# INNOVATION RESEARCH CENTRE

# TRAINING EFFECTS ON THE DIVERGENT THINKING ATTITUDES OF SOUTH AMERICAN MANAGERS

by

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#### ABSTRACT

A field experiment made a preliminary investigation of the effects of training Chilean 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 Spanish translations of the two attitudinal measures. It also indicates that the paradigms and methods of similar training provided in previous Japanese and North American research are applicable to South American managers. The experimental group (n = 149) showed significant gains on both measures versus a control group. Future directions for research include increasing the reliability of the Spanish versions of the two attitudinal measures and extending the training effect investigation beyond attitude changes to include behaviour changes and long term persistence and portability to the job.

## **INTRODUCTION**

Creativity is a necessary requirement for organizational effectiveness. Mott's comparative research (1972) showed that effective organizations are simultaneously efficient and creative. Creativity can be developed, trained, and managed by organizations for multiple benefits including new products and methods, increased efficiency, greater motivation, job satisfaction, teamwork, focus on customer satisfaction, and more strategic thinking at all levels (Basadur 1993). In this study organizational creativity and innovation are interchangeable terms.

The purpose of this research is to further our understanding of how managers in different countries go about innovation and creativity, particulary how they approach problems requiring creativity. In particular, this research investigated how Spanish speaking managers react to training in creative thinking and problem solving. The more we know how managers are similar/different in these respects the more quickly and efficiently innovation be stimulated thereby allowing Canada to capitalize on the opportunities for innovation that emerge as boundaries strip away due to the opening of markets in South America, particularly Chile.

This is the first time in which this training in creative thinking and problem solving has been provided to Spanish speaking management samples and changes measured. This preliminary study focused on measuring immediate changes and on establishing the Spanish translations of the attitudinal measures. Further research on behaviourial and performance changes and longer term persistence would follow if encouraging results were found. 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 outside North America offering data on the attitudes of 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 crosscultural studies. Though the walls may erode, individual cultures remain vital with the result that the ability to learn, understand, and cooperate between cultures takes on greater importance. This research involved field experiments designed to act as preliminary investigations of the effect of training Chilean managers in creative problem solving.

Of the many significant changes in the economy in the past few years, one of the largest changes to affect North America has been NAFTA. It is expected that NAFTA will continue to expand to South America. Chile is considered an important player in South America and it is expected that this country will soon join this economic union. Further, Chile is a fast growing economy. From 1988 to 1991 per capita GDP increased from \$1734 to \$2240. With exports in 1991 of \$8.9 billion, Chile is an economy on the move. What makes Chile a golden opportunity is that it is not yet in a large free trade block. In 1990 Chile signed an agreement of free trade with Mexico. Suggestions of Chile become part of Nafta are strong. By studying divergent thinking now we have the rare opportunity of examining how free trade affects this country before and after entering into a large free trade agreement. As well, since little research has been done on this country, this study was intended to enable us to examine it in more detail.

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#### 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, and Scandura, 1986; and Basadur 1994). A field experiment in an industrial research organization found that appropriate practice-oriented training resulted in improvements in divergent thinking attitudes that accompanies improvements in divergent thinking practice and in creative performance (Basadur, Graen, and 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) modeled how divergent thinking attitudes enhance divergent thinking skills. They also established 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 indicated that such training positively affects these two divergent thinking attitudes in manufacturing engineers (Basadur er al., 1986) and in a broad cross-section of an organization's 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. A recent study extended that research into a different culture, that of Japan (Basadur, Wakabayashi and Takai, 1992). The study investigated of the effects of similar training in creative problem solving on Japanese managers. The two divergent thinking attitudes above were measured before and after training. This research established the Japanese translations of the two attitudinal measures. It also indicted that the applicability and receptivity of the paradigms and method of training provided may be at least as strong in Japanese business and industries 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 appeared to make at least equal gains after training.

# **CROSSING CULTURES**

The literature suggests that the positive effects of the training process described below 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 creating 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 (Altermeyer, 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.

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 again dealing with uncertainty and favouring a compelling urge to obey rules. Divergent thinking favours exploring uncharted territory and doing things that break from past practice. Another example is that both of 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 mangers impedes them from being more divergent in group discussions and communication. The training in this research is intended to overcome such traditions and stimulate divergent thinking.

The design and content of this training provided to the Chilean managers are described in the references cited below. 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 process called "ideation-evaluation" occurs. Ideation is the generation of options, different points of view, and perceptions' of facts and ideas without any critical judgement 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

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are training 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).

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 basic paradigm and the process of creative thinking that is fundamental to the training in this study could reasonably to be expected to be applicable to many different cultures. However, one should be cautious when ascribing a bias to a culture or when transposing studies across cultures and drawing conclusion 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 Studies in other countries should not, however, assume that any training is easily value 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 corporation 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 form country to county.

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### CHILE AND CREATIVITY

Extensive studies of values have been completed to document some of the differences between North American managers and their Chilean counterparts. Hofstede (1978; 1987) found that Chileans generally feel that uncertainty is a continuous threat that must be reduced. They believe that conflict and competition can unleash aggressive actions and therefore should be avoided. Hofstede felt this encourages Chileans to seek consensus and view deviant persons or ideas as potentially dangerous. Hofstede's work further suggests that Chilean managers are motivated by needs for security and belongingness. These values counter some of the lessons of creative problem solving where the practice of active divergence requires individuals to generate large quantities of thought without regard to merit. These values also counter the goal of reducing premature convergence, where participants are required to not judge ideas or thoughts too hastily.

With these arguments in mind, the authors hypothesized that managers from Chile would respond to the training similarly to their North American and Japanese counterparts. It is hypothesized that the basic training paradigm will be accepted and that Chilean participants will undergo basically the same attitudinal changes as were seen in the previous North American and Japanese research. This study investigates the effects of the training on the divergent thinking attitudes of Chilean managers.

#### HYPOTHESES

A purpose of this research is to investigate the effects of the training in a complete threestage process of creative problem solving on attitudes associated with divergent thinking practices of Chilean managers. It is hypothesized that training these 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 and Japanese samples.

#### **RESEARCH METHODOLOGY**

#### Site and Participants

The experimental group (n=149) was comprised of managers and professionals from business, industry and government organizations in Chile covering a wide cross section of hierarchial levels and functional specialalities. They each attended a one day training seminar and were measured before and after the training. There were six training seminars in all and the training group sizes ranged from 19 to 44. The placebo control group (n=19) was made up of the cross-section of participants as the experimental training group.

# Design

The design is a standard quasi-field experiment with a nonequivalent placebo control group 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 comparing the

gains from O1 (observation before) to O2 (observation after) for the experimental treatment group (trained) with the gains of the placebo control group. Measures of the two divergent thinking attitudes of all participants were taken prior to and after the training/placebo. It should be noted that only 149 of the 217 total participants were tested both before and after training.

TABLE 1 Experimental Design

cebo Control Group (n= 149)	01 X O2
(n=19)	01 P O2

Note:	Х	=	training in creative thinking and problem solving
	Ρ	=	placebo training
	01	=	observation before training
	02	=	observation after training

The placebo design is 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 ways 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 these other managers act similarly to North Americans, these subjects might also exhibit such effect.

The purpose of the 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. In this case the placebo control group received training designed to improve their understanding of leadership and economics. The 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 questionaire designed to measure leadership style before and after the training.

### **Training Procedure**

Both groups received either the training or placebo treatment of 1 day. The practiceoriented training in the three-phase process of creative problem solving described above was provided to the experimental group in English by the senior author while a bilingual translatortrainer provided a simultaneous Spanish interpretation. Written training materials were already translated into Spanish and were used by the participants just as in the North American/Japanese training experiments. There were no serious trainer-participant communication problems.

The training treatment was primarily experiential and practice oriented. Training exercises 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 can be viewed many different yet fruitful ways. Another important aspect of the "learning by doing" emphasis was the teachings and emerging skills in using the process also apply to real-world problems in addition to case studies. These processes encouraged transference of creativity concepts to personal frames of reference.

Participants had 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 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 et al., 1982).

The training provided is more fully described in Basadur (1982, 1987, 1994). Other reference 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 forming the two scales are randomly sorted into one 14-item questionnaire as fully described in Basadur and Finkbeiner (1985). Each item has a 5-point Likert agreement scale. This 14-item questionnaire was translated into Spanish and checked by 3 independent billingual Spanish-speaking people in Chile and Uruguay who agreed that the items translated satisfactorily. The two 14-item questionnaires are shown in appendices 1 and 2.

#### Analysis

Internal consistency estimates (Cronbach alpha) were calculated for the two scales (Cronbach, 1951). An analysis of the covariance (ANCOVA) was conducted to test mean

attitude differences between the groups after training by holding the before attitude measure as covariate. Following ANCOVA a repeated measure of analysis of variance (ANCOVA)was conducted using the Group (training, placebo control) as a between-subject factor and time (before and after measures) as a within-subject factor. The patterns of means were examined for a compatibility with the hypotheses. Finally, as an extra analysis, the mean gain scores after training on the two attitudes were compared with the similar managerial sample obtained in North America (and reported in Basadur et al., 1989) and Japan (and reported in Basadur et al., 1992). These samples comprised a similar cross-section of hierarchial levels, functions, and organization types.

#### RESULTS

# 1. Reliability of the Spanish Versions of the Two Scales

An additional 68 subjects filled out the fourteen item questionnaire but were not exposed to the training. This provided a total base of n=217 for the reliability testing. Initial Cronbach alpha reliability estimates for the two attitude scales were lower than expected, especially for the 8-item 'preference for premature convergence' scale. A Cronbach alpha of .49 was calculated for the 6 item 'preference for ideation scale and .31 for the 8 item 'preference of premature convergence' scale. These figures compared to .68 and .83 for the English version and .67 and .82 for the Japanese version respectively in previous research.

Therefore the data were further investigated. A factor analysis of the 14 item questionnaire with varimax rotation was undertaken. Table 2 shows the loadings of each of the items on the two factors.

# TABLE 2

#### **Factor Loadings**

Item	Preference for Active Divergence	Preference for Premature Convergence	
1		.61	
2		.53	
3	.50		
4	.29		
5		.74	
6		.49	
7		.73	
8	.67		
9	.63		
10		.68	
11		70	
12	.18		
13	.41		
14		70	

Surprisingly, two of the items (11 and 14) of the 'preference for premature convergence' scale loaded strongly negatively (-.70 each) instead of strongly positively as expected. When these two items were removed, the Cronbach alpha calculation for the 6 remaining items rose dramatically to .78, an acceptable level and similar to the English and Japanese versions of the scale.

On the 6-item 'preference for ideation' scale, all loadings were positive, although two items (4, 12)loaded relatively weakly (.29, .18) respectively. Removing these two items resulted in only a small improvement in Cronbach alpha reliability, probably because only four items were left in the scale.

# 2. Hypothesis Testing

The results in Table 3 clearly indicate support for both of the hypotheses. First, there was a significant gain in preference for active divergence (+ 1.7, p<.05) for the experimental group, whereas the placebo control group showed no significant gain after training. Likewise, for preference for premature convergence, the experimental group registered a significant decrease (3.4, p<.01), whereas the placebo control group displayed no significant change after training. Thus, the participants in the experimental group appeared to have improved their divergent thinking attitudes after the training; that is, preference for active divergence was increased and preference for premature convergence was decreased.

#### **TABLE 3**

Group	Preference for Premature Convergence (n=149)			Preference for Active Divergence (n=149)		
	Before Training	After Training	Change	Before Training	After Training	Change
Training Group (n=149)	25.2 (2.9)	21.6 (3.6)	-3.4** (3.8)	22.1 (3.1)	23.8 (3.2)	1.7* (3.4)
Placebo (n=19)	25.5 (3.3)	25.8 (3.2)	0.3n.s. (2.6)	21.6 (2.5)	22.1 (3.0)	0.5n.s. (2.0)

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

Note: Figures in parentheses denote standard deviations.

n.s. denotes not significant. \*\*p<.01 \*p<.05

It is worthy to note that the gain for premature convergence (3.4) was substantially greater than for active divergence (1.7). This comparison is similar to results found in the previous North American and Japanese studies. Table 4 compares all the results with previous North American and Japanese samples.

#### TABLE 4

Mean Attitude Gain Scores for Managers						
	Prefere	ence for	Preference for			
	Premature	Convergence	Active Divergence			
Group	Before	Gain After	Before	Gain After		
	Training	Training	Training	Training		
Chile (n=149)	25.2	3.4**	22.1	1.7*		
	(2.9)	(3.8)	(3.1)	(3.4)		
Japanese (n=60)	23.5	6.2**	22.2	3.1**		
	(3.7)	(2.7)	(3.1	(2.9)		
North American	23.7	6.0**	20.2	2.4*		
(n=90)	(5.3)	(5.1)	(3.9)	(3.5)		

# **Comparing Chilean, Japanese and North American**

Note: Figures in parentheses denote standard deviations \*p < .05 \*\*p < .01

In summary, the Chilean results show less gain in both active divergence and premature convergence when compared with North American and Japanese samples. This may be because of the two items in each scale that were negative or weak respectively. It is also interesting to note that in all three cases gains for premature convergence attitude were substantially greater than for active divergence. The reasons for this have been thoroughly discussed in the previous research and centre around the fact that there are fewer items (6) in the active divergence scale than the premature convergence scale (8) and the lower reliability of the active divergence scale.

#### DISCUSSION

The results clearly indicate support for both hypotheses. As predicted, the training group displayed statistically significant improvements relative to the placebo control group. The training program applied to the Chilean 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 Chilean managers as it does to Japanese and North American managers.

As in North America and Japan, the magnitude of change in preference for active divergence among Chilean managers tended to be lower than that of preference for premature convergence. This is further evidence of the similarity in response to training among North American and Japanese subjects. As discussed in previous research, it seems more difficult to get people to change active divergence attitudes as much as premature convergence attitudes. One possible reason for greater improvement in preference for premature convergence relative to active divergence can be speculated. This reason could be a cultural one. It may be harder for Chilean managers to diverge too far so that difference can be minimized and settled without undue antagonism given their values countering competition and deviance. It also may be that Chilean managers, who place emphasis on consensus and prefer to avoid conflict and uncertainty, would try to limit their ideas to those they believe would be acceptable to the group. In order to avoid being viewed as 'deviant' or having dangerous ideas, a Chilean manager may try to avoid such thinking.

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 well under the Chilean culture. The conditions for introducing and increasing divergent think in Chile appear similar to Japan and North America.

An important research direction is to improve the Spanish translation of the fourteen item questionnaire used in this study. Specifically items #11 and #14 must be reworked or replaced in the preference for premature convergence factor. Similarly, items #4 and #12 in the should be reworked for the preference for active divergence factor. A back translation should be made of such a revised questionnaire prior to reliability testing.

Just as in North America and Japan the seemingly more difficult task of increasing preference for active divergence than decreasing the tendency for premature critical evaluation of ideas pose an interesting direction of research. In addition, further Chilean studies replicating other North American research would seem warranted, given these encouraging results. In particular, this study should be extended beyond attitudes to include measures of behaviour and performance and to check longer term persistence and portability of training effects. Finally, research into possible changes of the Spanish measuring device may provide better results into the effects of the training.

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# Basadur 14-Item Preference Scale (Spanish)

# **Instrucciones**

Abajo una desa	o Vd. verá varias de estas e indio cuerdo con cada A = Muy B = De a C = Ni do	a frases que s que debajo una de esta de acuerdo acuerdo e acuerdo ni	se refieren a de cada ur is colocando en desacue	a diferentes na el grado o un circulo D E erdo	situacione o en que V o alrededor = Des = Mu	s. Lea cuidadosamente a cada /d. se halla de acuerdo o en de la letra que corresponda. sacuerdo ly rechazada	
1.	Antes de comun	icarle mis ide A	eas a otros B	yo debería C	hacer un p D	oco de autocrítica al respecto. E	
2.	Debemos elimina	ar nuestras io A	deas al ver B	que se torn C	an ridículas D	yaeguir a elante con lo válido. E	
3.	Creo que a las p pues nunca se s	personas en abe cuando i A	el trabajo s una idea qu B	e les debe e todos cre C	alentar a qu en es absur D	ue compartan todas sus ideas, da, pueda resultar ser la mejor. E	
4.	Una idea nueva	vale lo miar A	no que diez B	viejas. C	D	E	
5.	Al generar nueva de ideas present	as ideas es i tadas.	mucho mas	importante	e la calidad	de las miemas que la cantidad	
		Α	В	С	D	E	
6.	Para ser capaz mantenerse enc	de producir arrilada en e	buenas ide sta.	as, un gru	po debe er	nfocar en una sola dirección y	
		А	В	С	D	E	
7.	Las ideas absurd	das hacen pe A	erder mucho B	o tiempo. C	D	E	
8.	Pienso que todo	os deben dec A	ir lo que se B	e les occurra C	a cada vex D	que le sea posible. E	
9.	9. Me gusta escuchar las ideas absurdas de otros pues aún las mas disparatadas muchas veces conducen a la meior solución.						
		A	В	С	D	E	
10.	Es importante u perfeccionan las	usar el criter s de buena c	rio mientras alidad.	s surgen id	eas nuevas	s para asegurarse que solo se	
		Α	В	С	D	E	
11.	Es necesario re nuevas ideas.	conocer y d	escartar las	s ideas des	cabelladas	durante el proceso de generar	
		Α	В	С	D	E	
12.	Creo que toda i aismo tiempo q	idea nueva, ue a las otra	por ridícula s y en form	que esta p la desprejui	ueda parec ciada.	er merece que se le dedique el	
		Α	В	С	D	E	
13.	La mejor forma o añadirles algo	de generar i	deas nueva	s es la de e	escuchar a	las de los demás y secundarlas	
	U	Α	В	С	D	E	
14.	Desearia que la para enunciarla.	gente pensa	ase si una io	dea a propo	ner es o no	o práctica antes de abrir la boca	

A B C D E

# Basadur 14-Item Preference Scale

#### Instructions

Listed below are several statements concerning various situations. Read each statement carefully and indicate the extent to which you agree or disagree with the statements by circling the letter which corresponds. Α Strongly Agree D = Disagree = E Strongly Disagree В = Aaree = С = Neither Agree Nor Disagree I should do some pre-judgment of my ideas before telling them to others. 1. F Α B С D We should cut off ideas when they get ridiculous and get on with it. 2 в С D F Α If feel that people at work ought to be encouraged to share all their ideas, because you never 3. know when a crazy-sounding one might turn out to be the best. С D Α B Ε

4. One new idea is worth ten old ones.

A B C D E

- 5. Quality is a lot more important than quantity in generating ideas.
  - A B C D E
- 6. A group must be focused and on track to produce worthwhile ideas.

A B C D

- 7. Lots of time can be wasted on wild ideas.
  - A B C D E
- 8. I think everyone should say whatever pops into their head whenever possible.
  - A B C D E
- 9. I like to listen to other people's crazy ideas since even the wackiest often leads to the best solution.

D

D

D

D

Е

Ε

F

Е

Е

Ε

A B

10. Judgment is necessary during idea generation to insure that only quality ideas are developed.

С

A B

Α

Α

ВС

- 11. You need to be able to recognize and eliminate wild ideas during idea generation.
  - B C D
- 12. I feel that all ideas should be given equal time and listened to with an open mind regardless of how zany they seem to be.

В

- 13. The best way to generate new ideas is to listen to others then tailgate or add on.
  - A B
- 14. I wish people would think about whether or not an idea is practical before they open their mouths.

A B C D E

С

С

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