myself or the environment around me. One of the biggest key learning’s that I got out of this class was that I was blocking my thought process from allowing creativity to come in. From the beginning, I had coined myself as an adaptor who didn’t have a creative bone in my body. It was at that point that I shut myself down from new learning and creating. This class really helped me to come out of my shell and appreciate the talents and skills that I have. Not until this class, did I realize how mindless I had been in my personal and academic life. Because I wasn’t mindful, it was very hard for me to recognize my intuition and the creative thoughts that I was having” (Shawna-post).

A New Perspective, Overcoming Blocks, Awareness of Self, Appreciation, Awareness of Intuition

Synthesis

As a result of being more mindful, Shawna discovered her own creativity and intuition. I think this represents a significant transformation at both the personal and CPS level. In addition, she discussed being more aware and giving attention to other people’s emotions, suggesting a greater attention to that area.

Lily

Lily is a 29-year-old Elementary School Teacher with a Bachelor’s degree in Spanish Education. At the pre course interview, Lily thought she was “probably not” intuitive, but was taking the course because she thought it would help in her personal and professional life.

Personal Transformation

• “I think this allows me to be more aware, something I really wasn’t before. I
wasn’t mindful; I wasn’t aware of my intuition. Now, I can say that I am” (Lily-reflection).

• “Because I feel like I have intuition, I can trust it now. Before I didn’t consider myself an intuitive person, but after everything that we did in class I know that I am an intuitive person. I just never really realized it so I never relied upon it. So, I think just knowing that it’s there, knowing you can trust it helps you problem solve in general” (Lily-post).

• “I have changed as a person throughout this class. My husband has even told me so. There are times when he thought I’d fly off the handle over something, but he was quite impressed with my manner in dealing with those things” (Lily-reflection).

• “Am I more creative after taking this class? I would have to say yes, but I don’t know if that’s more of a personal feeling or fact. Perhaps, the next time this class is offered, you can give a creativity assessment (TTCT?) before the course and then again at the end. I think because of the deeper level of thinking that occurs now after taking this course, that yes, I am more creative. It has sparked an imagination and creativity, which I assume is from tapping into that intuition” (Lily-reflection).

Awareness of Self, Awareness of Intuition, Trust Intuition, Manage Self-Emotions, Connection to Creativity

Creative Problem Solving Transformation

• “Overall there are so many benefits to this class. The meditation and iTools have improved my health/mental health, problem solving abilities, deeper thinking and ability to deal with challenges. I will end with this- I came into class with an eye twitch that I related back to stress. About a month and half into the course (a few weeks into the meditation assignment) I noticed one day that it was gone. I attribute this to the course, its content, and meditation” (Lily-reflection).
Awareness of Intuition

Synthesis

While Lily did not describe any interpersonal change, she did have a shift in recognizing and finding potential in both her intuition and creativity. Additionally, she has found the course to have mental health benefits and a greater ability to manage her stress and emotions.

Conclusion

The personal, interpersonal and problem solving transformations that occurred during the holistic CPS course, have ranged from non-existent to significant. However, the majority of participants appeared to experience a noticeable change in at least one of the three components, with many of them reporting changes across two or even all three of them.

After reflecting on the key terms and letting the data “speak to me,” I found that I could organize the terms into four broad categories that seemed to capture the essence of what the participants were describing. For simplicity I named these categories: Awareness, Attention, Connection and In Tune. It is important to note that the actual content of the participants’ descriptions varied greatly. In other words, they weren’t necessarily describing an increased awareness of their intuition, but rather the fact that they had experienced an increased awareness of something that they deemed to be important (i.e.- self, others, environment, emotions). The categories are therefore context neutral, but still attempt to capture the essence of the change that the participants were experiencing.

To me, these categories suggest the possibility of a transformational journey in
which participants, as self-motivated learners, move through the four stages, and thereby develop a broader definition of themselves. It is by no means certain that each student would move through all four stages, but the potential is there. In practical terms I would expect to see people move from being unaware, to aware, then to paying deliberate attention, next to connecting to the topic in a new way and finally, entering a new world in which they embody the topic and make it their own.

Clearly, the transformative journey for each person is unique and I don’t want to present these categories as some sort of linear process. In my mind, the journey is more of a spiral with participants moving along the spiral, and jumping across levels as insights reveal themselves to them. *Figure 16* presents the Model of Transformation.
Figure 16. Model of Transformation

After further reflection of this model, I found it resembled a model for the development of creative change leaders developed by Puccio, Murdock and Mance (2006) which was built upon Gordon’s (1976) adult learning competency model:
Figure 17. A Model for the Development of Creative Change Leaders

In many ways this model (and many other similar ones) tell the same story. The learner moves through a series of stages, gradually becoming both more skillful and increasingly self-aware. When I was reflecting on the differences and similarities it suddenly dawned on me that the key point in the models is that even though the ‘maps’ may be almost identical the motivation of the travelers can be widely different. My spiral model emerged from the descriptions of people who were construing themselves in new ways. It wasn’t trying to create a normative guidebook for achieving growth, but rather capturing the cognitive, intuitive and affective stories of people who had been through change. The map will only make sense to people, when they also read the stories of people who have travelled the road before them. In that sense the spiral diagram is not a
route map to transformation, but rather a table of contents for the stories that people will read, reinterpret and use as their motivational touch stones to help them achieve their own insights. Essentially, the stories will help connect people at the affective and intuitive level.

This spiral of transformation, and the stories underlying it, has given me new insights into how I might structure my future teaching, both around intuition and the broader creativity curriculum. I hope to develop this model and elaborate it with more stories, and practical advice that could help my colleagues and I increase our chance of turning any teaching event into a potentially transformative experience.
Chapter Eight: Conclusion

Returning To Myself

Reaching the conclusion of this thesis gives me the opportunity to return to where I started - with myself. When I began this study, I had no idea how strongly this research project would influence me, and as a result, the way in which I live my life. Couching this in terms of my own transformative model, I went from operating at a level of awareness of my intuition to a level in which I felt far more connected - and at times - in tune with my intuitive processes. This has had a dramatic effect on the way I solve problems, and relate with other people.

Uncovering the definitional model of intuition caused me to listen to my own intuition in a much richer way. Intuitive insights now have a dual effect on me. At one level I am interested in what the insight means. And, at a meta-level, I now spend time with the thought, trying to understand it and the feelings that are associated with it.

For example, I was in a meeting where someone was proposing an idea that I would need to invest my time into developing. Someone asked me, “what is your gut telling you?” “Well, my gut is telling me to ‘run’! But, if I really thought about why it is telling me to run, I can recognize my fears around taking the time to develop the idea, when I should be writing my thesis. Therefore, it is not the idea that is making me say ‘run,’ it is the notion that this will take up too much of my time.” After reframing the problem, we then looked at who might have the time to develop the idea.

It is examples like this one that made me realize just how much more connected to my intuition I had become. In essence, I had reached a new accord with my intuitive,
emotional and cognitive faculties. No single element would be pre- eminent, each would be considered without judgment, until the time when a decision had to be made. At that point, the input from all three elements could be evaluated and a decision reached. It has been said that “we teach what we most need to learn” and in this case, I feel that consciously adopting and applying intuitive tools and techniques has helped me to become a much more effective problem solver.

Fundamentally, CPS is a process. In fact, a common mantra in the field is that one should always “trust the process,” and I had spent many years doing exactly that. It therefore isn’t too surprising that when I embarked on this journey I had an implicit assumption that intuition would also be some sort of process. My assumption was thrown into stark relief by the findings that emerged from the data. People talked about intuition in terms of a skill set, rather than a flow. Until that moment, I hadn’t really understood why my colleagues (Puccio, Murdock and Mance, 2006) moved from a Creative Problem Solving process model into a thinking skills model. Essentially, it was because they recognized that we needed to employ various skills as we problem solve, and that it was the successfully application of these skills that ultimately determined whether the problem was solved.

Recognizing the importance of the intuitive skills helped me to frame intuition in a new way. It also created an important connection for me, because many of the intuitive skills were similar to the affective skills that my colleagues had already identified. Oddly enough, I had been working in collaboration with Murdock (Murdock & Burnett, 2007) to further develop the affective skill set, but had not connected it with my work on intuition.
It is not an exaggeration to say that developing the intuitive skill set has shifted my perception on how to live my life. This really struck me one afternoon, when I was working hard at finding resources to support the various intuitive skills, with no success, while I was functioning on very little sleep. In a moment of emotional hijacking, where my emotions took over my intention to complete the work I set out to accomplish, my husband looked at me, and calmly said, “look at the model you just created.” Ashamed, I looked at what was in my hands, and realized I needed to be calmer, more mindful and more aware of the complexity I was dealing with. After that incident, I made a conscious effort to practice what I was teaching.

I had the opportunity to put this new approach into practice in my holistic class. I started the class with a different perspective on teaching. I didn’t want to be the showman anymore. I wanted to be the curious, open-minded, authentic and accepting instructor that I felt would be most effective, especially for this topic. My aim was to develop a physical and psychological climate that was open, curious, relaxed and which would somehow connect the whole person with CPS. Although I didn’t know quite why I wanted to structure the environment in this way, I wasn’t surprised to see my hunch validated by the data on intuitive climate that showed that trust and openness, idea time and a relaxed and inviting atmosphere were essential for using intuitive tools and techniques. What I intuitively knew from the start, manifested in the participant responses.

However, there was one element of the intuitive climate that did not emerge from the deliberate analysis of the data, and that also hadn’t been in my original ‘vision.’ In fact, I only became aware of it by looking and feeling ‘beyond the data.’ My initial clues
that there was some other factor in the environment came when some of the participants mentioned the tools feeling “heavy.” I can also recall a number of conversations with participants after class who said they felt completely drained when class was over. By the second weekend, I was trying to mentally prepare myself for an exhausting weekend. It was at that point that I realized that I was missing a playful component of the class. Engaging in intuitive tools and discussions can be a very deep experience and as a result, very tiring. However, when this is balanced with play- then the participants left feeling brighter. I quickly made the change in my lesson plans, starting the day out with finger painting, and ending with bubble blowing.

Teaching the holistic class was an unforgettable journey. Given the depth of discussion, the relationships that were formed, and the transformations I witnessed and later read about, I felt as if I had been transported into a whole other depth of teaching and learning. It is a place where the teacher is a student, and students are vulnerable and open to making mistakes, finding themselves and their authenticity. It has made me realize that the greatest gift I can help others find is the gift of themselves- who they are, what they want to be, what makes them feel, what motivates them. This is the center of where our personal creativity lies. In my opinion, finding our authentic selves is what will ultimately make us the most effective creative problem solvers.

In conclusion, I began this journey with myself, and have ended as a very different person. I genuinely feel as if I was brought to study this topic because I really needed to stop multi-tasking, rapid judgment, living in the future and operating with a lack of emotional awareness; and instead to shift into a lifestyle of living more in the moment, managing myself more effectively and most of all, enjoying and appreciating all
that life has given me.

**Future Research**

When I began this research five years ago, I had four questions, and now as I conclude, I have hundreds of questions. I feel as if I have begun a life-long journey of research into a vast array of interesting questions. And, that it is my job as an academic to explore, and to ultimately create dialogue around these questions. To begin this dialogue, the following is a list of potential opportunities for research in this area:

**What is the Role of Mindfulness in Creative Problem Solving?**

Mindfulness, by definition, emerged as an essential skill to develop intuition. While there have been a number of studies on meditation and creativity (Sarath, 2006; Travis, 1979), there is very little mention of mindfulness as a skill in the Creative Problem Solving literature.

**How do Foursight © Preferences Influence the way we Use our Intuition in CPS?**

Foursight © is a psychometric instrument that measures one’s preferences for the various stages in the CPS process. Do people with different preferences experience intuition differently? And, if so, what might this imply for teaching intuition as a deliberate skill?

**Do People with a Myers-Briggs Type Indicator Preference for Sensing (Over Intuition) Believe They are not Intuitive?**

The MBTI purports to measure one’s preference for intuition on one of its subscales. Does this measurement correlate with the definition of intuition developed in this research, and experienced by the participants in the course? If so, what might the
MBTI preference tell us about people’s willingness to use their intuitive skills in problem solving?

**Does the Deliberate Exploration of the Intuitive Skill Set Help to Connect Artists to CPS?**

Practicing artists are often unimpressed and unable to connect with the CPS process because it doesn’t describe the act of creation in terms that the artists find recognizable. Would an intuitive approach to creativity act as a bridge to connect the artists to the world of deliberate creative problem solving?

**Does the Application of Holistic CPS Produce Better Solutions than the Traditional Model?**

Holistic CPS would combine intuitive, affective and cognitive tools in an attempt to produce more ‘complete’ solutions. Would the deliberate inclusion of these additional elements result in noticeably better ideas?

**Do People Become More Creative When Learning Creativity from a Holistic Approach?**

One of the aims of holistic education is to increase the likelihood of transformational learning occurring. If creativity is taught using this approach, is it more likely that students will demonstrate significantly higher levels of creativity?

**Conclusion**

In some ways, conducting this research has given me an insight into how the earliest creativity researchers must have felt when trying to explain their thoughts to a skeptical world. In a recent presentation of my research one participant wrote- “will this
scare people” and another wrote “what’s the big deal?” Clearly, the concept of deliberately employing one’s intuition in the service of creative problem solving, is still a contentious and potentially heretical thought.

I was drawn to study intuition because I felt, as an artist, alienated from my own discipline. I want to see the field of creativity become more inclusive and to engage with the whole range of human problem solving approaches and experiences. As one of my students said: *I hope that this course brings attention to intuition and its rightful place in the CPS process. I also hope that this course is not offered in a few years. Not because I don’t want to see it being offered, but because active intuition, and the tools that support it, should be an integral part of the required Creative Studies courses.*

*Shouldn’t all courses offer Holistic approaches to CPS? Although we can now elect to make use of intuition at any time, in no way should intuition be an elective (Sue-reflection).*

Human beings are not divisible into neat conceptual blocks. We are complex, multi-faceted, holistic beings, and the structure of both our knowledge and teaching processes needs to reflect this. Although the field of deliberate creativity has made great strides through focusing on the cognitive elements of problem solving, I believe that it is now time to embrace Sid Parnes’ (1992) original vision of creativity as a vehicle for moving “toward the goal of high-level wellness-not merely physical wellness, but psychological, sociological, political, and spiritual wellness as well- moving toward what Maslow meant by the self-actualizing person” (p. 152). Intuition will be the mechanism to help us reach this goal.
References


Studies in Education, University of Toronto, Toronto, Canada


Curriculum Development.


Isaksen, S. G., Dorval, K. B., & Treffinger, D. J. (2000). *Creative approaches to*


Langan-Fox, J., & Shirley, D. A. (2003). The nature and measurement of intuition:


Heights, MA: Allyn and Bacon.


Appendix 1 Invitation to Complete the Questionnaire

Dear Creative Studies Alumni and Current Students:

As a fellow graduate and current faculty member of the Creative Studies department, I’m contacting you as a person with expertise in creativity and Creative Problem Solving.

I am currently conducting my doctoral research on the role of intuition in Creative Problem Solving (CPS). As part of this research, I have organized a survey that explores people’s attitudes towards intuition, and whether they foster it in their problem solving activities.

Specifically, your participation will involve the completion of a short questionnaire. Answers to your questionnaire along with answers from other participants will be analyzed. Your responses are completely confidential. If results are published or presented, the articles will not use any personally identifying information.

There is no right or wrong answers and your honesty in answering these questions are very important. Your participation is voluntary and you have a right not to answer any question or may chose not to participate in this study. The time required to complete this questionnaire is approximately 15 minutes. The final date to complete is Feb. 7, 2009.

Any questions or concerns regarding this research can be directed to Cyndi Burnett at argonac@buffalostate.edu

Thank you for your assistance.

Cyndi Burnett
Appendix 2 Questionnaire for Part Two of the Study

Intuition and Creative Problem Solving

Participation in this research study is completely voluntary. Please read the information below and ask questions about anything that you do not understand before deciding if you wish to participate. The researcher listed below will be available to answer your questions.

Name and title of Lead Researcher: Cynthia Burnett, Doctoral Candidate, University of Toronto; Lecturer, International Center for Studies in Creativity, Buffalo State
Email: argonac@buffalostate.edu

Doctoral Candidate Supervisor: Dr. Linda Cameron, Associate Professor, University of Toronto
Email: lcameron@oise.utoronto.ca

PURPOSE OF STUDY

The purpose of this research study is to explore how intuition may be used in the Creative Problem Solving Process.

SUBJECTS

Anyone over the age of 18 who has completed academic coursework in Creative Problem Solving may complete this questionnaire.

Number of Participants

This study will include approximately 100 participants.

PROCEDURES
Procedure Details: If you agree to this study, you will be asked to complete the attached questionnaire. You may decline to answer any question, or to complete any part of the tasks.

RISKS AND DISCOMFORTS

The possible risks and/or discomforts associated with the procedures described in this study are no more than that of day-to-day life.

BENEFITS

Benefits to the Participant: You will not directly benefit from participation in this study.

Benefits to Others or Society: This study will expand the field of Creative Problem Solving by exploring the multi-faceted nature of intuition.

COMPENSATION

You will not receive compensation for your participation in this study.

WITHDRAWAL OR TERMINATION FROM THE STUDY AND CONSEQUENCES

You are free to withdraw from this study at any time without negative consequences. If you decide to withdraw from this study please notify the researcher as soon as possible.

CONFIDENTIALITY

Data Storage

Your research records will be stored in the following manner: A copy of all original returned files with personally identifiable information will be kept under lock and key and also electronically with password protection. These files will only be accessible to the lead researcher (Cyndi Burnett) and faculty advisor (Dr. Linda Cameron). All additional copies will be coded to maintain participant confidentiality.
These coded files will be used for analysis and for publication purposes. All data will be retained for at least three years in compliance with federal regulations.

FINDINGS

The researcher will be using the data collected for her doctoral thesis, publications, and public presentations in the field of creativity. A summary of research results can be obtained by emailing the researcher directly.

IF YOU HAVE QUESTIONS

If you have any comments, concerns, or questions regarding the conduct of this research, please contact the researcher listed at the top of this form.

If you are unable to reach a member of the research team listed, at the top of the form, and have general questions, or you have concerns or complaints about the research study, researcher, or questions about your rights as a research subject, please contact either The Research Foundation of SUNY/Office of Sponsored Programs by phone, (716) 878-6700 or by e-mail at gameg@rf.buffalostate.edu or in person at Bishop Hall, Room 17, 1300 Elmwood Avenue, Buffalo, NY 14222 or the Ethics Review Office at the University of Toronto at ethics.review@utoronto.ca or (416)946-3273.

VOLUNTARY PARTICIPATION STATEMENT

Participation in this study is voluntary. You may refuse to answer any question or discontinue your involvement at any time without penalty or loss of benefits to which you might otherwise be entitled. Your decision will not affect your future relationship with Buffalo State or the University of Toronto. Your signature below indicates that you have read the information in this consent form and have had a chance to ask any questions that you have about the study.
* Required

Name

I have read the above consent form, and agree to be a participant in this study. *

* Yes, I agree to be a participant in this study.

* No, I do not agree to be a participant in this study.

I am:

* A graduate of the Master of Science degree in Creative Studies

* A graduate of the Graduate Certificate in Creative Studies

* A current student in Creative Studies

* Other:

My primary academic background is

* Business

* Art

* Education

* Science & Technology

* Other:

What is your main occupation?

How old are you?

* 18-29

* 30-39
* 40-49
* 50-59
* 60+
* I prefer not disclose my age.

I am

* Male
* Female

How would you define intuition?

Do you consider yourself an intuitive person? Why or why not?

What does intuition sound like to you (what words, noises or sounds would illustrate that it is happening?)

What does intuition look like to you (what behaviors would you see in yourself and others that would illustrate that it is happening)?

What does intuition feel like to you (what physical responses would you have that would illustrate it is happening to you)?

Can you recall a time when you used intuition in problem solving? If so, please explain.

How do you use Creative Problem Solving (CPS)? (check all that apply)

* I use it for my personal challenges
* I use it for other people's personal challenges
* I use it on my professional challenges
* I facilitate groups
* I do not use Creative Problem Solving

* Other:

What is your current level of expertise in the Creative Problem Solving process is...

1 2 3 4 5

1 Novice-I have little knowledge of the Creative Problem Solving process

5 Expert-I would be comfortable teaching CPS to others

Do you make it a practice to foster the use of intuition in your CPS sessions? If so, in

what ways have you fostered intuition?

In your opinion, is there a role for intuition in CPS? If so, how would you describe the

role? If not, please explain.

Have you ever used any deliberate intuitive tools or techniques when engaged in CPS? If

yes, please explain the tools you used.

May I contact you for more information? *

* Yes, please contact me via email.

* No, please do not contact me.

If yes, what is your email address?
Appendix 3 Invitational Letter to Students

Dear Student,

Hello! I am so pleased you have registered for CRS 594 Holistic Approaches to Creative Problem Solving. The class will meet from 10am-5pm on 2/1, 2/21, 2/22, 3/14, 3/15, 4/18 and 4/19. Please double-check to make sure this does not conflict with any of your other classes.

To begin, you may be wondering what is meant by “holistic.” Holistic refers to the balance of intuition and cognition. This course will focus on the deliberate use of intuitive tools and techniques that may be used in CPS to complement the more cognitive tools. CRS 559 is a prerequisite, so that everyone in the class has at least a basic understanding of the CPS model. This is the first time in the history of ICSC that there has been a course which focuses on deliberate use of intuition in CPS, and I am excited to be exploring this topic with all of you.

Although I am still refining the syllabus and contract, here are the types of assignments you can expect. Please note, these assignments are not final until I post them on ANGEL (no later than January 26th).

**Intuition Research Paper:** Each student will write a 6-8 page research paper (APA style) about intuition and a topic of his/her choice. Criteria will be provided.

*Sample* topics include: (Intuition and the relationship with…)

- Leadership  
- Education  
- Dreaming

- Organization  
- Arts  
- Spirituality

- Neuroscience  
- Metaphors  
- Music
Reflection Papers:

There will be a number of intuitive tools and techniques covered in class. Students will be required to write a series of short (100-250 words) reflections on the various tools and techniques explored in and out of class. *(each reflection will be worth 5 points, for a maximum total of 50 points).*

Mindfulness/Meditation Reflections:

Students will be taught some very basic meditation techniques. These techniques are about being present with yourself and not related to religious activity. For one month, students will be required to practice mindfulness/meditation for 10 minutes each day and then write one paragraph about their experience. Students will submit paragraphs in one document the next time the class meets. If a student is not comfortable doing meditation, he/she may choose to do an alternative mindful activity (cooking, cleaning, walking, which will be discussed in class). If for any reason student is uncomfortable with this assignment, he/she must contact the instructor in advance for supplemental work. *(25 points)*

Final Paper:

Students will write a two-page reflective summary of key learning’s. Criteria will be provided. *(25 points)*

At this time, there is no required textbook. However, there will be research articles that you will be required to read to support what we are doing in class. Next…

As some of you may know, I have been pursuing my doctoral studies at the
Ontario Institute for Studies in Education at the University of Toronto in Curriculum, Teaching and Learning with a focus on Holistic and Aesthetic Education. My area of research is the role of intuition in Creative Problem Solving.

Given CRS594 will be the exploration of intuitive methods in deliberate CPS, I will be asking students in this class if they would like to be a participant in my qualitative study. Here is what being a participant in the study would entail:

1. Be interviewed before and after the course on Holistic Approaches to Creative Problem Solving (total of two hours time commitment).
2. Allow videotapes of class to be used as part of the data set. If each student in class agrees to be a participant of the study, then the videos will be used for data collection (no additional time commitment beyond class).
3. Allow your reflection papers (assigned for the course) to be used for data (no additional time commitment beyond class).
4. Six month follow up interview (one hour of time).

Please read over the consent form attached. If you agree to participate in the study, please read the “consent” form attached and send me an email stating, “consent.” You will need to officially sign the consent form when I interview you. If you do not agree to participate, please sign the “Non-consent” form, and email it back to me (you can simply cut and paste from the word document). If you are unsure as to whether or not you would like to participate in this study, and would like to wait until grades are posted before making your decision, please sign the “wait” form and email it back to me (see the “wait” form for more information).

If you consent to being a participant in this study, please send me two different
times you would be available to interview in the following time slots:

   Monday, 1/26 from 10-3
   Wednesday, 1/28 from 1-6
   Friday, 1/30 from 2-6
   Saturday, 1/31 from 10-4

If none of the above times work for you, please send me a few times that you are available, and I will do my best to accommodate you.

Please note: If all students decide to be participants, then the class will know this, as sessions will be videotaped for data collection. Everyone in the class will sign a confidentiality agreement that addresses what occurs in class.

However, if someone decides NOT to participate, the only person who will know is me, Cyndi Burnett, and I will simply tell the class it will not be videotaped. I would ask that you do not ask one another if he/she is a participant in this study, as it is important that no one feels any pressure to be a part of the study.

Consenting or declining to be a participant in this study will in no way affect your grade. Please see the various forms for more information.

If you would like to speak with me further about this course or being a participant in this study, please do not hesitate to contact me via email at argonac@buffalostate.edu

I sincerely look forward to exploring this topic with all of you.

Cyndi Burnett

Doctoral Candidate- Ontario Institute for Studies in Education at University of Toronto & Lecturer - International Center for Studies in Creativity at Buffalo State
INFORMED CONSENT

Holistic Approaches to Creative Problem Solving

Participation in this research study is completely voluntary. Please read the information below and ask questions about anything that you do not understand before deciding if you wish to participate. The researcher listed below will be available to answer your questions.

Name and title of Lead Researcher: Cynthia Burnett, Doctoral Candidate, University of Toronto; Lecturer, International Center for Studies in Creativity, Buffalo State

Email: argonac@buffalostate.edu

Doctoral Candidate Supervisor: Dr. Linda Cameron, Associate Professor, University of Toronto

Email: lcameron@oise.utoronto.ca

Study Location(s): This study will be conducted at Buffalo State College.

PURPOSE OF STUDY

The purpose of this research study is to explore how deliberate intuition may be used in the Creative Problem Solving Process.
SUBJECTS

Inclusion Requirements

You are eligible to participate in this study if you have taken CRS 559, Principles in Creative Problem Solving, and if you are enrolled in CRS 594, Holistic Approaches to Creative Problem Solving.

Exclusion Requirements

You are not eligible to participate in this study if you do not meet the inclusion criteria requirements.

Number of Participants

This study will include approximately 8-12 participants.
PROCEDURES

Procedure Details: If you agree to this study, you will be asked to do the following:

1. Be interviewed before and after the course on Holistic Approaches to Creative Problem Solving (total of two hours time commitment).
2. Allow videotapes of class to be used as part of the data set. If each student in class agrees to be a participant of the study, then the videos will be used for data collection (no additional time commitment beyond class).
3. Allow your papers (assigned for the course) to be used for data (no additional time commitment beyond class).
4. Follow up interview six months after the course is complete.

You may decline to answer any question, or to complete any part of the tasks.

RISKS AND DISCOMFORTS

The possible risks and/or discomforts associated with the procedures described in this study are no more than that of day-to-day life.

BENEFITS

Benefits to the Participant

You will not directly benefit from participation in this study.

Benefits to Others or Society

This study will expand the field of Creative Problem Solving by understanding if, how, and when deliberate intuitive techniques are effective in a CPS session.

COMPENSATION
You will not receive compensation for your participation in this study.

WITHDRAWAL OR TERMINATION FROM THE STUDY AND CONSEQUENCES

You are free to withdraw from this study at any time without negative consequences. If you decide to withdraw from this study please notify the researcher as soon as possible. If you decide not to participate in the study, or you decide to withdraw from the study, your grade for the course will not be affected.

CONFIDENTIALITY

Focus Group/Class Participation

Participants in this study will be part of a course at Buffalo State. In order to guarantee the privacy of all participants, students will be asked to sign a confidentiality agreement, before the course begins, in which they agree not to discuss the contributions of other participants with people outside of the class.

Data Storage

Your research records will be stored in the following manner: A copy of all original returned files with personally identifiable information will be kept under lock and key and also electronically with password protection. These files will only be accessible to the lead researcher (Cyndi Burnett) and faculty advisor (Dr. Linda Cameron). All additional copies will be coded to maintain participant confidentiality. These coded files will be used for analysis and for publication purposes. All data will be retained for at least three years in compliance with federal regulations.

FINDINGS
The researcher will be using the data collected for her doctoral thesis, publications, and public presentations in the field of creativity. A summary of research results can be obtained by emailing the researcher directly.

IF YOU HAVE QUESTIONS

If you have any comments, concerns, or questions regarding the conduct of this research, please contact the researcher listed at the top of this form.

If you are unable to reach a member of the research team listed at the top of the form, and have general questions, or you have concerns or complaints about the research study, researcher, or questions about your rights as a research subject, please contact either The Research Foundation of SUNY/Office of Sponsored Programs by e-mail at gameg@rf.buffalostate.edu or in person at Bishop Hall, Room 17, 1300 Elmwood Avenue, Buffalo, NY 14222 or the Ethics Review Office at the University of Toronto at ethics.review@utoronto.ca.

VOLUNTARY PARTICIPATION STATEMENT

Participation in this study is voluntary. You may refuse to answer any question or discontinue your involvement at any time without penalty or loss of benefits to which you might otherwise be entitled. Your decision will not affect your future relationship with Buffalo State or the University of Toronto. Your signature below indicates that you have read the information in this consent form and have had a chance to ask any questions that you have about the study.
**Non-Consent Form**

I do not wish for any of my data to be included in this study. As a result, there will not be negative consequences, and other students in the class will not know I have chosen not to be a part of the study. If I have any concerns, I will contact the instructor immediately.

__________________________________              _______________________________
Signature                                                                   Date
Wait Form

I have not decided whether or not I will be a participant in this study. I would like to wait until after grades are posted to decide. I understand that in doing this, I will have a pre course interview with researcher, classes will be videotaped and reflection papers collected. On May 14th, 2008, when grades for the class are posted, I will sign either the consent form, or the non-consent form. If I sign the consent form, my data set will be used. If I sign the non-consent form, my data will be immediately destroyed. There will not be positive or negative consequences to my final decision

_________________________________________  ________________________________
Signature                                                                 Date
Appendix 4 Contract and Syllabus

CRS 594: Holistic Approaches to
Creative Problem Solving

Course Contract/Syllabus

Spring 2009

General Information:

Instructor: Cynthia Burnett; Electronic Office Hours as needed via email:
argonac@buffalostate.edu  Texts: Select readings- see bibliography.  Prerequisites:
CRS 559

Course Description:

This course explores the role of deliberate intuition in the Creative Problem Solving process as a complement to the traditional cognitive methods. Students will learn an array of passive and active intuitive tools and techniques to be used in a variety of contexts and disciplines. The intent of this course is to develop more reflective, mindful and visionary creative leaders, teachers and facilitators of Creative Problem Solving.

Focus:

The focus of CRS 594 is to examine and experience how cognitive and intuitive methods work together in the Creative Problem Solving (CPS) process.

Goals:

• To introduce students to a holistic viewpoint of Creative Problem Solving;
• To examine the relationship between intuition and cognition in the problem solving process;
• To experience intuitive problem solving tools and techniques to be used individually and in groups;
• To apply intuitive methods on challenges that are encountered in personal and professional settings;
• To enable students to expand their application of CPS by adding to their toolboxes;
• To enable students to develop confidence in applying a wide variety of intuitive tools;

Requirements:

Evaluation:

Evaluation in creative studies involves both formative (used to guide learning) and summative (used for final assessment of learning) approaches. It includes a variety of authentic assessment products suitable for portfolio inclusion and presentation. Final grades are based on a criterion-referenced system reflecting your success in relation to a percentage of the total possible points attainable in the class. The point structure is an accumulation of those described above. Students should keep an accurate accounting of their point totals in relation to the individual activity and the overall total. Evaluation is based on a criterion-referenced approach consisting of the total number of points from all assignments. You must complete all assignments to fulfill the requirements of this course.
Participation and Attendance:

All creative studies classes have interactive and participatory aspects and contain both individual and group applications. Your presence, involvement and contributions are regarded as an essential part of your creative learning and are equally essential to the learning of others. Attendance, preparation and participation are expected and included in your final evaluation. One letter grade will be lowered for each class a student misses unless there is an extenuating circumstance. If this is the case, then a make-up assignment will be given for the time missed in class.

Make-up/Late Work: “Please solve your problems in advance so that I may be of more help to you.” For a successful experience in this class, please pay careful attention to your planning and accountability regarding assignments. A problem-solving attitude and effective anticipatory action are your strongest assisters for potential acceptance of late work. Assignments may be turned in early, and it is helpful to network regularly with classmates to check on class work and assignments. Late work may be accepted for partial credit at the discretion of the instructor based on advanced communication and your problem-solving effectiveness in overcoming concerns and meet learning goals. In order to negotiate this, please be in touch with me by phone or email prior to your absence or as quickly as possible after you know your situation to present a written plan that meets the following criteria:

(a) shows evidence of effort to anticipate and solve the problem in advance;

communication and networking with instructor and other students;

(b) demonstrates ownership and accountability for actions;

(c) provides for minimal disruption in the learning environment;
(d) provides for equitable time, energy, effort and quality of work;
(e) represents a meaningful learning experience; and
(f) satisfies learning goals of session.

Readings:

This is an exploratory and introductory class on intuition and creativity. Therefore, students will be provided with a set of readings to complement what they are learning in class. Each week, the students will be assigned two readings that support the content. They must read, reflect and post comments on ANGEL discussion board. See Intuition Bibliography for related articles/books. **(14 weeks x 5 points each week=70 points).**

Writing:

1. Creativity and Intuition Research Paper: Each student will write a 6-8 page research paper (APA style) about creativity, intuition and a topic of his/her choice. Criteria will be provided.

   Sample topics include: (Creativity, Intuition and the relationship with…)
   -Leadership -Education -Dreaming
   -Business -Arts -Spirituality
   -Neuroscience -Metaphors -Music

   **(worth 50 points)**

2. Reflection Papers:

   There will be a number of intuitive tools and techniques covered in class. Students will be required to write a series of short (100-250 words) reflections on the various tools and techniques explored in and out of class. **(each reflection will be worth**
5 points, for a maximum total of 50 points).

3. Mindfulness/Meditation Reflections:

Students will be taught very basic meditation and mindfulness techniques in class. These techniques are about being present and have been shown to support health and creativity. For one month, students will be required to practice mindfulness or meditation for 15 minutes each day and then write one paragraph about their experience. Students will submit paragraphs in one document the next time the class meets. (25 points)

Students will also be required to write a one-page summary of their overall insights of being mindful for the month (15 points).

4. Final Reflection Paper:

Students will write a two-three page reflective summary of key learning’s from class. Criteria will be provided. (25 points)

Presentation:

Teach-Back:

There are a number of intuitive techniques that may be found in the creativity literature. Each student will create or adopt an intuitive tool that is not explored in class. Student will submit tool to instructor one week before presentation for review (on the form provided), and once approved, will teach back to the class on the final weekend. (10 points submission, 15 points presentation)

***Please note, if a student is uncomfortable participating in any of the activities, he/she may choose to observe or speak with the instructor about an alternate activity.
CRS 594 Course Syllabus and Tentative Topics

Weekends, Spring 2009, Cyndi Burnett

January 31st: Warming Up

Reflection: Review of the history of Creative Problem Solving and Intuition

Current State: Orientation and overview of the course

Vision: A Glimpse of the Future

Begin group development and building a creative climate with other students (introductions, exchange of interests, needs, skills, etc.). Review contract and syllabus.

Overview of holistic approaches, intuition and the research that exists to support intuition in CPS; Full value contract- expectations, behaviors, goals and focus of course;

Understanding mindfulness.

Assignments:

• Selected readings from the bibliography- read, post a response, and comment.

• Intuitive tool reflection assignments (as assigned).

• Begin research paper- due April 18th.

February 21st and 22nd: Digging Deeper into the Present

Explore intuitive tools related to mindfulness. Overview of meditation and research that supports meditation in creativity. Learn and practice basic meditation techniques. Tools to be explored- mindful listening, image streaming, thin slicing, head, heart and gut, blind contour drawing, collages, salon.

Assignments:

• Selected readings from the bibliography- read, post a response, and comment.

• Intuitive tool practice and reflection assignments (as assigned).
• Continued work on research paper- due April 18th.

• Meditation journal- due March 21st.

• Meditation reflection paper- due March 21st.

March 14th and 15th: Continued Digging Deeper into the Present and Looking toward the Future

Debrief of meditation and creativity. Further intuitive tools to be explored- labyrinth, Art Gallery of you mind, Glass of water, coin toss. Discussion of incubation and practice of incubation and excursions. Beginning to look toward the future and final class.

Assignments:

• Selected readings from the bibliography- read, post a response, and comment.

• Intuitive tool practice and reflection assignments (as assigned).

• Continued work on research paper- due next class!

• Meditation journal due March 21st.

• Meditation reflection paper due March 21st.

• Write-up of adopted intuitive tool due April 11th.

April 18th and 19th: Extending the Learning- Vision of the Future

Adopted intuitive tools presentations. Imagery session in planetarium.

Mindmapping connections from course and beyond. Course close down. Key learning’s and PPCo.

Assignments:

• Final reflection paper due April 25th.