

# FOUR KEY PRINCIPLES OF CREATIVE THINKING TRAINING

By Blair Miller, Jonathan Vehar, Roger Firestien, and Bob Eckert

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## Abstract

The authors present the four key principles of their creative thinking research and training. These four keys have emerged from years of work in the field and the distillation of research, experience, and discussion. The four principles focus on the importance of 1) phrasing problems as questions, 2) generating many ideas, 3) evaluating ideas positively, and 4) taking personal responsibility for creativity. The authors state that these four principles are the foundation of the immediate application of creative thinking and are the key items that are highlighted before, during, and after their training presentations and programs.

## Implications & Applications

In designing training programs in creative thinking, the four key principles are useful as a structure on which to build, as they relate to various organizing frameworks of creative thinking. These four elements are important to bring to the attention of learners so that they can focus on the immediate application of the most impactful approaches. The authors recommend creating reminder materials to keep these key learnings alive as a way of focusing on the 20% of the course that yields 80% of the value.

## Article:

### **What sticks?**

If you had only five minutes to teach someone how to be more creative, what would you teach? For trainers, the question translates to: What's most likely to stick? What do people remember and implement? What training really makes people more creative? These are questions we've asked ourselves and each other for many years now, especially as clients have requested that training programs be shortened.

Among the four of us, we've been teaching, training, facilitating, and researching creative thinking and problem solving for over 70 years full-time. We've worked with hundreds of new groups to help them increase their ability to think more creatively.

Our point is not to boast, but to provide an indication of just how many times we've tried a new way to increase the "stickability" of the tools, techniques and methods related to creative thinking and problem solving. When you consider that the four of us just *love* new ideas, then you can imagine the size of our collective scrap-heap of things that didn't work, or at least not as well as we had hoped.

### What we teach — and to whom

Individually and collectively, we've worked with organizations ranging from the largest corporations (according to *Fortune's* list), to fast-moving growth companies, to small family-owned enterprises, to not-for-profit organizations and governmental departments and agencies. We have worked with most of our clients multiple times, and so have had the opportunity to refine and develop our programs for each organization. Since each organization has unique strengths and challenges, we engage in some degree of customization of our programs to meet their needs. Having noted that, there are common elements that show up in almost all of our creative thinking programs.

The fundamental elements of our programs include (note: these are not the four keys that enhance stickability – those are presented and described later):

- 1) Generating ideas and evaluating ideas;
- 2) A range of divergent thinking tools;
- 3) Various convergent thinking tools; and
- 4) A discussion of cognitive skills and reactions that impact creative thinking and judgment.

For programs lasting longer than one day, we add to that mix:

- 5) A variation on the Osborn-Parnes Creative problem solving process that we refer to as the Plain Language Version of Creative Process (Miller, Vehar & Firestien, 2004; Osborn 1993; Parnes 1992). The stages in this version of the Creative Problem Solving (CPS) process are:
  - a. Identify Goal/Wish or Challenge;
  - b. Gather Data;
  - c. Clarify the Problem;
  - d. Generate ideas;
  - e. Select and Strengthen Solutions; and
  - f. Plan for Action.

### How do we know what works?

So, in all those years of teaching, what have *we* learned? And how have we learned it? We answer the second question first by focusing on what we have learned from research (our own and others), as well as from formal and informal participant feedback.

Kirkpatrick (1967) noted four levels of evaluation of training:

- Level 1: *Reaction*. How well did the participants like the program?
- Level 2: *Learning*. What principles, facts, and techniques were learned?
- Level 3: *Behavior*. What changes in job behavior resulted from the program?

- Level 4: *Results*. What were the tangible results of the program in terms of reduced cost, improved quality, improved quantity, etc.?

Impact research focused on creative thinking and creative problem solving programs offers us levels two and three, plus less common level four evaluation (Firestien 1990; Firestien & McCowan 1988; Keller-Mathers 1990; Miller 1992; Neilson 1990; Puccio, Firestien, Coyle & Masucci, 2006; Reid, 1997; Vehar, 1994; Vehar, Doebler & Eckert 2000). In addition to published research, there are unpublished proprietary impact studies for companies ranging from large publishing companies to large consulting firms. In the majority of our courses, we also administer feedback forms asking participants to provide a level one evaluation of the components of the course as well as various aspects of the entire program both quantitatively and qualitatively. As additional anecdotal evidence, we also regularly receive feedback from participants about the aspects of courses that they find to be particularly impactful. This feedback takes the form of conversations, phone calls, emails, and letters. All of these items are used to address a common research question that has been under discussion for as long as we've been working together which is, "how might we improve the stickability of our programs?" In other words, how might we increase the likelihood that the participants will remember and apply what they have learned?

The authors have undertaken regular discussions over the past fifteen years, both formal and informal explorations of the fundamental principles of our work. While working together and separately, we have come to a shared conclusion that there are four key principles responsible for most of the value of a training program in creative thinking, whether that course lasts for an hour, a day, a week, or a semester. The purpose of this paper is to discuss these four principles and to provide examples of their impact in various organizations. This is not meant to be an exhaustive study of impact, but rather reflects the culmination of years of working with groups to help them think more creatively.

### **The Four Key Principles of Creative Thinking**

Here are the four key principles. While we focus on many elements during a training program, we often begin and end a program by focusing on these four:

- 1) Phrase problems as questions, using statement starters, or what Parnes (1981) called, "invitational stems," such as, "How to...", "How might...", "In what ways might..." and "What might be all the..."
- 2) To get good ideas, generate a lot of ideas.
- 3) Evaluate all ideas positively with Praise First: POINT.
- 4) Take personal responsibility for your own creativity.

In the pages that follow, each of these four principles will be explained in more depth, along with anecdotal stories that reflect their application in the workplace.

## Phrase problems as questions

The first of the core principles is a key component of the “Clarify the Problem” or “Problem-finding” stage of Osborn-Parnes Creative Problem Solving and its many variations (Miller, et al, 2004; Parnes, 1981). What is a slight, yet specific, use of language in CPS — phrasing a problem or obstacle in the form of a question — in practice beyond the process becomes a fundamental shift in the way in which we approach challenges. More than just a technique, it operates in a way that requires people to shift from viewing something as a limitation, or something that can’t be done, into an inquiry in how something might be done. (Eckert & Vehar 2007; Miller, et al., 2004; Osborn 1948)

Using this technique, one would take a problem such as “I don’t have any money,” and turn it into a question starting with one of four statement starters: “How to...” “How might...” “In what ways might...” or “What might be all the...” Examples of possible questions include:

- “How to obtain sponsorship?”
- “How might we lower the cost?”
- “In what ways might we reduce spending?”
- “What might be all the ways to get money?”

## Success stories: Phrasing problems as questions

At a large consumer products company, two direct-reports walked into the manager’s office and explained that because there was not enough money, the research that had been planned to have consumers taste and provide feedback on a particular product needed to be canceled. The senior manager listened to the assistant brand managers and applied the principle of phrasing problems as question by asking them, “How might we make sampling a reality?” Her two assistant brand managers stared blankly back at her and repeated that the vendor’s price was too high making the sampling impossible. So she rephrased her question as, “In what ways might we make the sampling a reality?”

This time, the managers understood what they were being asked. With the reframing of the challenge the managers began to see a new course of action. In minutes, the three had generated ideas for a solution that was ultimately successful with no increase in budget. What unlocked this situation for the senior manager was her ability to step back from the situation, to keep the overall objective in mind, and to start phrasing the problem with questions that invited solutions.

In another notable example, a chemist at another consumer products company solved a vexing 77-year old consumer problem by using the same approach. For more than seven decades scientists in the R&D department had tried and failed to fix a glitch that generated more than 50 percent of all consumer complaints on a popular product. The scientists and some colleagues spent more than a man-year trying to find their own solutions — until the chemist decided to apply a lesson learned in a creative thinking training session and challenge the accepted problem statement. In fifteen minutes he set up a crude experiment which, in two weeks, gave him the answer he and the company had pursued for so long.

## **To generate good ideas, generate a lot of ideas.**

One of the major contributions to the study of creative thinking made by Alex Osborn was an emphasis on generating a large number of ideas *before* selecting the best one to move forward, thus separating the generation from the evaluation phase of idea generation (Osborn, 1993). His four guidelines for brainstorming, or divergent thinking, emphasize a focus on quantity to generate quality. The research of Firestien and McCowan (1988) demonstrated the value of generating many ideas as a strategy to generate high quality ideas, along with the positive improvements in the communication behaviors of the participants. Most famously, Linus Pauling, the chemist who earned two Nobel prizes is quoted as saying, "If you want to have good ideas you must have many ideas" (cited in Crick, 1995).

During training programs, we emphasize many tools and techniques to help develop the skill of seeking a large quantity of ideas. We emphasize the point that Pauling made, and encourage participants to take this on not only as a deliberate technique, but also as an approach to generating solutions for the challenges they face.

### **Success stories: Generate a lot of ideas**

A Training Project Manager at a large daily newspaper facilitated a creative thinking session focused on how to develop a system to check the paper for accuracy before printing. That afternoon, after generating hundreds of ideas, the production team went back to the composing room and refined the ideas down to a comprehensive checklist. By using the list that very night, the team caught an error in a full page color advertisement that would have cost \$22,000 to fix. The manager noted that, "We made our money back on the first day!"

In another situation, the Director of Consumer Promotions at a consumer products company was assigned by her vice president to structure a division-wide brainstorming session for 300 people that would deliver millions of dollars in savings during the remaining months of 1998 and throughout 1999. Rather than sequester the cost cutting to the offices of a few high-level directors, the division took a vastly different approach. The director set up a day in which 29 teams generated ideas on the challenge. The thousands of ideas went through a feasibility screen manned by director-level managers whose job was to "reality check them." Even after a critical screening, the ideas totaled up to millions of dollars in potential savings. Unfortunately, the group fell short of its year-end target for 1998 since there wasn't enough time left in the year to implement them. But the 1999 cost cuts were a different story. The group more than doubled the targeted amount for 1999. Not only did the participants generate thousands of ideas, but the division, in one day, pocketed ideas worth millions of dollars in potential savings.

### **Evaluate ideas positively with Praise First: POINT**

The third key principle is that of evaluating all ideas positively. We specifically recommend a tool that we call Praise First: POINT. (Miller et al., 2004) POINT is an acronym that represents the four specific aspects that should be examined in each idea that is being evaluated:

- **Pluses:** what is good about the idea right now?

- Opportunities: what are the good things that might result if the idea were to be implemented?
- Issues: what are some of the issues, concerns or things that need to be improved about the idea?
- New thinking: for each of the significant issues, what are some new ideas that will overcome the issues identified?

While the concept of examining the advantages and disadvantages of an idea is hardly new, it was Synectics (1979) that identified Itemized Response as a systematic approach for evaluating ideas, and the work of Foucar-Szocki, Firestien and Shephard who first coined PPC (Pluses, Potentials and Concerns), an earlier version of Praise First: POINt (Firestien, 1996; Miller et al., 2004.)

### **Success stories: Evaluate ideas positively with Praise First: POINt**

An international consumer products company required a group of plant managers to attend a two-day creativity training. After the first day, the participants were given homework: to apply POINt to a work situation before coming to class the next morning. One seasoned plant manager shook her head saying, “I am not paid to be creative. My job is to run the plant efficiently and keep my workers safe.” She went on, “I don’t like new ideas. It’s just more work for me.” But she dutifully took on the homework assignment, and called a worker who was always offering new ideas. During their conversation, the plant manager forced herself to first reflect the positive aspects of the worker’s new idea and articulate what positive outcomes might happen if the idea was implemented. The next morning, she reported back to the class. “That idea is going to save my plant \$5000 a week!” She further admitted that if she hadn’t used POINt, she would never have had the patience to hear the idea through.

In another application, a peer in a meeting – not a manager or facilitator – shifted the way a group was evaluating ideas worth millions of dollars. A large pharmaceutical company created a governance committee to evaluate proposals from teams challenged to look for ways to speed both drug development or promising compounds and the decisions to stop development earlier on dead-end projects. A member of the committee noticed that his peers on the governance committee were reacting to each proposal by looking for what was wrong or weak with the idea. Finally, after noticing this pattern among his team members, he made a subtle intervention by asking the team to first look for the pluses. His peers agreed, and rather than killing the idea, worked through a process of searching for pluses, then opportunities and next identified issues, before turning it back to the team to fix the issues and then implement the solution. The idea was one that could save three days on drug development for any drug that made it to the three year mark in development, which equates to about \$3 million on each drug in development. One person we interviewed said that without the use of the Praise First: POINt technique, this solution was headed where all the other ideas headed: a binder on the shelf never to be implemented.

## Take personal responsibility for your own creativity

We used to hear people leave our training programs saying something like, “these are good tools and methods, but my boss/peers/direct-reports/etc. won’t let me be creative.” Or later we’d hear, “that was a good course, but no one’s using it on my team.” We interpreted this to mean that there was a lack of responsibility being taken for implementing the course learnings, in spite of the fact that the organization, and in some cases the participants themselves, were paying good money for, and spending valuable time in, the training. The principle of taking personal responsibility for creativity is an invitation to people not to wait around, but rather to make it happen on their own at whatever level they can manage.

Frankl (1984) pointed out the importance of choosing one’s own attitude to make a difference, and this is what participants are directly asked to do. Neilsen (1990) and Keller-Mathers (1990) pointed out the need for this in their impact research and Vehar (1994) pointed in this direction as well. We knew that this course could change the way that an organization works, and we’d also heard from people through the years that the course and the content changed their lives. What was notable about those whose lives were changed is that they took the responsibility to implement what they had learned.

## Success Stories: Take personal responsibility for your own creativity

At a large multi-national corporation’s R&D facility, a mid-level member of the organization took on the responsibility to share these key principles with other members of her team who had not attended the training. She specifically mentioned the need to take personal responsibility for improving the climate for innovation and communication on the team, which fostered excitement and numerous conversations about ideas for implementation, many of which were subsequently implemented. To keep these conversations energized, she created an ongoing support group that sent out weekly reminders of the tools and mental attitudes to drive innovation.

A large publishing organization conducted a week-long executive leadership program that focused on having participants craft real solutions to difficult organizational challenges. One participant, an assistant corporate counsel, was charged with working on organizational diversity. During dinner early in the week, he confided to one of us a grave concern: that if, at the end of the week, he presented to the Chairman of the company what he *really* needed to hear, it might spell the end of his career. We discussed the need for personal responsibility around creativity. The next day, the participant reported that he was going to tell the Chairman the difficult news and propose the challenging solutions that needed to be heard. Plus, he had already called the Chairman to tell him who else among the executive team needed to attend his presentation at the end of the week. The participant was subsequently promoted in the organization, and two weeks after the presentation, on the front page of *the Wall Street Journal*, the Chairman was quoted talking about the importance of the company changing and improving their diversity efforts in order to be more competitive.

**Recommendations:**

We are strong advocates of helping people remember these four items by repeating them often in our programs, by using posters that focus on these items, by giving away reminder cards that people can keep handy, and by reinforcing the principles in follow-up newsletters.

We believe that focusing on these four principles, rather than every page in the manual, allows for the most effective transfer of learning. While other items in the course build on and enable the principles, the four key principles are the foundation on which the courses – and their ultimate impact – are based.

As people who enjoy generating ideas and are always finding new things to add to our presentations, we regularly have to remind each other that, “less is more.” That’s why we focus on the four key principles that after a half, full, or two-day training program we want people to really remember and apply. These things will create the most value, and are worth of remembering.

**Conclusion:**

While these four key principles seem fairly basic, they are quite profound. In the words of Etienne Verber, the former President of Nutra-Sweet, “a lot of this stuff seems basic, but the fact is, when you apply the principles again and again, the results are amazing” (Schoen, 2000). In our collective experience, we believe the four keys reflect the Pareto principle that: 80% of the value comes from 20% of the course (Retrieved April 8, 2008 <http://www.gassner.co.il/pareto/>). Which is not to say that the other 80% of the course is worthless, but in fact reinforces the four key principles. The balance of the course content serves to provide additional tools and techniques that aid these four principles such as: 1) ways to help determine what are other questions that frame the problem, 2) tools for generating more ideas, 3) techniques for searching for the value of new ideas, and 4) ways to help people in their efforts to apply their creativity.

These four keys are also immediately implementable. They do not require additional time, money, authority, staffing, or a change in context. These are all suggestions that can be applied in all types of situations, from the second that the course is over to many years down the road as principles to guide life-long development.

Yes, the principles seem easy to understand, perhaps harder to apply. Is it possible to teach these principles in five minutes? Yes. However, it takes considerably longer to help people move from cognitive understanding to habitual practice. We should know, we are still working at it.

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### **About the authors:**

Jonathan Vehar is President and Cofounder of New & Improved, an organizational development firm focused on the people skills for innovation. Organizations that have benefited from his expertise include: Disney; GE; Johnson & Johnson; McDonalds; Pfizer; Texas Instruments, and the US Government. *Investor's Business Daily* calls Jonathan an "Innovation Guru" and he has written extensively about innovation and creative thinking. He is an adjunct professor at Northwestern University and SUNY Buffalo State College.

Blair Miller is a partner of New & Improved, LLC, and president of Blair Miller & Associates, a consulting / training firm that helps organizations deliver on goals of creative leadership and innovation. Currently on the adjunct faculty at SUNY Buffalo State College, he has also served as a guest instructor, teaching on creativity at MBA programs, including Kellogg School of Management, University of Chicago, and Emory University. Blair has authored publications on creativity and innovation. He is publisher of *FourSight: The Breakthrough Thinking Profile*.

Bob Eckert is CEO and Cofounder of New & Improved, an organizational development firm helping individuals and organizations achieve growth through innovation. He serves organizations across the world in every business sector including governments and human service organizations. A skilled trainer and facilitator, Bob is the author of numerous books and articles focused on advancing human performance. Associated Press International describes Bob as a "Speaker with evangelical fervor" in the area of strengthening human potential.

Roger Firestien, PhD., is President of Innovation Resources, Inc., and delivers programs in creative thinking and problem solving. His clients include AT&T, Disney, GE, General Mills, Merck, UBS and the federal government. Roger is an adjunct faculty member at the International Center for Studies in Creativity at Buffalo State College, and he is the author of over 70 articles, books, audio and video programs. His research focuses on how to help groups develop creative solutions more productively.

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