

How Creativity Relevant Attitudes Trigger Behaviors, Skills and Performance

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ABSTRACT

Creativity is a critical organizational success factor requiring skilled creative behaviors. Specific measurable creative attitudes trigger such behaviors and contribute directly to creative performance. Organizations truly desiring to incorporate creativity permanently into their culture can follow empirically supported mechanisms by which these attitudes can be deliberately developed.

PRESS PARAGRAPH

According to new research, organizations can now deliberately incorporate creativity into their cultures as an everyday way of life rather than just talk about it. Innovative organizations excel at both efficiency and creativity. Unfortunately, however, many organizations excel only in efficiency. Our research found evidence of the crucial role played by employee creativity attitudes, in terms of both triggering employee creative behaviors and organizational creative performance. Considering the increasing importance of creativity in the current global economic environment, developing and internalizing employee attitudes towards creativity is critical for organizations seeking to develop and maintain their competitive advantage.

How Creativity Relevant Attitudes Trigger Behaviors, Skills and Performance

Introduction

Today's global economy requires organizations to be capable of creatively adapting to changing times. Beyond simply paying lip service to creativity (Kriegesmann, Kley, Schwering, 2005; Stein, 1991), effective organizations truly recognize its importance and develop positive attitudes toward it. Effective organizations are simultaneously efficient and creative (Mott, 1972). Efficient organizations follow well-structured, stable routines to deliver products or services in high quantities with high quality and at low cost. They react quickly to unexpected turns of events to maintain routines with minimal disruption. In a stable world, efficient organizations may be successful. But in a changing world, organizations also need creativity as an ongoing process.

While organizational efficiency implies mastering routine, organizational creativity requires mastering the process of deliberately changing routine. Organizational creativity is a proactive process: it allows the organization to deliberately and continually change and adapt. It entails deliberate discontent – discovering new problems to solve and adopting new technologies and methods before anyone else. Creative organizations anticipate problems and opportunities, and develop timely solutions and new routines. The people in such organizations have a positive mindset, which includes positive attitudes toward creativity and creative work. They accept new ideas and solutions promptly and the acceptance is prevalent across the entire organization. This paper focuses on how attitudinal factors contribute to organizational creativity, and how

organizations can deliberately incorporate creativity into their culture, rather than just talk about it.

Organizational creativity as a process requiring positive attitudes

Organizational creativity can be portrayed as a continuous, dynamic, circular three-phase process of finding good problems, solving them and implementing good solutions (Basadur, 1992; see Figure 1).

[Insert Figure 1 about here]

Creative organizations demonstrate a positive attitude towards problems. In the creative process of Figure 1, problems are proactively sought out as opportunities for innovation and improvement. As solutions are implemented, new problems or opportunities are discovered.

Thus, a positive mindset towards creativity begins with a positive attitude towards problem finding, meaning the behavior of continuously and deliberately discovering and formulating new and useful problems to be solved. In organizations, this includes anticipating new customer needs to generate new products or services, or improve existing products, services, procedures and processes. On the other hand, problem solving means developing new, useful, imaginative solutions to these problems. Solution implementing means implementing such new solutions for successful change. Each implemented solution leads to new, useful problems to be discovered - hence the circular process. Research shows that effective organizations make such a process an everyday habit among members both for continuous innovation and for intrinsic motivation ((Basadur, 1994; 1997).

Research on creativity attitudes

Studying creativity can be difficult and complex (Besemer and O'Quin, 1999), partly because there is no single agreed upon definition of creativity. As well, creativity is multi-faceted, with many factors (personal, social and environmental) contributing to its development and expression (Runco, 1993). While there is no lack of theorizing about attitudes associated with creativity, there has been only a small amount of empirical research attempting to operationalize these theories (Plucker and Renzulli, 1999; Puccio, Firestien, Coyle and Masucci, 2006; Plucker, Beghetto and Dow, 2004; Rank, Pace and Frese, 2004; Shalley and Gilson, 2004; Shalley, Zhou and Oldham, 2004). Those few empirical studies can be divided into two different levels of analysis: macro (organizational level) and micro (individual level).

Macro level creativity attitude research

Macro level research on attitudes towards creativity can be categorized as being either “attitudes toward change” (Neal, 1965) or “attitudes towards creativity” (Basadur, Graen and Green, 1982). A variety of measures of personality orientation towards change have been developed to understand the roles various groups play in an organization's adoption of change initiatives. For example, managerial attitudes towards change have been positively related to organizational innovation (Damanpour, 1991).

Various conceptual models have been offered explaining how attitudes play important roles in creativity. Some have argued that negative attitudes suppress creativity but positive attitude adjustments can enhance it (Brennan and Dooley, 2005). Thus organizational processes encouraging positive attitudes towards creativity would be expected to lead to greater engagement in creative activities and organization-wide creative performance. Some have proposed that a can-do attitude in an organization's

employees during crisis situations is a key factor determining whether or not executives adopt a crisis-as-opportunity mindset, and in turn perceive the opportunity presented in the crisis as attainable (Brockner and James, 2008).

Basadur and Hausdorf (1996) and Basadur, Taggar and Pringle (1999) conducted a macro level empirical field research program and developed scales to measure three emerging variables: the extent to which employees value new ideas, see creativity as not just for a select few, and feel they have time for new ideas. These measures provide an opportunity for innovation-minded managers to enhance creative behavior among staff by nurturing and developing specific positive attitudes.

Micro level creativity attitude research: Creative attitudes are needed to make the creative process work

The role of attitudes in creativity must also be understood at the individual level. At the end of the day, creativity is something that a person (or team) actually does. Creative behaviors produce creative results. Therefore, mechanisms which trigger or develop creative behaviors are essential to achieving ongoing organizational creativity. In the sections below, empirical evidence is presented that creative attitudes open the doors to, and trigger, such creative behaviors and results. The important linkage between attitudes and behaviors in creativity was first identified in field research by Basadur et al, (1982) They tested the effect of providing training in a complete process of problem solving, rather than simply having participants apply the technique of brainstorming. Most previous research had tested brainstorming, a thinking tool used for the first half of a two-step thinking process labeled ideation-evaluation (see Figure 2). The ideation-

evaluation process is the deliberate separation of non-judgmental, divergent thinking from judgmental, convergent thinking. The latter is delayed until the former has had ample opportunity to be developed. The emphasis is on doing both kinds of thinking, but separating the two. It is the deliberate use of both ideation and evaluation in a skilled, disciplined way.

[Insert Figure 2 about here]

The research by Basadur et al (1982) focused on providing intensive training within an applied setting. The complete process trained, called Simplex, is described below and can be represented as eight ideation-evaluation steps within the four stages of Figure 3. The problem-finding phase of Figure 1 is comprised of two stages -- problem generating and problem formulating (see Basadur, Graen and Wakabayashi (1990) and Basadur and Basadur (2009) – and the process is a circular, continuous, four-stage process of generating, conceptualizing (formulating), solving and implementing. The research systematically measured the impact of creative problem-solving training on individuals both immediately after training and after return to work.

[Insert Figure 3 about here]

Ideation-evaluation occurs as a mini-process within each of the eight steps of the Simplex process. Ideation, or active divergence, is the generation of options, deferring judgment. Evaluation, or active convergence, is the application of judgment to the generated options to select the most significant. Separating ideation from evaluation is a vital behavioral aspect of this two-step mini-process. The training was expected to improve five variables: (a) acceptance of the ideation-evaluation mini-process; (b) deliberate practice of the mini-process; (c) problem-finding performance; (d) problem-solving performance; and (e) solution implementation performance. The first of these

five variables is attitudinal, while the second is behavioral. The researchers suggested that these two attitudinal and behavioral variables were necessary antecedents of the three performance variables. Without a positive change in attitudes and behaviors -- motivating participants to separate divergent and convergent thinking and to deliberately apply divergent thinking -- training would not improve performance. The research measured the extent to which a change in acceptance of (attitude) and practice of (behavior) ideation-evaluation could be achieved through training, and the extent to which it could result in a change in performance. The expected training effects are modeled in Figure 4 as a starting point theoretical model to explain how training increases organizational creativity.

[Insert Figure 4 about here]

This model postulates that, in order to achieve meaningful increases in problem finding, problem solving, or solution implementation performance and organizational results, the impact of training must be sufficient to increase acceptance (attitudes) and practice (behaviors) of the ideation-evaluation process. A premise underlying the training was that, for most people, the ideation step is more difficult than the evaluation step. Our society, including our school systems, tends to reward and hone our evaluation capabilities and promote their use virtually to the exclusion of ideation (Doktor, 1970).

Research participants were drawn from the engineering department of a large consumer goods industrial company. Two days of intensive training in the creative problem solving process depicted in Figure 3 was primarily experiential and practice oriented and included a series of diverse tasks encouraging participants to discover concepts not considered before, such as ideation-evaluation and the value of both

divergence and convergence in thinking. The training was applied to real-world problems, with each person generating a work problem, then developing a solution and implementation plan. These processes encouraged transference of creativity concepts to personal frames of reference. Within the design, delayed measures were constructed to reflect attitudinal and behavioral changes transported back to the regular work setting.

The results supported the model in Figure 4. Compared to a control group, the experimental training group achieved significant increases in the acceptance and practice of ideation-evaluation and also in the performance variables measured. Multiple method measures, including on-the-job observation, demonstrated that employees made gains in attitudes and behaviors and were seen to be more open-minded and positive to new ideas, approaches and products, as well as less prone to negative evaluation during idea generation. The model is primarily useful for identifying the key constructs that must be affected in order for training to succeed. In summary, the research suggested that unless attitudes toward divergent thinking are positive or become positive, divergent thinking as a behavior is not likely to be practiced on the job.

Development of micro level creativity attitude measures

In field research, Basadur and Finkbeiner (1985) more precisely modeled how divergent thinking attitudes enhance divergent (ideation) thinking behaviors and skills. They measured two specific attitudes that indicate acceptance of ideation-evaluation: (1) the tendency to (not) evaluate prematurely (preference for deferral of judgment) and (2) the preference for ideation (active divergence), and suggested that these two attitudes enhance and encourage the practice of the two corresponding behavioral skills.

Encouraging active divergence leads to generation of more options and deliberate development of many points of view. Encouraging avoidance of premature convergence reduces the urge to prematurely judge or analyze fledgling thoughts. They also suggested that a low tendency toward premature convergence would trigger a high preference for active divergence. That is, the former, more passive attitude is a prerequisite trigger for the latter, more active attitude. When people become skilled in reducing premature convergence and increasing active divergence, they create more, higher-quality options. These two measures of the acceptance attitudes are used in various ways in the research reported in this paper as explained later. The work is modeled in Figure 5 below.

[Insert Figure 5 about here]

Multi-dimensional creativity attitudes

Basadur et al (1982) also provided evidence that acceptance and practice of ideation-evaluation are likely multidimensional. One's attitudes (and behaviors) in applying the ideation-evaluation mini-process likely differ in the problem finding, problem solving and solution implementation phases of Figure 1. Thus, six new antecedent variables replaced the two antecedent variables in Figure 4. The attitudinal antecedents were labeled acceptance of ideation-evaluation in problem finding, acceptance of ideation-evaluation in problem solving, acceptance of ideation-evaluation in solution implementation. Similarly, the behavioral antecedents were labeled "practice of ideation-evaluation in problem finding", in problem solving, and in solution implementation. The revised model of training effects is shown in Figure 6 which suggests that changes in acceptance of (attitude), and practice of (behavior) ideation-evaluation in each of problem-finding, problem-solving, and solution implementation are

necessary antecedents to corresponding changes in performance.

[Insert Figure 6 about here]

Optimal ideation-evaluation attitudinal ratios

Basadur (1995) established that the relative contributions of ideation and evaluation in the three phases of the process of Figure 1 probably differ by field of organizational endeavor. People working in fields favoring problem finding were found to have higher ideation-evaluation (I/E) preference ratios than those working in fields favoring problem solving and solution implementation. People working in fields favoring problem solving had higher I/E preference ratios than those working in fields favoring solution implementation. For example, in manufacturing, characterized by short-term, clear-cut activities leading to action within specific time limits, participants favored an evaluational, converging approach over an ideational, diverging approach. In contrast, participants working in environments such as pure research, in which time is a less limiting factor, and action is secondary to understanding, favored a diverging approach over a converging approach. Between these two extremes were various fields in which, based on problem finding already done by others, one develops solutions for others to implement. Here, moderate time limits for action exist, and favor diverging and converging about equally. This would be a problem solving field of endeavor and would include administrative or marketing jobs (see Figure 7).

[Insert Figure 7 about here]

Changing creativity attitudes

Commonly-held negative attitudes toward creativity, divergent thinking, and new ideas (Shore, 1980) often result in employees with more creative attitudes being viewed

with mistrust and negativity by others, and encountering greater difficulty in having ideas accepted (Kirton, 1976). Without improvements in these attitudes, efforts to increase creativity may ultimately be fruitless. Basadur, Graen and Scandura (1986) provided training in the Simplex complete process of creative problem solving (Figure 3) to manufacturing engineers, whose structured, implementation-oriented work environment would be expected to make them particularly negative toward divergent thinking and creativity. The study attempted to determine the extent to which the training (as a persuasive communication attempt) was able to effect changes in attitudes and the subsequent ability to incorporate creativity into the repertoire of job-related skills. The research focused on the two attitudes toward divergent thinking identified by Basadur and Finkbeiner (1985): preference for ideation (active divergence), and tendency to make premature critical evaluations of ideas (premature convergence). A person with a high preference for ideation (active divergence) in problem solving would likely find value in generating novel and varied solutions, considering multiple points of view and using initial solution suggestions as stepping stones to additional solution possibilities. A person with a high tendency to make premature critical evaluations of ideas (premature convergence) in problem solving would be quick to find flaws in proposed solutions, would dislike wasting time with apparently nonproductive trains of thought, would feel each solution generated ought to be evaluated sequentially before proceeding to the next one, and would prefer to optimize on one solution rather than explore multiple options.

The researchers hypothesized that training in the Simplex process would lead to an increase in preference for ideation (active divergence) and a decrease in the tendency

to make premature critical evaluations of ideas (premature convergence) in measurements taken five weeks after the training. The engineers were either trained as part of an intact work group or with other employees from various work units throughout the organization. The final results saw both measured attitudes showing positive change after five weeks for the engineers trained in the intact works groups. However, the diffuse work groups showed statistically positive change in only the tendency to make premature critical evaluations of ideas. Furthermore, there was some evidence of erosion of even that gain after 10 weeks. Based on these results, it is possible that the engineers trained in intact work groups returned to their jobs along with others who had participated in the training and received peer support for divergent thinking in problem solving. In contrast, engineers in the diffuse work-group returned to various work units throughout the organization and found less peer support for divergent thinking attitudes. The study showed that appropriate training can result in positive effects even in populations whose attitudes may be difficult to change, and that the use of intact work groups may enhance the impact of training.

A later experiment (Basadur, Wakabayashi and Graen, 1990) found that similar training was successful in affecting divergent attitudes in a wide range of employees. It also found that individuals with a natural preference for developing optimal solutions, as opposed to discovering new problems or playing with ideas, experienced significantly greater gains in attitudinal preference for active divergence following training.

Cross-cultural research on creativity attitude change

Research into the impact of training on creativity attitudes and results has shown that it can offer the same successes with Japanese and South American managers as previously demonstrated with North American managers (Basadur, Wakabayashi and Takai, 1992; Basadur, Pringle and Kirkland, 2002). However, cultural factors can clearly have an impact on creativity attitudes. For example, the impact of training on the active divergence attitudes of Japanese managers was particularly strong. It's possible that the value placed on harmony and consensus-style decision making in a typical Japanese corporation leads to a greater acceptance of the notion of avoiding premature judgment of others' ideas. This aspect of creative problem-solving training might be more compatible with their corporate culture than the process of actively diverging. In contrast, especially strong cultural forces may act against out-rightly favoring active divergence on the job, since Japan is a shame culture. In order to save one's face and maintain personal security, one may try to avoid such thinking in particular. Impactful training in creative problem solving could have an especially high potential for improving attitudes toward active divergence under the consensus-and-harmony-oriented Japanese business culture.

Linking creativity attitudes, behaviors and skills in a causal model

Additional research (Runco and Basadur, 1990) has demonstrated that training using a Simplex process significantly improves participants' evaluative skills, and those evaluative skills correlate positively with ideational skills. This result is consistent with Runco and Vega's (1990) theory that individuals with high ideational abilities have more opportunity to exercise evaluative skills. Basadur, Runco and Vega (2000) found that the attitude of preference for avoiding premature convergence (deferring judgment) triggers

the attitude of preference for active divergence. More importantly, this attitude of accepting deferred judgment is the more powerful attitude, and is significantly associated with the ideational and evaluational skill variables in Figure 8. Increasing the preference for avoiding premature convergence encourages ideational skill in terms of quantity of ideas generated, which in turn translates directly into increased ideational skill in terms of quality of ideas generated and into evaluation skill in terms of more accurately recognizing lower quality ideas. The increased skill in ideation quality then translates directly to increased evaluation skill in terms of recognizing higher quality ideas.

[Insert Figure 8 about here]

Thus, the key appears to be the attitude of deferring judgment which triggers ideational skill in quantity of ideas generated. This skill, in turn, is strongly related to ideational skill in quality of ideas generated and also to evaluational skills. Interestingly, the increased preference for active divergence, which is triggered by the increased preference for deferral of judgment (avoiding premature convergence) did not play a direct role in enhancing ideational and evaluational skills. However, the possibility of an indirect role remains and raises the possibility of a moderating relationship that could be explored in further research. Additional research ideas follow below.

Future research

There is ample opportunity for enterprising researchers to further understand the impact attitudes have on creativity at the individual, team and organizational levels while also providing real value to organizations willing to participate in empirical research. For example, the model in Figure 6 invites increased investigation of attitudes in the

problem finding and solution implementing stages of the creative process. Also, no empirical testing has yet been done on the relationship between attitudes towards creativity and personality characteristics such as openness to experience and agreeableness. Finally, extending the cross-cultural research to additional important regions such as China and the Middle East would be most appropriate in our rapidly evolving world.

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Figure 1: Organizational Creativity as a Process

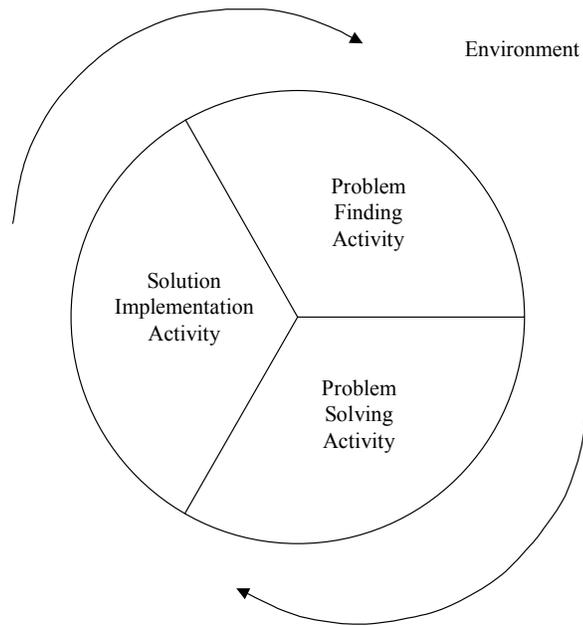


Figure 2

Ideation-Evaluation: A Sequential Two-Step Creative Thinking Mini-Process

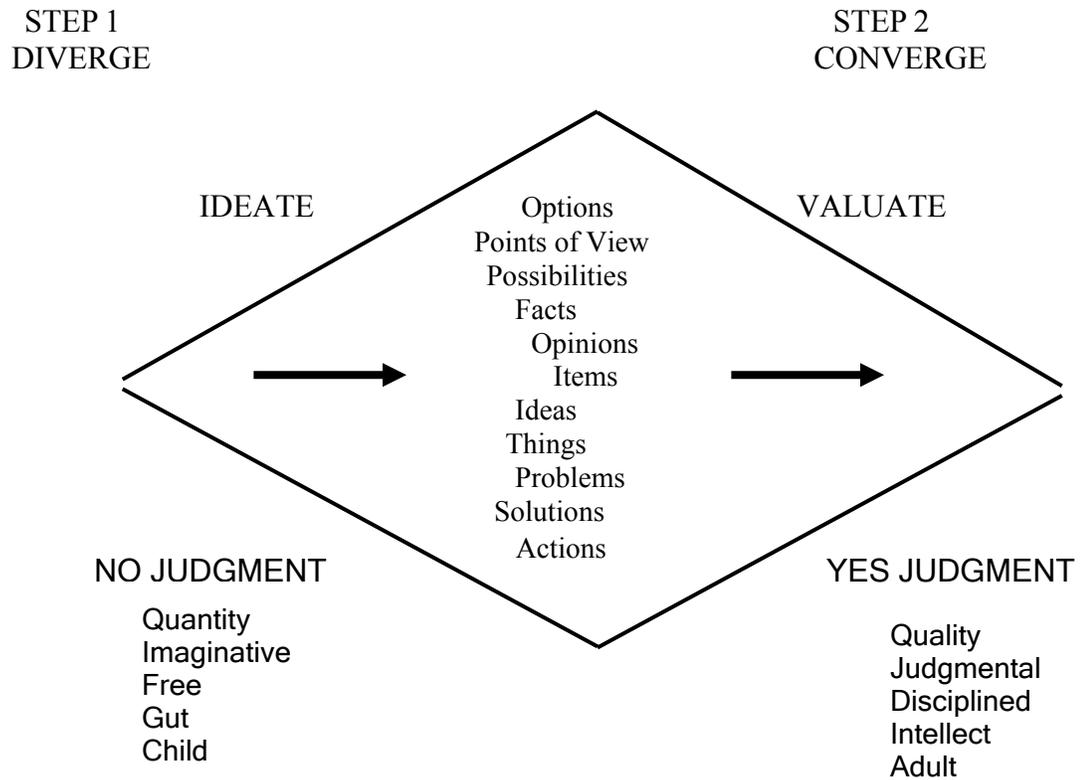


Figure 3

The Simplex Creative Process as a Whole

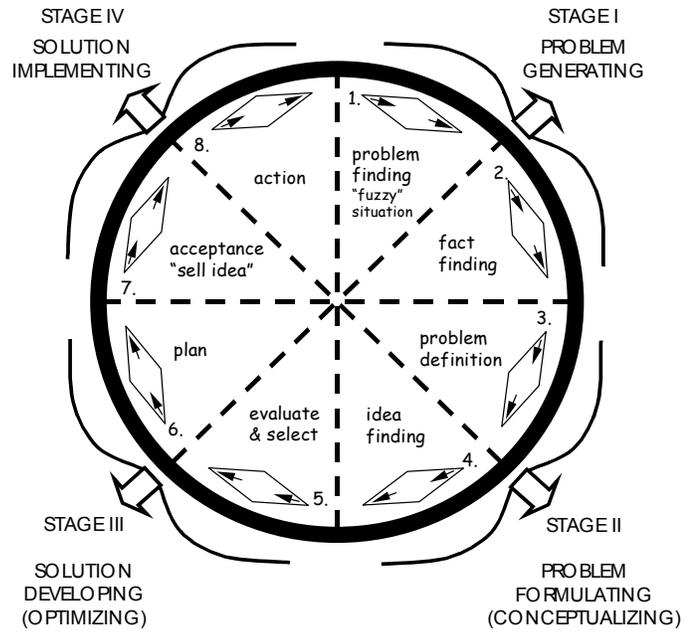


Figure 4
Effects of Simplex Training on Attitudes, Behaviors and Performance

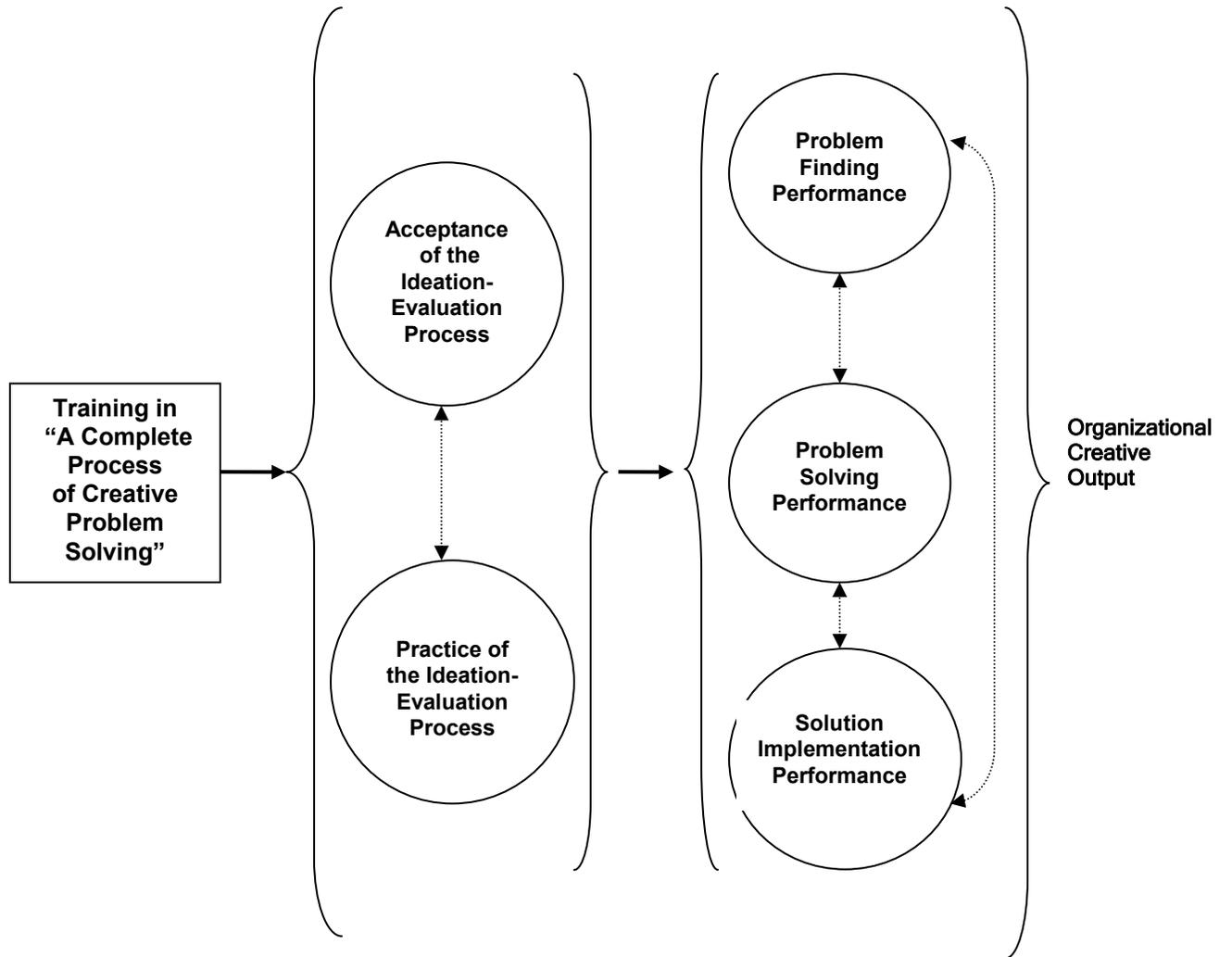


Figure 5
Speculative Model of Creative Problem-Solving Training Differentiating
Between “Ideation Freeing” and “Ideation Triggering”

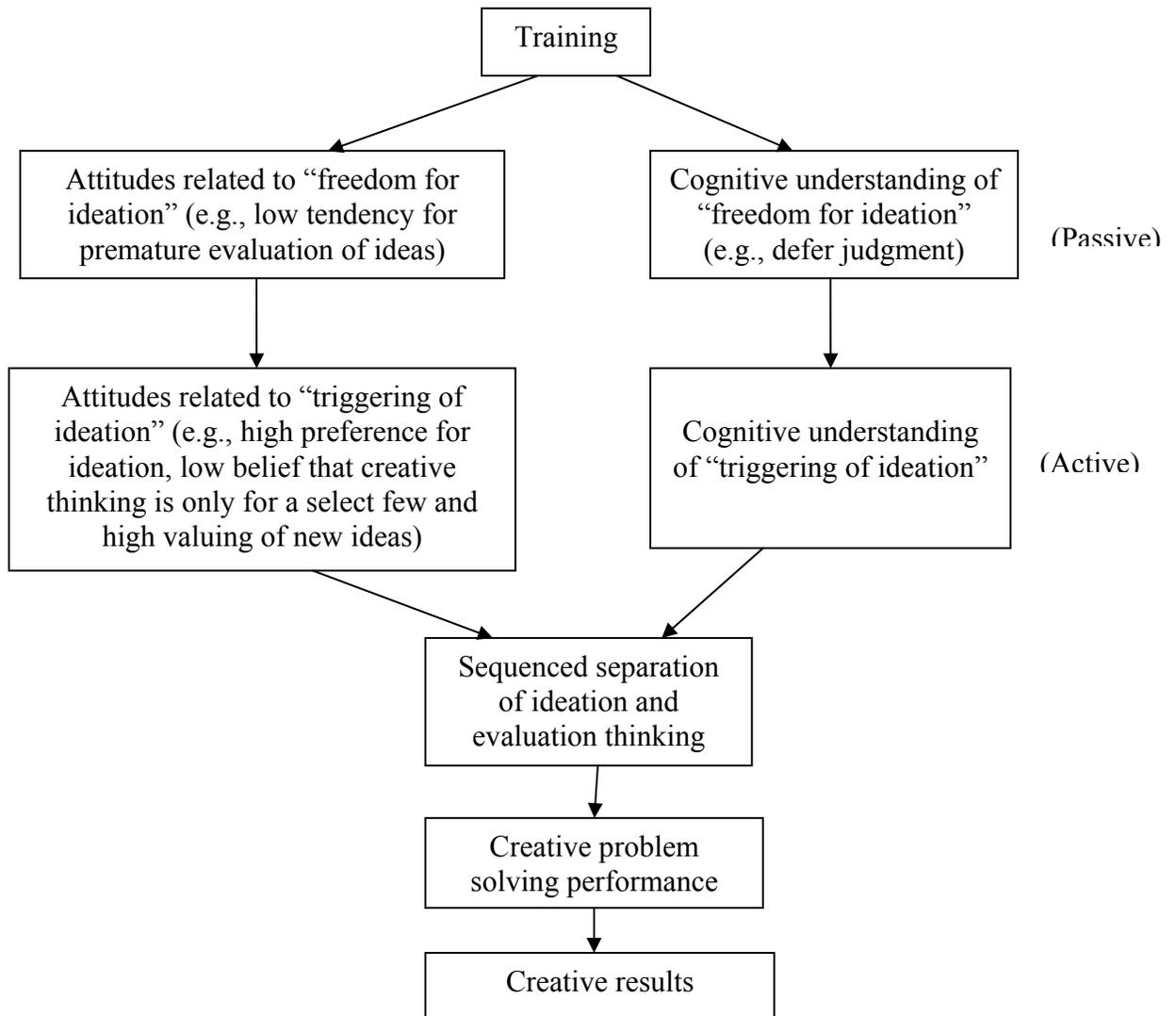


Figure 6
Revised Model for Training Creative Behavior in an Organization

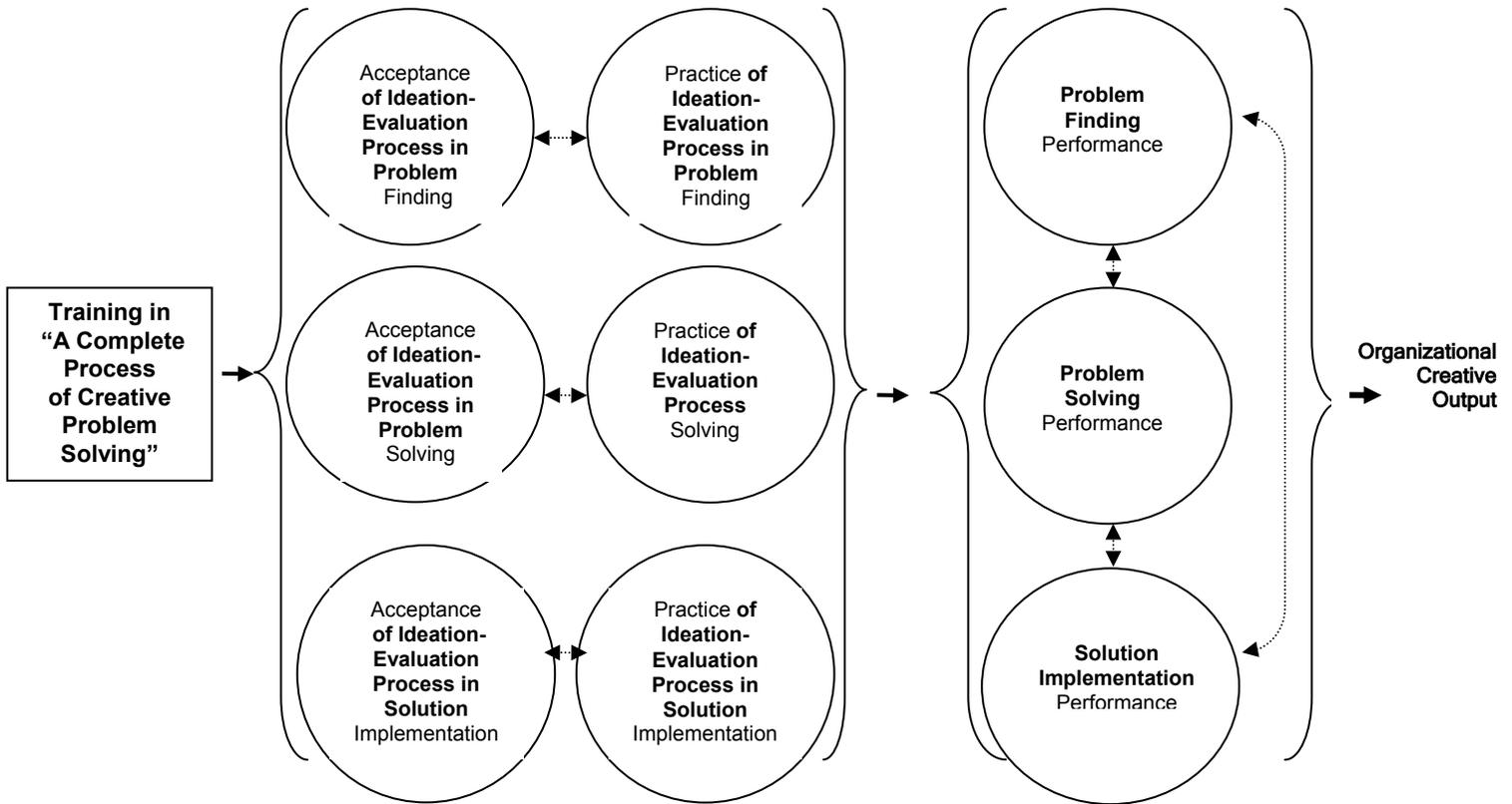
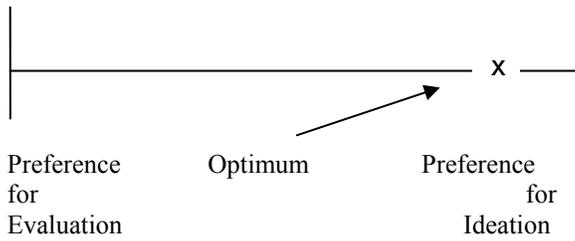


Figure 7

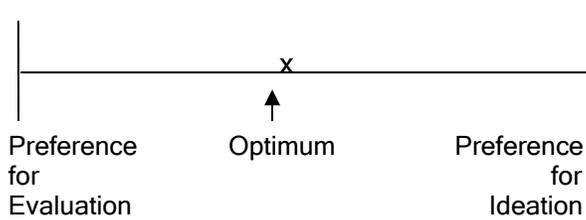
**Different Optimal Ideation-Evaluation
Attitudinal Preference Ratios for Different Fields of Endeavor**

Field of Endeavor

Emphasis: Problem Finding)
(e.g., Pure Research)



Emphasis: Problem Solving
(e.g., Applied Research)



Emphasis: Solution Implementation
(e.g., Manufacturing)

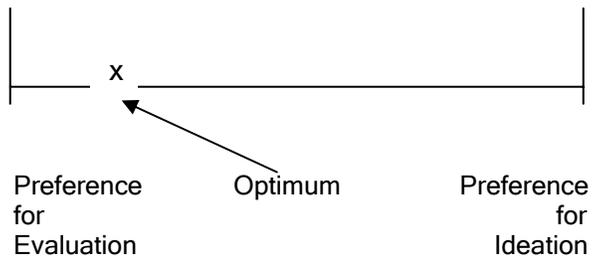


FIGURE 8
A Causal Model:
How Attitudes Trigger Ideational and Evaluational Skills

