

TRANSFORMING DREAMS INTO REALITY: THE POWER OF CREATIVE PROBLEM SOLVING

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By far, the most satisfying experiences I have had included the transformation of dreams into reality. Whether it was obtaining a college degree, improving our instructional unit in social studies, or committing to a life-long relationship, everything worthwhile started with an image of some desired future. Of course there are plenty of surprises and serendipitous events along the way, but knowing and choosing to take advantage of some, and not others, is often guided by at least a fuzzy view of the future state.

In my work with Creative Problem Solving (CPS) over the past twenty-five (or so) years, I have had a few peak experiences which had helped me understand and appreciate the power of CPS. One of the most recent has been the application and integration of CPS into the area of reclaiming talent with at-risk youth (McCluskey, Baker, O'Hagan & Treffinger, 1995). I am particularly gratified that it is the current approach to CPS that is being used to engage those of talent and high ability to learn and use their hidden creative strengths.

The descriptions and graphic depictions of CPS have changed frequently over the past fifty years. During that time much research and application have taken place to better understand and use the CPS framework as a methodology for planning and managing change. The purpose of this paper is to describe some of the more recent developments that have taken place on the CPS process as well as to describe some of the applications of this new depiction of the CPS model. Before examining the current developments in CPS it may first be helpful to explore the historical development of the CPS model itself.

Where did Creative Problem Solving come from?

The initial descriptions of the CPS process began with Alex Osborn, who in 1953, in his book *Applied Imagination*, first described CPS as a seven-stage process. The process started with pointing up the problem (orientation) through preparation, analysis, hypothesis, incubation, synthesis to judging the resultant ideas (verification). Through continued reading, personal application and extensive use within the organizational context, Osborn modified his conception of CPS. In the 1967 version of *Applied Imagination*, Osborn condensed the seven-stage model of CPS into a three-stage model. This version identified fact-finding, idea-finding and solution-finding in a restatement of the original seven stages.

Osborn noticed that using deliberate processes and thinking tools resulted in increased levels of efficiency and effectiveness at managing change within the

workplace. As a result, he began to focus his efforts on weaving CPS into the educational context—believing that training in this type of thinking should not wait until people entered the work place. His vision was to "*bring a more creative trend to American education.*" Osborn, with his new colleague, Sidney Parnes, focused on using CPS to help students better understand and apply their own innate creativity in all aspects of their lives.

Parnes continued to work with and modify the CPS process after Osborn's death. He and his colleagues tested the revised five-stage model through an experimental program at Buffalo State College called the Creative Studies Project (Parnes, 1987). This model formed the foundation for what is commonly referred to as the Osborn-Parnes tradition of CPS.

One of the first visual or graphic depictions of CPS (see Figure 1) appeared in Parnes' (1967) workbook used in the Creative Studies Project. This image became the first in a series and provided the initial break from the dominant verbal descriptions of CPS.

Figure 1: Osborn-Parnes' Five Stage CPS Model

In the mid 70's, Ruth Noller and Angelo Biondi worked with Parnes to revise this earlier work (Parnes, Noller, & Biondi, 1977; Noller, Parnes, & Biondi, 1976). They provided the alternative graphic depiction of the five-step CPS model that illustrated the alternate divergent and convergent thinking inherent in CPS. However, it also suggested the creative process was a neat, linear and sequential series of stages. Although it depicted one possible image of the creative process, its limiting view of natural creative problem-solving behavior resulted in mixed reactions.

In the early 80's, the CPS process changed again. Isaksen, Treffinger and Firestien (1982) examined more clearly the social roles of client, facilitator and resource group related to using CPS in groups. In 1985, Isaksen and Treffinger (1985) modified the CPS process itself to make it more easily learned and applied. The depiction of CPS included the Mess-Finding stage, renamed Fact-Finding to Data-Finding and more deliberately emphasized the dynamic balance between generating (diverging) and focusing (converging). The analogy of CPS stages as "buckets" containing tools and strategies was developed to emphasize the flexible application of CPS.

Although CPS was described as a flexible process, most graphic representations of the process made it look linear and sequential. Even Isaksen and Treffinger's (1985) version presented an image of CPS as a "gravity feed" model in which problems were dropped in the "top" of the process and solutions came out the "bottom" (see Figure 2). Such graphic representations of creative process received mixed reviews as well.

Figure 2: Gravity Feed View of CPS

Isaksen and his colleagues quickly found that adding more explicit emphasis to the "front-end" of CPS, and the social roles of facilitator, client and resource group, made it nearly impossible to "run through" the entire process. Isaksen noticed that people tended to use CPS in pieces to clarify their understanding of problems, generate ideas, and/or plan for taking action and that the six stages of CPS could be broken up into these three main components. These conclusions were supported from personal and professional experiences with the Center for Creative Leadership, the Center for Creative Learning, through consulting and training provided through the Creative Problem Solving Group - Buffalo, and many other organizations; as well as from observations and discussions from a variety of service and educational program activities of the Center for Studies in Creativity. This resulted in the new understanding and graphic depiction of CPS identified in Figure 3 (Isaksen, 1989). It marked a transition away from a linear, six-step approach toward a more flexible componential approach. It is interesting that this new direction was consistent with the view of CPS held by Osborn in 1967.

Figure 3: CPS - Three Components and Six Stages

In 1989, the Center for Studies in Creativity and the Creative Problem Solving Group - Buffalo began a research initiative to examine the challenges surrounding the graphic depiction of CPS. This research took place under the ecological framework most recently described by Isaksen, Puccio and Treffinger (1993). It focused on developing a more comprehensive understanding of how the characteristics of the person influenced the nature of their creative process.

Drawings of natural process created by over 200 participants and students from a variety of programs and classes were analyzed to understand their characteristic similarities and differences (Isaksen & Pershyn, 1994; Pershyn, 1992). Pershyn's findings showed that effective problem solving took place using a variety of different creative processes and that our view of CPS needed to take as many of them into consideration as possible. As a result, the graphic depiction of CPS was drastically altered. The charge, initially set in 1985 with a "buckets" analogy, magnified in 1989 with a component view, was truly set off in 1992 with explicit research on natural creative process. Given the dynamic nature of natural problem solving, it was important that the new depiction be more representative of a wider array of problem-solving approaches.

From our experiences with studying CPS, as well as from being involved in its teaching and learning, we have found that identifying a common set of graphic depictions and language useful for sharing and discussing the general framework may be more appropriate than trying to identify THE creative process. It was with this in mind that Isaksen and his colleagues developed the current graphic depiction of a componential view of CPS (Isaksen, Dorval & Treffinger, 1994) depicted in Figure 4.

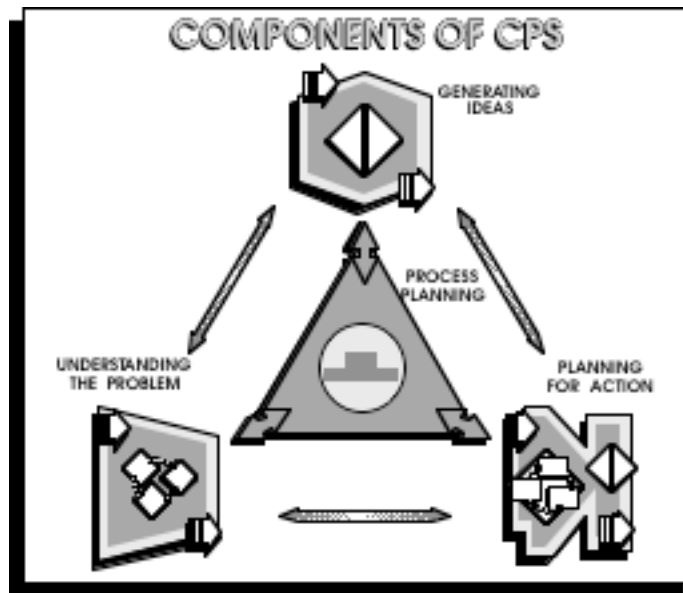


Figure 4: Components of CPS - A Current View

We present this view of CPS to create a common set of symbols and terminology within which we can use to effectively learn and apply CPS. To capture the complex and dynamic nature of natural problem-solving behavior in one graphic is a very difficult task. It is important to remember that the depiction of CPS is only one view of the creative process and that many other views are equally possible.

Task Appraisal and Process Planning

CPS is a flexible model in which the components and stages can be used in any sequence—but it is not a panacea, it must be used on tasks that are appropriate. Therefore, before CPS can be most effectively applied, two activities must take place—Task Appraisal and Process Planning (Isaksen, Dorval & Treffinger, 1994). Task Appraisal is concerned with making sure CPS is appropriate to the task. During Task Appraisal (see Figure 5), the key players, the desired outcome, the characteristics of the situation, and the possible methods for handling the task are considered. During Process Planning, the goal is to clarify how each of the key players will be involved in solving the task and identify the most effective entry point into the CPS framework for problem solving. At one level, Task Appraisal and Process Planning can be used by the individual to organize which CPS tools to apply. At a second level, they can be used by a facilitator to plan and facilitate CPS sessions. At a third level, it can be used by a trainer to identify a customer's need and to plan effective training programs.

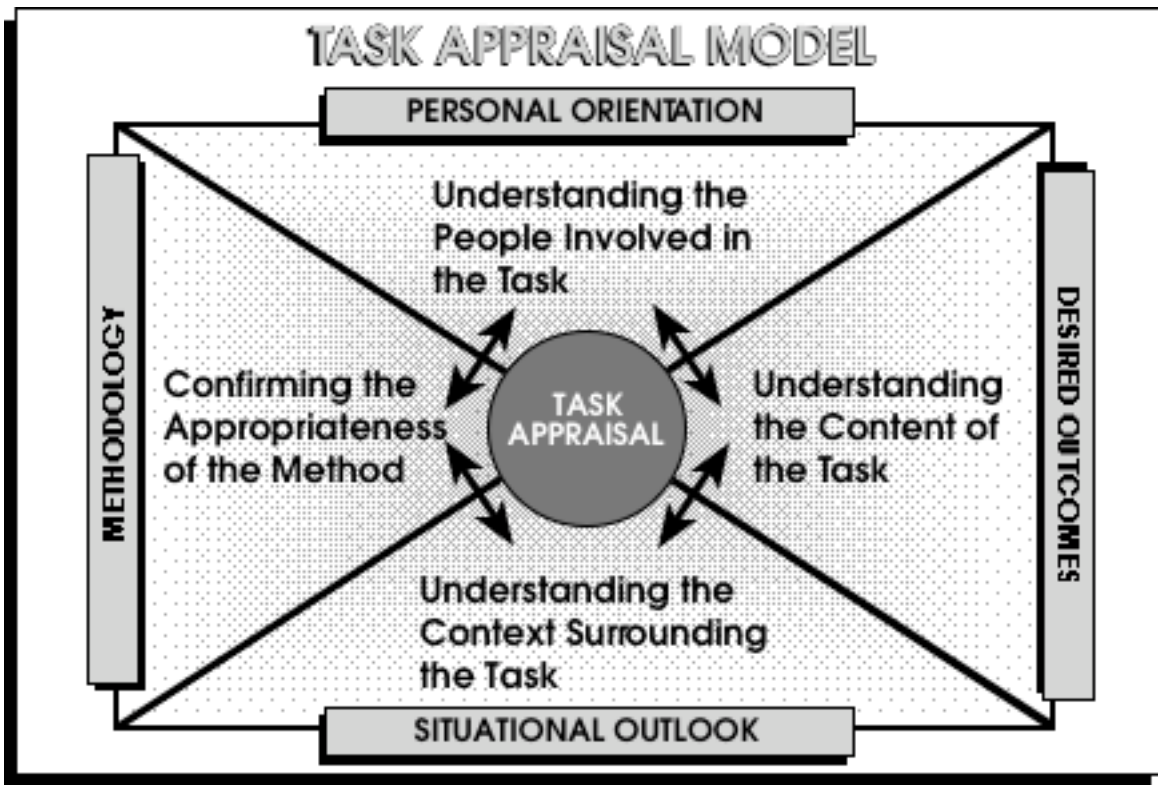


Figure 5: Task Appraisal Model

The Power of CPS

Today, we see CPS as a powerful yet flexible method used to help individuals, groups and organizations manage change. It provides a broad framework and a collection of tools for: identifying and defining problems and opportunities; generating high-quality solutions; and moving them to effective implementation. The current version of CPS also includes a metacognitive component which considers the desired outcome, the people involved, the situation and the method itself. After considering the results of Task Appraisal, the facilitator can engage in Process and Session Planning to prepare the appropriate approach to the CPS framework, language and tools.

CPS is now consistent with the current thrust of cognitive science (Isaksen, 1995) and is based on an ecological approach to understanding and developing creativity (Isaksen, Puccio, & Treffinger, 1993).

The power of CPS can be illustrated in a number of ways. The fact that it has been used to help plan and has been integrated into important projects like Lost Prizes is the tip of the iceberg. The use of CPS has resulted in desirable effects because of its long-term history of research and development, the wide variety of applications, how easy it can be learned and how valuable it has become in helping people understand and utilize their creative strengths.

CPS is a proven change method. Osborn first wrote of deliberate tools to promote the imaginative mind more than fifty years ago (Osborn, 1942). It all started with

the need to stimulate the idea-generating efforts of those in an advertising firm. Since then, an entire academic program has been developed and experimentally tested (Meadows & Parnes, 1959; Meadows, Parnes & Reese, 1959; Noller & Parnes, 1972; Parnes, 1961, 1963, 1966, 1967a & b, 1987; Parnes & Meadow, 1959, 1960; Parnes & Noller, 1972a & b, 1973; Reese, Parnes, Treffinger & Kaltsounis, 1976). Its fifty-year track record of research, development and application includes research conducted by other scholars which supports the validity of the method (Basadur & Thompson, 1986; Cramond, Martin & Shaw, 1990; Fontenot, 1993; Kabonoff & Bottger, 1991; Kapusinski, Sutterlin, Hobbins Wright & Bendiksen, 1989; Rose & Lin, 1984; Shack, 1993; Torrance, 1972, 1986, & 1987). The CPS method itself has undergone a series of developments outlined above and these have been the subject of a variety of impact and evaluation studies (Avarello, 1993; Curran, 1983; DeSchryver, 1992; Firestien, 1990; Firestien & McGowan, 1988, 1992; Firestien & Lunken, 1993; Isaksen & Murdock, 1990; Isaksen, Murdock & DeShryver, 1991; Isaksen & Puccio, 1988; Keller-Mathers, 1990; Lunken, 1990; Neilson, 1990; Puccio, 1986; Puccio, 1994; Vehar, 1994; Winsemius, 1995). No method can ever be perfectly "proven," but CPS has one of the best documented track records of any change method of which I am familiar.

CPS is a portable change method in that it is easy to learn and use. One of the major reasons it can be learned and applied so quickly is that it is built upon natural creative processes. We have recently extended efforts to understand stylistic differences and similarities in naturalistic CPS (Persbyn, 1992). With this improved understanding of creative processes, a detailed skillbase is under development which will detail specific skills and required levels of performance. This increased degree of sophistication can be reflected in the materials and delivery systems being developed and disseminated by the Center for Studies in Creativity, the Center for Creative Learning and the Creative Problem Solving Group - Buffalo. Making CPS portable means that we are concerned with helping participants learn and apply the tools, language and framework well enough to use it on their own. It means working against long-term dependencies and keeping CPS as a secret and invisible method which only serves to feed the myths of creative performance being mystical and magical.

CPS is a practical change method. A change method is a proposed way of dealing with a needed transformation. Change methods are ways individuals, groups and organizations deal regularly with demands for novelty and improved effectiveness. They can be reactive or proactive, deliberate or unintentional, implicit or explicit. Although CPS is a powerful and flexible process for transforming ideas into action, it is not always the best approach for all situations and needs. Given the current metacognitive approach to CPS, we are beginning to find useful ways to compare it against other change methods (Mance, 1996).

From my experience and research, educational use of CPS occurs in three broad ways. It can be taught directly, used or applied indirectly, and as a professional planning method (Isaksen, 1983; Isaksen & Parnes, 1985). Direct instruction is exemplified by special units, courses, and programs in which CPS is the content and major focus of the learning objectives. These opportunities are often found in enrichment programs or special programs for the unique needs of students. Indirect instructional use occurs when CPS serves another content or set of objectives; or is

applied on real challenges. Examples of indirect instruction include: using CPS to help students with their invention projects; using CPS to help students generate themes for their writing; and applying CPS on real classroom or school challenges. Indirect use is characterized by more focus on the content and less attention to the actual CPS process. Professional development and planning use of CPS is exemplified when the method is used to plan special projects and events, during shared decision-making team meetings, and for district and state-wide planning activities.

CPS also has a variety of uses within industrial and governmental organizations (Lewis, 1996; Reid, Dorval, et. al. 1996). We are frequently asked to provide general awareness sessions to groups within organizations to help them understand the key concepts of creativity, innovation and the key principles associated with CPS. Often, this awareness creates further interest and demand for training in the foundational skills of CPS and training in facilitation skills. The applications of CPS have included: new product and concept development, reengineering business processes, product and service naming, business re capitalization, team-building, project management and many others. CPS has been used to manage a variety of organizational changes including: developing a new shared vision; improving customer satisfaction; building continuous improvement programs; helping the implementation of quality programs, developing new lines of business. and many others.

The practical applications of CPS extend to all kinds of organizations and on a variety of levels. Some have found the use of one or a few tools to be worthwhile. At other times, being able to use some key language to be valuable in clarifying the purpose of a meeting or a particular part of a meeting. Others have found the continuous use of the entire framework more valuable. Factors such as the nature of the task, the desired outcome, the readiness of the people with whom you are working, and the situation within which you find yourself are all important in deciding the appropriate level of use.

CPS is a positive change method. CPS is about creating and choosing productive possibilities. By using the judicial mind in appropriate ways and places, the emphasis of CPS is on maintaining a dynamic balance of suspending or deferring judgment with the application of affirmative judgment. The purpose of this balance is to allow for the creation and development of novel and useful options and alternatives. The effective use of CPS promotes positive learnings about process and stays with people over time. The dream is to be able to draw out the innate creativity that is within each and every one of us to the benefit of humankind.

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