

Selecting and Adapting Facilitation Tools for Deliberate Creativity

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When choosing facilitation tools, it is not enough to look at desired outcomes, such as ideas or decisions; it is necessary to look at the people and the problems they are attempting. There may be an advantage to think of deliberate creativity as the exploration of the impact of using types of thinking outside the habits of individuals, outside the cultures of their companies and countries. This chapter explores the relevance of cultural differences and learning style differences both as facilitation targets and facilitation anchors. It also considers the impact of external modeling methods on the ability of teams and individuals to handle complex dynamics and problems.

Facilitators are people unwilling to accept natural and culturally normal levels of creativity and insight, even of the most creative people they can assemble. With various tools and techniques they make it easier for people, groups, and organizations to increase the creativity of their performance as they apply their knowledge to solve problems of interest.

Facilitators succeed by getting increased insight, invention, and implementation from people and social systems by shifting their processes of thinking and communicating outside and beyond the habits they have learned from their lives, their education, and their cultures.

Some people new to facilitation look at the outputs of those using the tools and assume they can get the same results with all people and all problems. Basically, a facilitation tool shifts some perception or behavior of individuals by taking advantage of some habit, attitude, style, or belief of the individual. There is no shift if the person is already comfortable with the desired behavior. There is also no shift if the person does not have the belief, habit, or assumption that the facilitation tool uses to trigger the needed shift. Various concepts and insights can make it easier to select, adapt, and even invent facilitation tools to best fit specific people and the problem they are attempting.

People are different, and in many interesting and diverse ways.

Leadership as Invoking Followership

Facilitation is a form of leadership. One or more facilitators attempt to lead the problem solvers to new behaviors, beliefs, and attitudes. It is very confusing in both popular and

academic literature that people talk about leadership as if it is something a person has, like height or shoe size. In this sense, there is no such thing as leadership.

Instead, people do have followership, a pattern of behavior and characteristics that trigger them to trust and give their followership to an individual. This sounds like a word game until you consider that different people have different followership. For example, some are triggered by a forceful speaker, others by a quiet person who listens and offers wisdom.

If by chance the natural behaviors and characteristics of one individual trigger the followership of one or more, we can label this interaction “natural” leadership.

While this is valuable to the study of the past, the future of the world cannot rely upon the available levels of natural leadership. Fortunately, it is completely possible to practice “deliberate leadership” by hypothesizing what might trigger the followership of those you wish to influence, using that behavior or characteristic, observing the results, and adjusting as necessary.

A great deal of cultural and psychological style research is strongly related to this issue of followership. Understanding a variety of styles and differences allows a deliberate leader to invent and test ways to invoke needed followership.

Leadership: Trusting When Clueless

If a leader gets you to do something you want to do, that is not leadership. If a leader gets you to act on a belief or area of knowledge you completely understand, that is not leadership. Cross-functional teams are a good example of this situation. When people from marketing, finance, engineering, operations, etc. must work together, it is important to know how much to trust the competence of other team members. When a whole team is from one area, like finance, each team member can check the concepts and calculations of their teammates and know pretty quickly how competent each one is. In a cross-functional team, it is very unlikely that the marketing person can check the calculations and assumptions of the engineer. It is unlikely that the engineer can look over an advertising plan and know the competence level of the marketing person. Since there are no technical ways to assess competence, we are left with social processes, the same ones we describe as leadership/followership.

So there is a dynamic of leadership when diverse problem solving teams learn to give their trust and followership to the other team members. It is also followership when team members accept the guidance of facilitators. So facilitation is a process of deliberate leadership, which requires fitting facilitation activities to the needs and responsiveness of the people on the team. Of course, people vary from team to team, and even people on the same team can be quite different in their followership.

Understanding Facilitation through Culture

There is an interesting similarity between culture related differences in thinking and the techniques used to guide teams to deliberate creativity. It is as if we guide them to more effective thinking by having them think more like one culture, then more like another culture, then another, until a complete and effective solution is developed. Let us look at some cultural differences, relate them to some specific techniques of deliberate creativity,

and discuss various implications for teams, especially those whose members represent different cultures.

One of the more interesting writers about cultural differences in thinking and values is Geert Hofstede, who gathered data from a large number of people with similar jobs in the same company, but who represented many of the cultures of the world. He found that cultures differed in four main ways, although more recent work to include Chinese managers has led to a fifth factor.

The table below shows the scores on the different dimensions for a variety of countries, normalized on a scale of 1-100. Note that these are not types, but rather ranges across which people are positioned, with different averages for each culture. Note that since we are discussing the average, the central tendency for each culture, there are many individuals in any one culture who are closer to the average of another culture.

Power Distance

Some people are more comfortable with hierarchy and authority relationships. In countries such as Malaysia and Guatemala, people find it normal for someone to have a great deal more power than they do. In countries at the other end of the spectrum, such as Israel and Austria, it is very uncomfortable to have anyone in authority over you. The United States scores 40 out of 100, leaning toward less acceptance of authoritarian relationships.

This acceptance of the legitimacy of power applies at any level of power, whether one is born or chosen to be king or slave.

Individualism/Collectivism

Ties are weaker between members of more individualist societies such as the United States and Australia. Individuals are expected to take care of themselves and not rely upon others. In more collectivist societies like Ecuador and Guatemala, people have strong ties with family, village, society, etc. and success of the whole is far more important than the success of any one member. There is both sacrifice of individual success and benefits for the good of others in the group, and involvement of the whole group in decision-making and problem solving. Negotiations that would be one on one in an individual society will be family to family in a more collective society.

Uncertainty Avoidance

People differ in the degree to which they feel threatened by uncertainty. Those from cultures high in uncertainty avoidance, like Portugal and Greece, take strong steps to increase predictability; often with written and unwritten rules everyone must follow. Those low in uncertainty avoidance, such as Singapore and Jamaica are far more comfortable with change, even when they cannot reliably predict the results of the change. The United States leans toward the low end, scoring an index of 46 out of 100.

Masculine/Feminine

This factor has nothing to do with sexual preference. Hofstede has labeled as masculine those cultures in which there is a strong distinction between the strong male role and the nurturing female role, such as Japan and Austria. He has labeled as feminine those

HOFSTEDE'S CULTURAL DIMENSIONS									
PDI = Power Distance IDV = Individualism/Collectivism MAS = Masculine/Feminine UAI = Uncertainty Avoidance									
Country	PDI	IDV	MAS	UAI	Country	PDI	IDV	MAS	UAI
Arab Countries	81	38	53	68	Jamaica	49	39	68	13
Argentina	50	46	56	86	Japan	55	46	95	92
Australia	38	90	61	51	Malaysia	104	26	50	36
Austria	11	55	79	70	Mexico	94	30	69	82
Belgium	66	75	54	94	Netherlands	39	80	14	53
Brazil	74	38	49	76	New Zealand	22	79	58	49
Canada	40	80	52	48	Norway	31	69	8	50
Chile	64	23	28	86	Pakistan	57	14	50	70
Colombia	68	13	64	80	Peru	64	16	42	87
Costa Rica	36	15	21	86	Philippines	95	32	64	44
Denmark	18	74	16	23	Portugal	63	27	31	104
East Africa	65	27	41	52	Salvador	67	19	40	94
Ecuador	80	8	63	67	Singapore	76	20	48	8
Finland	33	63	26	59	South Africa	49	65	63	49
France	69	71	43	86	South Korea	60	18	39	85
Germany FR	35	67	66	65	Spain	58	51	42	86
Great Britain	35	89	66	35	Sweden	31	71	5	29
Greece	61	35	57	112	Switzerland	34	68	70	58
Guatemala	95	6	37	101	Taiwan	58	17	45	69
Hong Kong	68	25	57	29	Thailand	64	20	34	64
India	78	48	56	40	Turkey	66	37	45	85
Indonesia	78	14	46	48	Uruguay	63	36	38	100
Iran	60	41	43	59	USA	45	91	62	46
Ireland(Republic of)	28	70	68	35	Venezuela	81	12	73	76
Israel	13	54	47	81	West Africa	77	20	46	54
Italy	54	76	70	75	Yugoslavia	77	27	21	88

Table constructed from values shown in: Hofstede, Geert (1996) *Cultures and Organizations: Software of the Mind* McGraw-Hill Professional Publishing.

societies in which men and women are equally willing to be strong and nurturing such as Norway and Sweden. In his research the United States leans more toward the masculine with an index of 62 out of 100, although many would argue that the American culture has moved quite a bit toward the equal role “feminine” end since then. More women can invoke leadership in the workplace and more men can be nurturing in the workplace and the home, even taking time as “house husbands”.

Time Horizon

In his more recent writings, Hofstede has been exploring the fit of these factors to the Chinese and other Asian cultures not included in his original sample. In addition to the four factors mentioned above, he is looking at a dimension he discusses in terms of Confucian values, but which seems strongly similar to the time horizon factor of Elliott Jaques. Some people tend to consider only the immediate impact of ideas and decisions, while others look far into the future. Jaques has found that generally, the higher a person is in an organization, the further they are looking into the future. It is obvious that cultures also differ in their focus on the future. Some only consider today, while others consider generations far into the future.

Brainstorming as a Culture Shift

In the 1940's Alex Osborn was an advertising executive who noticed that junior people with interesting ideas were not sharing them in the meetings. He realized that the usual meeting environment discouraged people from both flexibility and fluency, so he designed a meeting environment called brainstorming to get the creative ideas out for discussion.

He realized that people kept silence because of their fear of the opinions and criticisms of others. With Osborn's brainstorming process, groups were able to work together and generate 50 to 500 ideas in five minutes. His groups were so productive that no secretary could keep up, so sessions were tape-recorded and typed transcripts given to those attending for later evaluation.

His brainstorming process can be summed up by four rules:

1. *Criticism is ruled out.* Adverse judgment of ideas must be withheld until later.
2. *"Free wheeling" is welcomed.* The wilder the idea the better; it is easier to tame down than to think up.
3. *Quantity is wanted.* The greater the number of ideas, the more the likelihood of useful ideas.
4. *Combination and improvement are sought.* Suggest how ideas of others can be turned into better ideas or how two or more ideas can be joined.

Applied Imagination, p156.

Osborn's brainstorming technique can be seen first as a call to reduce people's avoidance of uncertainty. They were encouraged to contribute ideas of which they were not certain. It was also as a request for people to reduce their power distance. You were encouraged to contribute ideas that conflicted with those of your boss and those of people with more credentials in a discipline.

Intellectual and Emotional Judo

Notice that the facilitation process is designed to use people's habits to shift them away from those habits. A facilitator deliberately invokes the followership inherent in a person's power distance, then uses that power to demand that the person behave as if there is no power distance among team members. A facilitator deliberately invokes the followership inherent in the high avoidance of uncertainty to get the team to accept that

there is no uncertainty because all ideas will be thoroughly investigated before being fully accepted.

Notice that a person low in power distance will not give the facilitator the needed power and a person low in avoidance of uncertainty will not be influenced by the promised judgment. But of course, they already operate normally in a “brainstorming” mode. This means they can work well with the team, but in order to discover the ideas they are missing, they need different shifts in thinking.

Western Style Problem Solving?

It may be fair to say that most of the techniques used for team leadership and deliberate creativity are attempts to shift, at least temporarily, away from the more usual Western style. When people are taught to solve problems in teams, they are often encouraged to define the problem in broader terms, considering who else might be affected (being more collective) and how it might affect the future (extending the time horizon). Also, a great many techniques of “facilitation” of team creativity are more of a nurturing type, affecting the social and emotional interactions of the team members. In strongly masculine cultures, these are decidedly feminine issues.

How effective are the techniques with people from cultures that are already different from the American style? It may be that they are already “creative,” or it may be that creativity actually lies in exploring the areas outside one’s habitual thinking. So maybe creativity for a Jamaican is to be a little less tolerant of uncertainty, for an Asian to be a bit more individualistic.

Leading Multi-Cultural Teams

If the different types of thinking and discussion that make up effective problem solving are related to cultural differences, it might seem that the solution is to select the right cultures for each team. But of course, the real issue is what styles they can adapt together deliberately. Lets all be Jamaican for some brainstorming, now be Austrian for idea evaluation, etc.

It seems likely that people of different cultures will react differently to the various components of facilitation and leadership attempts. Some will love one part of the process, others will love another. However, if the techniques rely upon Western cultural habits for their power, these methods are unlikely to be effective with those of different habits.

So it seems critical for anyone attempting to lead deliberate creativity by teams that they have an understanding of the ways that team members differ. It is also important that you understand both the effects and the anchors of various methods, and be prepared to design and use methods with different effects and anchors with people whose styles are different.

It is probably even more useful if the team members understand the issues and differences so that they can make adjustments to each other’s perspectives and values. When team members understand and are able to discuss their differences in style, culture, and personality, it becomes possible for each team member to participate more effectively in each different aspect of the creative and problem solving processes.

Kolb's Learning Style Inventory: More Dimensions of Facilitation

David Kolb's Learning Style Inventory (LSI) is another tool to help people begin to understand that other perfectly rational people can see things differently, or pay attention to different aspects of the problem. Kolb selected two dimensions, the degree to which people preferred to be active or reflective when they learn or solve problems, and the degree to which they pay more attention to the direct concrete experience or the explainable abstract aspects of the situation. Active people tend to focus on a single alternative and begin taking action, while the more reflective like to keep open multiple possibilities. Those with a tendency toward abstract conceptualization like to focus on the explainable and definable aspects of situations and things, while those more interested in concrete experience are more interested in specific things and sensory aspects. (Note that emotions are experienced directly by the individual, and are considered concrete in this model.)

Kolb uses these dimensions to divide the population into four "types". When using the language of types it is important to remember that two people almost identical in scores could be on opposite side of a dividing line and thus being scored as different types, while people whose scores fall into the same type might have very great differences in the underlying traits.

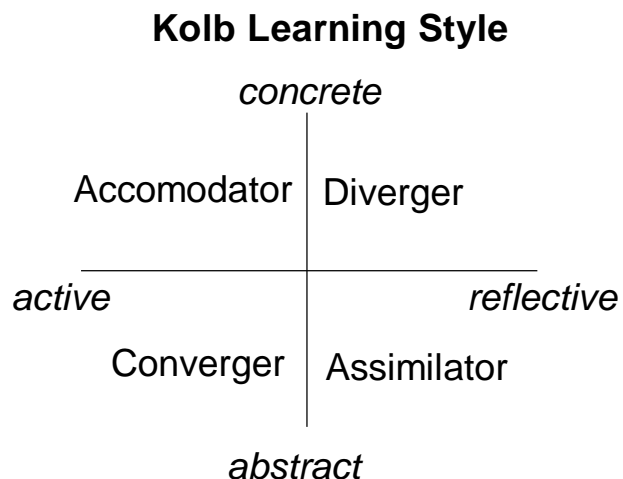
In labeling the four quarters, Kolb discovered that people who did best at the standard tests of divergent thinking, like brainstorming uses for a brick, tended to be more reflective and to pay more attention to the direct concrete experience aspects. So he labeled people in this quadrant as "**divergers**". These folks tend to prefer to be artists, therapists, and human resource professionals.

People in the opposite quadrant, who tended to be more active, but focused more on the explainable abstract aspects of a situation, seemed to do extremely well on tests in which you must converge on a single answer, such as multiple choice tests or IQ tests. So he labeled these people "**convergers**". These folks tended to prefer engineering and planning professions.

It is interesting that much of the early approaches to deliberate creativity can be seen as attempts to get people of a **converger** style to behave as if they were of the **diverger** style. Those with more facilitation experience often notice that highlighting the "Rules" of brainstorming has great appeal to **convergers**, but are rejected by those whose natural style is **diverger**.

Reactions to brainstorming, such as the invention of Nominal Group Technique can be seen as a more preferred approach for those of the **converger** style.

Kolb found that those who preferred the reflective abstract way of learning liked to take in lots of different and conflicting information and find ways to integrate them. So



he labeled them “**assimilators**”. These people tend to become PhD scientists and college faculty.

Finally, he looked at the active people focused on direct concrete realities and found that they were constantly making those adjustments to the plan that are necessary to accomplish their goals, and labeled them as “**acomodators**”. These people make great project managers, production supervisors, and salespeople.

Kolb points out that the most effective learning involves all quadrants, a process of reflecting on experience, developing new theories, making plans, and acting upon those plans. Then, reflecting on that experience and continuing in what he called the “learning cycle”.

Professions have been found to have a predominant type, with people whose type is furthest from the average for the field most likely to change majors or professions. Educational programs can be seen as fitting the various styles. Most engineering programs are entirely **converger**, with the **assimilator** types moving to the sciences where comparing multiple theories and approaches is acceptable. Trade schools are generally **acomodator** focused, with little time spent on theory. Since MBA programs were originally designed for engineers, it makes sense that many of them operate almost entirely in the **converger** model.

But the complete knowledge a manager needs requires rubbing theory up against reality, and reflecting on what happens. This fuller learning cycle is labeled “experiential learning” in the education literature. This is very similar to the various problem-solving cycles, such as the Osborn-Parnes Creative Problem Solving steps.

So it might seem that **divergers** would be the best for the fact finding and value assessment phases of a problem, **assimilators** best at bringing together the disparate elements into clearer models (problem finding), **convergers** better at devising plans based on those insights and models (idea finding and solution finding), and **acomodators** best at getting the plan into action (acceptance finding).

However, the team needs to bring all their various perspectives and knowledge together in each aspect of the process, so in fact what is needed is for all team members to reflect concretely in the first phase, for all to reflect abstractly in the second, and so forth.

So the tools of facilitation must be designed and selected to help people of other styles function in the needed quadrant. Understanding the transitions of style that people of various professions have to accomplish to operate effectively in steps that don't match their preferred style can help a facilitator be more effective with cross functional teams. And of course, sharing this knowledge with the team can empower the team to be self-managing on these issues.

Styles of Creativity

Michael Kirton has developed a scale called the Kirton Adaptor-Innovator Inventory (KAI). He found that people with high levels of creativity might focus their creativity in quite different ways. If you think of the idea of “out of the box thinking” and the idea that every problem consists of multiple boxes, those who tend to find creative ways to solve the problem without changing or violating any of the boxes are labeled as Adaptors. The

more boundaries a creative person tends to violate, the more they are seen as having an Innovator style.

Kirton and his associates argue that people of equal fluency and flexibility of creative output might focus on different levels of his scale. He would argue that they do not differ in creativity, but rather differ in the style of their creativity.

From the deliberate creativity perspective, two points emerge. First, different problems or aspects of problems can benefit from different mixes of adaptor and innovator ideas. Second, a good facilitator should be able to lead teams to focus on the most appropriate level regardless of the preference or style of individual team members.

Interestingly, several similar facilitation techniques deliberately manipulate this dimension. Some creativity facilitators simply encourage their teams to ask “Why” a problem needs to be solved. Some cultures even suggest asking the question to seven levels of Why. One of the strongest tools of the field of value engineering is to ask the function of an intended solution, then brainstorm on that function or goal. This approach, when given the classic problem of “raising the bridge” would immediately ask “What is the function of raising the bridge?” leading to the more innovative perspective of “making the gap bigger” or “getting the boats past the bridge”. With this question it does not take any great creative genius to propose lowering the level of the water.

Value Engineering has a great advantage over the “Why” question in asking for the “function” that the problem solver is seeking, because in the English language the question “Why” has two quite different answers. Some answers to the question tell us how the question was caused to be, others focus us on the ultimate intentions of the problem solving. While some problems in repetitive systems such as manufacturing can benefit from understanding the chains of causation, in many others it is irrelevant. Asking why I need to raise the bridge might get me “because that’s what the contract says” which leads to “because we want to be paid for doing it right”, which is not a direction with much potential for creative options.

Representing the Problem with External Models

While the ability to perceive, create, and manipulate images in the mind has long been associated with effective creativity (and may be the original meaning of “imagination”), it seems that the use of sketches and physical models can compensate for lack of this talent, while opening the process up to team members and other collaborators.

Spatial Visualization

Spatial visualization is the ability to picture a physical item in one's mind and to infer what it would look like if rotated in various directions. You may have taken tests in which you were asked to pick out which drawing of an object could be a rotated version of another drawn object.

Many great inventors and artists report picturing their creations in detail before producing them, and early researchers found correlations between this ability and performance on standardized tests of creativity. The quest for deliberate creativity leads to the question: can those of lower skill in this area reach the creative production levels of those who have this talent? There is a hint in some research about testing for the ability.

One effective test for spatial visualization is the solving of anagrams, those scrambled combinations of letters that can be rearranged to form known words (e.g. TCAS becomes CATS or SCAT). The better your spatial visualization ability, the faster you can solve these problems. Gavurin (1967) did some methodological research on anagrams to determine if there were any problems with allowing test subjects to manipulate the materials. He discovered that when the anagrams were presented with each letter on a separate piece of cardboard which could be moved around on the table, spatial visualization ability did not affect the speed of solving the problem. As a test developer, he learned that if you want to effectively measure this talent, you must not allow the subject to use any external materials that can be manipulated. On the other hand, this research also means that allowing people to move the letters around externally allows those low in spatial visualization to perform as well as those who excelled in it. This is a good thing for deliberate creativity.

The Use of Models

This advantage to using external representation seems to be the same as in mathematics, where most of us can solve far more difficult problems on paper than we can in our heads.

The table below explores in more detail an analogy between creativity and arithmetic. If I want to multiply two numbers, there are several possibilities. I might know the answer already, although most people have only memorized the answers for multiplying pairs of single digit numbers. A few might be able to calculate the answer unconsciously, but this ability is labeled “idiot savant” because it is usually accomplished by severe defects in other areas. This is what the movie “Rainman” was about.

Some have practiced "mental arithmetic" and have learned tricks to handle problems of three, four, or more digits in their minds. Most of us would take paper and pencil to work it out, with our ability limited by our patience, carefulness, and the size of the sheet of paper. And, of course, most folks would simply use a calculator.

Level	Arithmetic	Creativity
Remembered or Known	Memorized multiplication tables	Knowledge
Unconscious process	"Idiot Savant"	Intuition Incubation
Conscious, internal process	"Mental arithmetic"	Thinking about a problem
External model	Paper and pencil, graphing	Journaling, doodling, writing
External and Social	Group problem solving with chalkboard	Group problem solving with paper, model
External processor	Calculator	?

Applying this same structure to creativity, we note that when given a problem, sometimes we already know an answer; it is part of our knowledge. Other times an answer seems to

rise from our subconscious with no indication of where it came from. We label this process intuition, and we use the term incubation to label the process of waiting for the answer to emerge.

We also have a certain level of ability to solve problems in our minds, but most of do better with paper or some other medium for listing and/or sketching our ideas.

Just as with arithmetic, various techniques enable us to handle more complex and extensive problems, both in our heads and on paper. Part of the function of external models may be to hold for reference more information than we can hold in our heads at one time. When we use paper and pencil to multiply large numbers, we carefully write down the intermediate steps and basically solve lots of little single digit problems with those answers we memorized as children. The writing helps us keep track of our progress and remember our sub-answers.

Imagery and Experience

While Gavurin looked at anagrams of words there is other research that indicates that image focused thinking is more effective. Gier Kaufmann (1980) investigated the usefulness of visual images in the solution of concrete problems. He took problems and puzzles that had already been assessed for their difficulty and presented them in different ways. He took easy, moderately difficult, and difficult problems and presented them to different people as: word problems requiring word answers; picture problems requiring sketched answers; or actually putting the subjects in the physical situation described in the problem.

To solve the toughest problems people did best working in the real situation. The easy problems were solved quite effectively when given as word problems, and presenting them as pictures or real world situations just slowed down the solution.

Problems of moderate difficulty were difficult to solve as word problems, but generally well solved as picture problems, with little advantage to putting the subjects in the real world.

This seems to indicate that sitting around chatting is only going to work for the easiest of problems. With more difficult problems, there is an advantage to drawing pictures to understand and solve the problem. And for the most difficult problems, it seems that you need to just jump into the situation and muddle around until you get it solved.

Three-dimensional prototypes or scale models may also fit this “reality” category. Designers of buildings and products have known for a long time that some people can make sense of blueprints but others really need a physical model to begin reacting to ideas or contributing to a design.

Shared Images

Drawing pictures and manipulating models seems to be very valuable to those working alone, but there also seems to be several advantages for team collaborations. Keeping notes of ideas and facts and work in progress in front of a problem-solving group on flip chart sheets around the room seem to help them handle more complexity.

Blueprints of building or product designs give us a similar capability of looking together at various details in the context of the whole.

Charts such as flow charts and PERT charts can represent complex interactions in a form that allows groups to both see the whole interaction and to focus on simpler details and relationships.

The architect and planner Alexander, noted that while there seem to be a limited number of people who can invent new structural patterns, there are many more who can effectively evaluate those structures, their details, and their implications.

So external models may permit people of higher cognitive complexity to present and manipulate their structural ideas while permitting those who operate at lower cognitive complexity to check specific implications against their knowledge.

Therefore, it would seem that deliberate creativity will often benefit from external sketches, notes, prototypes, and physical models, and facilitators should know a variety of different techniques to draw on for different problems.

Summary

It is important to recognize that as powerful and exciting as facilitation tools seem, their impact is contingent on the changes you want to make in the thinking of people and teams and is contingent on the followership characteristics of the people. Some facilitators are “lucky” enough to always work with the same kinds of people on the same kinds of problems and may think that these tools are universal. Facilitators working with diverse and global cross functional teams will find themselves in a constant process of trying to better understand their teams and target problems, developing hypothesis, selecting or inventing new facilitation techniques, observing the apparent impact of the tools and making a continuing series of adjustments, selecting and inventing even more tools. With talent and luck facilitators are more and more successful at multiplying the effectiveness of the teams and organizations they facilitate.

References

- Alexander, C. (1964) *Notes on the Synthesis of Form*. Cambridge, MA: Harvard Univ Press.
- Gavurin, E. I. (1967). "Anagram Solving and Spatial Aptitude", *Journal of Psychology*, 65, 65-68.
- Hofstede, Geert (1996) *Cultures and Organizations: Software of the Mind* McGraw-Hill Professional Publishing.
- Jaques, Elliott. (1976) *A general theory of bureaucracy*. Heinemann Educational Books: Portsmouth, New Hampshire,.
- Kaufmann, G. (1980) *Imagery, Language, and Cognition*. New York: Columbia University Press.
- Kirton, M. (1994). *Adaptors and innovators: styles of creativity and problem solving*. New York: Routledge.

Kolb Learning Style Inventory available from: Hay Resources Direct, 116 Huntington Avenue, Boston, MA 02116 800.729.8074

Miles, L. D. (1971). *Techniques of Value Engineering and Analysis* (2nd rev.). New York: McGraw Hill.

Osborn, Alex (1953) *Applied Imagination*. Creative Education Foundation