
Training Effects on the Divergent Thinking Attitudes of Japanese Managers

Min Basadur
McMaster University

Mitsuru Wakabayashi
Nagoya University

Jiro Takai
Nagoya City University

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MCMMASTER
• UNIVERSITY •

MICHAEL G. DeGROOTE
SCHOOL OF BUSINESS

1280 Main Street West,
Hamilton, Ontario, Canada
L8S 4M4

TRAINING EFFECTS ON THE DIVERGENT THINKING ATTITUDES OF JAPANESE MANAGERS

MIN BASADUR

McMaster University

MITSURU WAKABAYASHI

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JIRO TAKAI

Nagoya City University

ABSTRACT. A field experiment made a preliminary investigation of the effects of training Japanese managers in creative problem solving. Two attitudes associated with divergent thinking practice (an important aspect of creative problem solving) were measured before and after training. This research establishes the Japanese translations of the two attitudinal measures. It also indicates that the applicability and receptivity of the paradigms and methods of the training provided may be at least as strong in Japanese business and industry as found in previous North American research. The experimental group ($n = 60$) showed significant gains on both measures versus two control groups. Compared to North American managers from similar studies, the Japanese managers appear to make at least equal gains after training. Future directions for research include extending the training effect investigation beyond attitude changes to include behavior changes and longer term persistence and portability to the job.

INTRODUCTION

Cross-cultural comparisons of creative thinking and problem solving have many applications in a global perspective on business. Thus far, there have been few studies offering data on the attitudes of Japanese managers toward creative thinking. This may, in part, have been due to a lack of opportunity for study in the past. As the world economy develops and cultural walls erode, there will be more opportunities and more need for cross-cultural studies. Though the walls may erode, individual cultures remain vital with the result that the ability to learn, understand, and

Reprint requests should be sent to Min Basadur, McMaster University, Michael G. DeGroot School of Business, 1280 Main Street West, Hamilton, Ontario Canada, L8S 4M4.

cooperate between cultures takes on greater importance. The research for this article involved a field experiment designed to act as a preliminary investigation of the effects of training Japanese managers in creative problem solving. Further investigation will be needed before the results can have an impact on the principles of business, but, even at this stage, the results are worth sharing in order to broaden the basis for future comparisons.

THE IMPORTANCE OF CREATIVE THINKING AND PROBLEM SOLVING IN ORGANIZATIONS

Creativity is a necessary requirement for organizational effectiveness. Mott's comparative research (1972) showed that effective organizations are simultaneously efficient and creative. Efficiency means optimizing, stabilizing, and polishing current methods (routines) to get highest quantity, quality, and customer satisfaction at the lowest cost possible. Organizational creativity means deliberately changing current methods to make new levels of quantity, quality, cost, and customer satisfaction possible. Both new methods and new products result from creativity.

Creativity can be developed, increased, and managed by organizations (Basadur, in press a, in press b). Specific results from increasing organizational creativity can be identified, including new products and methods, increased efficiency, greater motivation, job satisfaction, teamwork, focus on customer satisfaction, and more strategic thinking at all levels.

PRIMARY POINTS OF REFERENCE FOR THIS STUDY

Divergent thinking has long been credited with being an important aspect of creative thinking and problem solving (Guilford, 1967). Many researchers and practitioners in the field of creative problem solving use conceptual models that involve divergent thinking. (For a literature review, see Basadur, Graen, & Scandura, 1986; and Basadur, in press a). A field experiment in an industrial research organization found that appropriate practice-oriented training resulted in improvements in divergent thinking attitudes that accompanied improvements in divergent thinking practice and in creative performance (Basadur, Graen, & Green, 1982). This finding coincides with Kraut's (1976) training model suggesting a causal chain of attitude change leading to performance change. Basadur and Finkbeiner (1985) model how divergent thinking attitudes enhance divergent thinking skills. They also establish measures of two such attitudes. The two attitudes are called "preference for active divergence in problem solving" and "preference for premature convergence in problem solving."

Two later field experiments indicate that such training positively affects these two divergent-thinking attitudes in manufacturing engineers (Basadur et al., 1986) and in a broad cross-section of organizational members from various functions, hierarchical levels, and types of industries (Basadur, Wakabayashi, & Graen, 1990). There were indications that such training effects may persist at least five weeks back on the job and that effects were more consistent with intact work groups than with participants from diffuse locations.

The above research was conducted in North America, and this study extends that research into a different culture—in this case, that of Japan. The effects of providing the same training to a sample of Japanese managers on the same divergent thinking attitudes are explored. The study also reports reliability data for the Japanese translations of the scales used to measure these attitudes. This is the first time in which this particular training in creative problem solving has been provided to a Japanese sample and changes in these divergent thinking attitudes measured. This preliminary study focuses on measuring only immediate attitudinal changes and on establishing the Japanese translations of the attitudinal measures. Further research on behavioral and performance changes and longer term persistence would follow if encouraging results were found.

SECONDARY POINTS OF REFERENCE FOR THIS STUDY

The design and content of the training provided to the Japanese managers are described in the references cited above and in more depth in the Method section. In brief, the creative problem-solving process, as trained, has three different phases: problem *finding*, problem *solving*, and solution *implementation*. In *each* of these phases, a two-step thinking process called "ideation-evaluation" occurs. Ideation is the generation of options, different points of view, and perceptions of facts and ideas without any critical judgment or analysis. This constitutes the divergent aspect of the process. Evaluation, on the other hand, is the judging and selecting from these freely generated thoughts. This is the convergent aspect. These two opposite kinds of thinking skills are synchronized throughout the three phases. The training is geared toward practice rather than abstract discussion. Participants are trained to acquire skills in various techniques and processes of both divergent and convergent thinking. They practice synchronizing these two skills for hypothetical as well as real problems throughout the three phases noted above. A creative problem-solving process that takes into account both divergence and convergence as well as multiple phases, as described above, is called a "complete" process (Basadur et al., 1982; Parnes, Noller, & Biondi, 1977).

Two components of divergent thinking and creative problem-solving

performance are low premature convergence and high active divergence. Individuals who practice high active divergence aggressively generate large quantities of thoughts without regard to merit. They use previous thoughts (their own and others') as stepping stones to new ones. Individuals who practice low premature convergence keep an open mind and refrain from judging or analyzing fledgling thoughts too hastily (their own and others'). The attitudes of high preference for active divergence and low preference for premature convergence facilitate high active divergence and low premature convergence practice. How these two divergent thinking attitudes are measured is further described in the method section which follows.

CROSSING CULTURES

The literature suggests that the positive effects of the training process described above should also be of benefit in other cultures outside North America. One of the most important ways in which the training works is to overcome blocks to participants' divergent thinking attitudes and practices that have long been culturally conditioned into them. Such blocks work against the acceptance of divergent thinking and creative problem solving, not only in North America, but also elsewhere, including Japan. For example, most North Americans undergo educational and socialization processes in which they learn to value knowledge accumulation and converging processes more than knowledge creation and diverging processes (Mackinnon, 1962, 1977; Osborn, 1963; Thurstone, 1950; Wallach, 1971). Engineering university students, after completion of a 4-year academic program, were shown to lose ground in the ability to apply their imagination (Altemeyer, 1966; Doktor, 1970). Organizational norms also have a strong tendency to negate divergent thinking, creativity, and new ideas (Rickards, 1980; Shore, 1980). Kirton (1976) discovered that organizational members who produce and champion more innovative ideas are susceptible to negative perceptions by others because they cause apprehension and mistrust.

There is evidence that even the cultural aspects of whether one is viewed as a manager or as a nonmanager within an organization may impact one's divergent thinking in North America. Basadur, Graen, Takai, and Wakabayashi (1989) found that, compared to nonmanagers, managers, display less positive attitudes toward active divergence. This may indicate that those in higher organizational positions may be more conservative than those in lower positions because they cannot afford to appear too adventurous or to be thought of as a people who come up with new, unusual, "off-the-wall" ideas. Such behavior might be associated with a lack of seriousness or dedication to the job at hand and could label the individual a bad risk-taker or dreamer.

An example of the evidence that similar cultural processes need to be overcome in societies other than North America is provided by Von Glinow and Teagarden (1988), who cite Chinese cultural biases against dealing with uncertainty and favoring a compelling urge to obey rules. Divergent thinking favors exploring uncharted territory and doing things that break from past practice. Another example is that both the Japanese and Chinese cultures tend to discourage divergence, because Confucian cultural tradition, especially in Japan, works to impose early convergence or group harmony (consensus) as a preferred mode of communication and decision making (Whitehill & Takezawa, 1968; Rohlen, 1974; Alston, 1986). This cultural tradition among Japanese managers impedes them from being more divergent in group discussions and communication. The training in this study is intended to overcome this tradition and stimulate divergent thinking.

One of the most important attitudes and practices trained to achieve this increased divergence is that of deferring convergence and delaying critical evaluation of the thoughts and opinions of others (and also of one's own). The Japanese cultural bias of harmony and consensus should find this training paradigm reasonable and acceptable. The basic paradigm and the process of creative thinking that is fundamental to the training in this study could be applied in many different cultures. One should be cautious when ascribing a bias to a culture or when transposing studies across cultures and drawing conclusions that are out of context. In a loosely sympathetic culture, however, let us argue that attitudinal and cognitive skills of keeping an open mind, actively generating lots of fresh thoughts, and finding and solving problems and then implementing solutions to make things better are all activities with positive value. Future studies in Japan and in other countries should not, however, assume that any training is easily transferrable across cultures, even when it appears eminently reasonable to expect so. Each situation will present its own, potentially disruptive, variables. For example, Schneider (1988) suggests that multinational corporations must beware of assuming that human resource practices can easily be transferred to other cultures. Hofstede (1980, 1983) and Kedia and Bhaga (1988) identify and discuss several cultural traits that differentiate cultures and can mediate the successful transference of human resource technology from country to country.

JAPANESE SUCCESS AND CREATIVITY

Many people attribute the recent advances in productivity and economic success in Japan to differences in management culture and style vis-à-vis North America. One way that the Japanese do not seem to be culturally very different from North Americans, however, is in creativity. Far

from the outmoded view from the 1950s when the Japanese were viewed as mere imitators, they are now rightly seen as a powerful systematic blend of copier and creator. Alston (1986) points out that when faced with a successful competitor, the Japanese, like almost anyone else, will take apart the product (reverse engineering) and copy what seems useful. This, however, is only a first stage for the Japanese. Once a competitor's product is understood, the Japanese are capable of going beyond the original. The Japanese learned the basic techniques of quality control from Americans, but QC circles and zero-defect policies resulted in Japanese products that were better in quality than American goods. Today, through innovation, Japanese automotive design and robotics are equal or superior to North America's.

Copying is merely a short cut to the Japanese. The number and proportion of patents being awarded in America to the Japanese is on the increase. The U.S. patent office now issues about 10% of all patents to Japanese citizens. Thus, although the image of the Japanese as successful copiers is correct, this does not mean they cannot create. The Japanese study what is available and then decide which practices can be successfully adapted by Japanese workers and integrate them into their own unique methods. Furthermore, just as they have been very receptive to training in manufacturing methods to improve quality and achieve competitive edge (training that was developed in North America in the 1950s), it may well be that they will be very receptive to training in processes to improve creativity and innovation as a way to increase competitive edge in the 1990s.

With these arguments in mind, the authors developed the hypothesis that Japanese managers would respond similarly to their North American counterparts. Although a complete comparative study is not proposed, it is hypothesized that the same basic training paradigm will be accepted and that participants will undergo basically the same changes in Japan as were seen in the previous North American research. This study focuses on examining the effects of this training on changes in divergent thinking attitudes among Japanese managers.

HYPOTHESES

The purpose of this research is to investigate the effects of training in a complete three-stage process of creative problem solving on attitudes associated with divergent thinking practice among Japanese managers. It is hypothesized that training Japanese managers in this process will lead to the following attitude changes:

- H₁: an increase in preference for active divergence;
- H₂: a decrease in preference for premature convergence.

These are changes that have been observed consistently using North American samples.

METHOD

Site and Participants

The experimental participants were a hierarchical cross-section of managers drawn from a variety of medium and large-sized private companies in the Tokyo and Nagoya areas of Japan ($n = 60$). The main control group participants were also managers from the same geographic areas. These companies were all interested in improving their management skills. A second small but important control group was integrated into an enriched experimental design as explained below.

Design

The design is a quasi-field experiment with two nonequivalent placebo control groups and pretests and posttests (Cook & Campbell, 1976). This design is well-known and recommended when random assignment of subjects is not logistically possible. Only the gains are compared from pretest to posttest. The effects of the training (X) were tested by comparing the gains from O_1 (observation before) to O_2 (observation after) for the experimental treatment group (trained) with the gains of the two placebo control groups. Measures of the two divergent thinking attitudes of all the participants were taken prior to and after the training of the placebo. The three groups were unaware of each other. All of the participants in all three groups were told that the data they were providing were nonevaluative and intended primarily to help better understand and improve future training efforts. Confidentiality was assured.

The first main placebo control group ($n = 47$) was made up of managers from the same geographic area. They received training designed to improve their understanding of leadership. This training was a combination of lecture-discussion and case analysis presentation in small groups. Participants were asked to respond to the attitude scales presented as a part of a questionnaire designed to measure leadership style before and after the training. An additional placebo control group became available during the research. It was made up of faculty members and graduate students ($n = 15$) from Japanese universities in the same area. This group received a lecture presentation on creative problem-solving principles and concepts. However, the presentation was mostly an abstract theoretical discussion, rather than the concrete, practice-oriented treatment provided to the experimental (training treatment) group. The overall design is shown in Table 1.

TABLE 1
Experimental Design

Experimental Group ($n = 60$)	O ₁	X	O ₂
Main Placebo Control Group #1 ($n = 47$)	O ₁	P ₁	O ₂
Additional Placebo Control Group #2 ($n = 15$)	O ₁	P ₂	O ₂

X = Training Treatment; P₁ = Placebo Treatment #1; P₂ = Placebo Treatment #2; O₁/O₂ = Before/After Measures (Observations).

The double placebo design was intended to control for potential "demand" and "social desirability" effects. A demand effect is one that occurs because subjects feel treated "special" merely having participated in the experiment and desire to perform better in some way to justify this special treatment. A social desirability effect adds the dimension of knowing what the researchers are looking for and trying to provide it to please them. It is well known that North American subjects sometimes tend to complete attitude questionnaires after training workshops in a manner that they believe the researchers want to see. If the Japanese act similarly to North Americans, these Japanese subjects might also exhibit such an effect. Iwawaki and Cowen (1984) found that Japanese were very similar to Americans in social desirability rating behavior.

The purpose of a placebo control group is to factor out such potential demand and social desirability effects. In a placebo control group, the subjects are given a treatment so that they too may feel special and have the same tendency to demonstrate that they have changed as the experimental treatment group. Both control groups represent such placebos. If demand is the only real force in effect, both control groups should show gains equal to those of the treatment group after training/placebo. Furthermore, since control group #2 received the same information and concepts as the training treatment group, it also controls for social desirability. This means if social desirability is the only force in effect beyond demand, control group #2 should show equal gains to the treatment group after training/placebo and greater gains than control group #1. On the other hand, if the training provides a real effect, then the treatment group's gains should be greater than either of the control groups.

Training Procedure

All three groups received either a training or placebo treatment of 1/2-day (4 hours) duration. The practice-oriented training in the three-phase process of creative problem solving described below was provided to the experimental group in English by the senior author while a bilingual translator-trainer provided a simultaneous Japanese interpretation. Written training materials had already been translated into Japanese and were used by the participants just as in North American training. No serious trainer-participant communication problems were encountered. This was

checked frequently during the session with the participants. The same procedure was used for placebo group #2. Placebo group #1 received its placebo training from the Japanese translator-trainer.

The training treatment was primarily experiential and practice oriented. Training experiences included a series of diverse tasks that permitted and encouraged participants to attempt to discover concepts not considered before, such as the value of both divergence and convergence in thinking. For example, participants individually defined a problem from a case and then compared definitions with other participants, discovering that the problem could be viewed in many different yet fruitful ways. Another important aspect of the "learning by doing" emphasis was that the teachings and emerging skills in using the process were also applied to real-world problems in addition to case studies. These processes encouraged transference of creativity concepts to personal frames of reference.

Participants got the opportunity to experience gains and evidence of the value of specific thinking skills and attitudes such as being "less likely to jump to conclusions as to what is the real problem"; "more open-minded to new ideas and approaches"; "more positive reactions to new, unusual product ideas"; "less prone to negative evaluation during idea generation"; "higher quantity and quality of problem finding"; "more likely to consider different problem definitions prior to choosing one as best"; and "more likely to pause to try new, unusual approaches" (Basadur, Graen, & Green, 1982).

The training provided is more fully described in Basadur (1982, 1987, in press a) and is based on the generic Osborn-Parnes CPS approach. Other references to this approach include Parnes, Noller, and Biondi (1977), and Isaksen and Treffinger (1985).

Instrumentation

An 8-item attitude scale was used to measure "preference for premature convergence in problem solving," and a 6-item attitude scale was used to measure "preference for active divergence in problem solving." The items and scales and how the items from the two scales are randomly sorted into one 14-item questionnaire are fully described in Basadur and Finkbeiner (1985). Each item has a 5-point Likert agreement scale. The 14-item questionnaire was translated into Japanese by using the method of back-translation (Brisner, Lonner, & Thorndike, 1973). The Japanese version is available from the senior author.

Analysis

Internal consistency estimates (Cronbach alpha) were calculated for the whole sample and for each group (Cronbach, 1951). Then an analysis of covariance (ANCOVA) was conducted to test mean attitude differences

among the three groups after training by holding the before attitude measure as covariate. Following ANCOVA a repeated measure analysis of variance (ANOVA) was conducted using the Group (training, placebo control #1, and placebo control #2) as a between-subject factor and Time (before and after measures) as a within-subject factor. The patterns of means were examined for compatibility with the hypotheses. Finally, as an extra analysis, the mean gain scores after training on the two attitudes were compared with a similar managerial sample obtained in North America (and reported in Basadur et al., 1989). That sample comprised a similar cross-section of hierarchical levels, functions, and organizational types.

RESULTS

Cronbach alpha reliability estimates for the two attitude scales as translated into Japanese were 0.82 (premature convergence) and 0.67 (active divergence), respectively. These are very similar to the reliability estimates of 0.83 and 0.68 for the original English-language versions reported by Basadur and Finkbeiner (1985). Results of the covariance analysis showed significant training effects, indicating significant group differences involving the preference for premature convergence ($F[2, 118] = 36.7, p < .001$) and preference for active divergence ($F[2, 118] = 17.9, p < .001$) scales.

Given these significant ANCOVA results, an univariate repeated ANOVA was conducted for each scale separately. Results indicated significant effects on preference for premature convergence ($F[2, 119] = 8.7, p < .001$) and for active divergence ($F[2, 119] = 39.9, p < .001$). Also, results clearly indicated that experimental group participants changed their attitudes significantly after the training ($p < .001$ for time for both the premature convergence ($F[1, 119] = 9.9$) and active divergence ($F[1, 119] = 16.5$) attitudes). The magnitude of this attitude change is significantly different from one group to another ($p < .001$ for Group \times Time) with respect to both preference for premature convergence ($F[2, 119] = 9.9$) and active divergence ($F[2, 119] = 17.2$). The non-equivalency of the groups is also indicated, as expected by the quasi-experimental design. To further explore the nature of these training effects, patterns of means were examined among groups over time.

Table 2 displays the mean scores and standard deviations for the treatment group and the two control groups before and after training or placebo for both measures. Figure 1 displays the same results graphically.

The results in Table 2 clearly indicate support for both of the hypotheses. First, there was a gain in preference for active divergence ($t[59] = 5.8$) for the training group, whereas the two control groups showed no significant gains from their placebo training programs. Like-

TABLE 2
Mean Attitude Scores for Premature Convergence and Active Divergence
Based on Groups (Training/Placebo) and Time (Before/After)

Group	Preference for Premature Convergence			Preference for Active Divergence		
	Before Training	After Training	Change	Before Training	After Training	Change
Training Group (<i>n</i> = 60)	23.5 (3.7)	17.3 (5.1)	-6.2** (2.7)	22.2 (3.1)	25.3 (3.3)	+3.1** (2.9)
Placebo Control Group #1 (<i>n</i> = 47)	26.1 (4.2)	25.9 (4.6)	-0.2 (3.5)	21.9 (2.8)	21.7 (2.9)	-0.2 (2.4)
Placebo Control Group #2 (<i>n</i> = 15)	26.2 (4.2)	25.3 (4.8)	-0.9 (3.0)	22.6 (3.6)	23.1 (2.7)	+0.5 (4.1)

Notes: Figures in parentheses denote standard deviations.

***p* < .01.

wise, for preference for premature convergence, the trained group registered a significant decrease ($t[59] = 9.7$), whereas the control groups displayed no change after the training. Thus, the participants' two divergent-thinking attitudes appear to be improved after the training; that is, increased preference for active divergence and reduced preference for premature convergence. It is noteworthy that the magnitude of the gain for premature convergence (6.2) was substantially greater than for active divergence (3.1).

The results in Table 2 also indicate that the training effect was strong enough to offset any possible demand or social desirability response biases. For example, if such response biases were predominant among subjects, and if there had been no real training effect on the treatment group, Control Group #2, having been exposed to basically the same divergent-thinking information and concepts as the Training Group (but with no practice), would have exhibited an equally strong social desirability bias, and the statistically significant differences between the two groups would be nullified. (Similar results would occur for potential demand bias with both control groups.) The significant differences permit us to be confident that a great deal of attitude change did occur after the training, indicating a successful training intervention beyond the potential demand and social desirability biases.

Table 3 displays the comparisons with the North American sample the mean attitude gain scores after training in this study. In summary, the results of comparing Japanese managers with North American managers show that the gain scores on both scales were similar. If anything, the

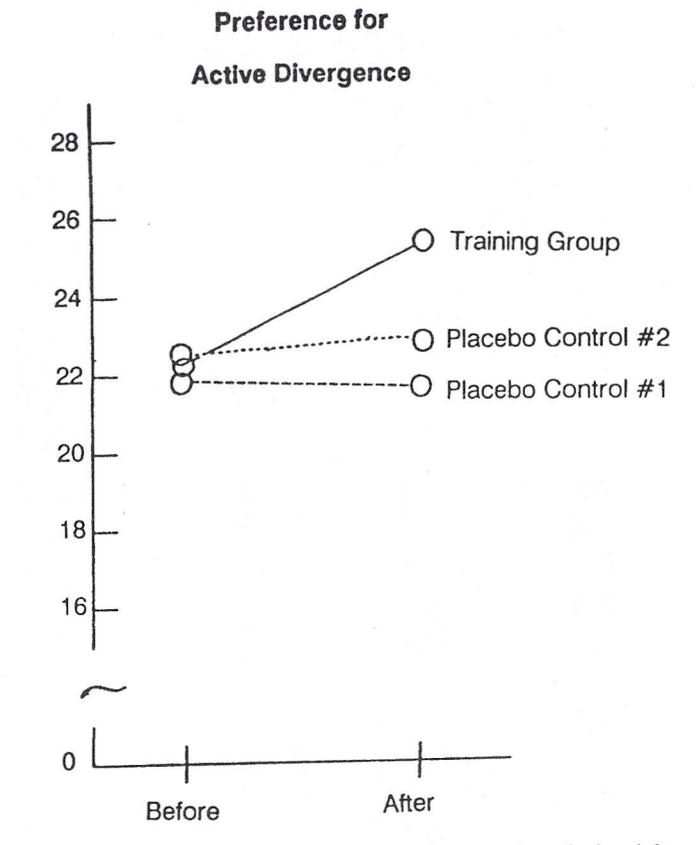
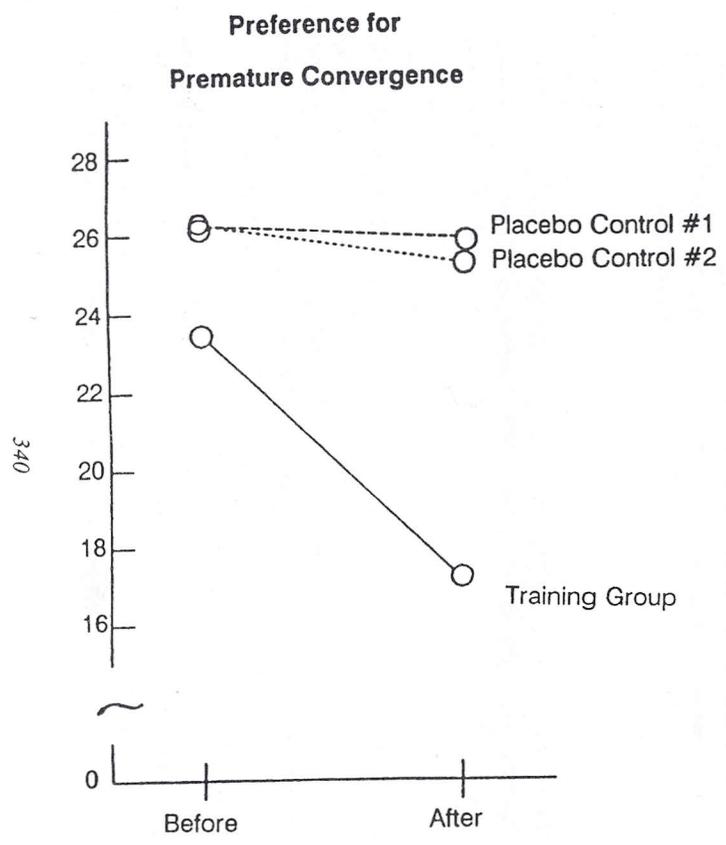


FIGURE 1. Mean attitude scores for premature convergence and active divergence based on group (training/placebo) and time (before/after training).

TABLE 3
Comparing Japanese and North American
Mean Attitude Gain Scores for Managers

Sample	Premature Convergence		Active Divergence	
	Before Training	Gain After Training	Before Training	Gain After Training
Japanese (<i>n</i> = 60)	23.5 (3.7)	6.2** (2.7)	22.2 (3.1)	3.1** (2.9)
Similar North American Sample (<i>n</i> = 90)	23.7 (5.3)	6.0** (5.1)	20.2 (3.9)	2.4* (3.5)

Note: Figures in parentheses denote standard deviations.

**p* < .05.

***p* < .01.

preference for active divergence directionally tended toward a somewhat higher gain (3.1) for the Japanese compared with that of the North Americans (2.4). Standard deviations for mean scores and gains comparing Japan and North America were similar, although the Japanese standard deviations were consistently slightly lower. Finally, as in North America, the Japanese gains for the premature convergence attitude were substantially greater than for active divergence.

DISCUSSION

The results clearly indicate support for both hypotheses. As predicted, the training group displayed statistically significant improvements relative to the placebo control groups #1 and #2 in preference for both premature convergence and active divergence. The training program applied to the Japanese managers proved to be successful in increasing preference for active divergence and decreasing preference for premature convergence. Thus, it appears that the same training paradigm for creative thinking and problem solving may hold for Japanese as well as North American subjects. Furthermore, Japanese and North American managers appear to score very similarly in magnitude of gains made after training. The only slight exception to this statement might be on the active divergence attitude, where Japanese managers' gains may be slightly higher. However, this would have to be more carefully explored in further research.

As in North American studies, the magnitude of change in preference for active divergence among Japanese managers tended to be lower than that of preference for premature convergence. This is further evidence of similarity in response to training between North American and Japanese

subjects. As discussed in the previous research, it seems more difficult to get people to change active divergence attitudes as much as premature convergence attitudes. One other possible reason for the difference in change recorded on the two measures is that, since the preference for active divergence scale tends to have a lower reliability coefficient, it would be less capable of sensing the actual change. The reliability coefficients of the scales were very similar in both cultural contexts. The values obtained were .83 and .68 for preference for premature convergence and active divergence, respectively, in Basadur and Finkbeiner's (1985) North American study, whereas the present results yielded .82 and .67, respectively. Although, as stated already in Basadur and Finkbeiner (1985), the latter scale needs improvement to bring its reliability up to the level of the former, nevertheless, such a coincidence in the reliability coefficients' relationship further supports the Japanese-language version as a fairly accurate replica of the original English version.

Among the Japanese managers, still another reason for the greater improvement in preference for premature convergence relative to preference for active divergence can be speculated. This reason could be a cultural one. It may be easier for Japanese managers to accept the idea of not prematurely judging their own and others' ideas because of their accustomed way of making decisions by consensus. To reach consensus, it is typical for members of a Japanese problem-solving team to try patiently not to make judgments on differences presented by other people's ideas in the team. They also try to restrain themselves from diverging too far so that differences can be minimized and settled without undue antagonism. It would, therefore, be reasonable to expect that Japanese managers, who have a tendency to prefer the consensus decision-making method, would prefer the notion of not making premature judgments 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 outrightly favoring active divergence on the job, since Japan is a "shame" culture (Haglund, 1984). In order to save one's face and maintain personal security (Kume, 1987), one may try to avoid such thinking in particular.

A clear implication of these findings is that training in creative problem solving as provided in this study, emphasizing divergent thinking balanced with convergent thinking in multiple phases including problem finding, problem solving, and solution implementation, would work very well under the consensus-and-harmony-oriented Japanese business culture. Buttressed by the consensus-group atmosphere, Japanese probably can diverge, if so trained, much better than their American colleagues. Japanese work groups and organizations would be better off by incorporating divergent ideas into their decision-making processes by inviting different views and thoughts provided by more diverse groups of people,

including female workers, young employees, part-time workers, foreign employees, and so forth. This would diversify the decision-making groups in the organization, but still maintain the good harmonious corporate culture. Japanese corporations around the world would benefit Japanese business greatly if they could maintain a good balance between divergence and harmonious corporate culture.

In short, the conditions for introducing and increasing divergent thinking in Japan appear considerably superior to North America. Not only is convergence well established, but the understanding of, and emphasis on, problem finding as part of the creative process is already in place (Basadur, 1992, in press). There is also evidence that Japanese industrial organizations provide more supportive environments and infrastructures to nurture and induce application of training effects. This is especially true with respect to the management of their employee suggestion systems (Basadur, 1992).

Understanding the difficulty of improving preference for, and practice of, active divergence in Japan poses an interesting and useful direction for further research. In addition, further Japanese studies replicating the other North American research referenced in this article would seem to be warranted, given these encouraging initial results. In particular, this study should be extended beyond attitudes to include measures of behavior and performance and to check longer term persistence and portability of training effects. Checking the replicability of the Basadur et al. (1986) finding that attitudinal effects persist at least 5 weeks back on the job in a manufacturing environment would be a good starting point, as would replicating the Basadur et al. (1982) findings of persistence of attitudinal, behavioral, and performance effects.

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