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THE TEAM LEADER AS TEACHER

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ABSTRACT

The VE Team Leader must always be prepared to assume the role of Teacher to improve the training and enrich the experience of construction value team members. The VE team is an ideal setting not only for creative thinking but also for group learning. Each phase of the VE Job Plan provides opportunities to teach, coach and guide team members to maximize their personal contributions and enhance team performance.

Not many of you should become teachers, my brothers and sisters, for you know that we who teach will be judged with greater strictness. -

James 3:1 NRSV

INTRODUCTION

There are many demands on the VE Team Leader, many roles to be filled. The most prominent is that of facilitator for the VE team. But another vital role is that of Teacher, which is different from facilitator and essential in achieving optimum team performance. Because value team members are not equal in training and experience, teaching skills must be applied to help them reach their potential performance.

This discussion is directed to non-CVS

Team Leaders who must lead value teams without the experience of having taught a 40-hour VE workshop. It is presented in four parts: "Who to Teach" and "Who Teaches" outline conditions Team Leaders face which necessitate them becoming teachers and styles for teaching teams; "When to Teach" and "What to Teach" suggest teaching opportunities in all phases of the VE Job Plan and specific teaching aids for the Function and Creative Phases.

WHO TO TEACH

Because all the gathered value team members may not be fully trained and experienced in the techniques and processes of VE, the Team Leader must be prepared not only to facilitate the study, but also to teach VE.

VE Team Deficiencies

Typically, the VE backgrounds of team members vary considerably; they learned VE from different workshops, applied VE under different team leaders and some may be new to VE. To ensure that the VE proposals (VEP) produced by the team are uniform in quality, the Team Leader must work individually with team members to provide the guidance needed for them to fill the gaps in their knowledge and experience. It is important that the Team Leader recognize these differences and coach the persons who need help. Otherwise, the VE study may suffer and results could be less than optimum.

Based on observations of construction value

teams, composed of plant engineering staff members and those assembled by VE consultants, there are two potential deficiencies in team members:

1. Training is variable - Some members have had no 40-hour VE Workshop training.
2. Experience is variable - Some members may be in their first VE study, others in their tenth or twentieth.

These deficiencies may not have a *major* impact on the overall result of the value study. However, strong team members who have full VE training and experience tend to produce more of the most effective VEPs, while the weak team members usually produce fewer and less complete VEPs. Therefore, if the Team Leader takes on the role of Teacher and addresses the deficiencies which team members bring into the study, the results of the study will be enhanced and the VE skills that certain individuals take away from the study will be improved. If the Team Leader ignores the deficiencies, the study will suffer and the opportunity to enrich the study experience of team members will be lost, hurting the individuals and the cause of VE.

Brown' differentiates between training and education. "Training must be more highly organized than education, because the result of disorganized knowledge is confusion. Confused people will not take action, so a training program that does not clarify defeats itself." A highly educated engineer participating in a VE study who has not received VE training can indeed be confused, unable to perform. The Team Leader can help such a person. Brown recommends a training formula: uncover, discover, recover. The Team Leader must *uncover* needs in the minds of team members; then help them *discover* by teaching them useful information which elicits an "Aha!" response; and guide them as they *recover* by applying their knowledge by praising progress. There is "no place for ridicule, sarcasm, or negative critique". Good training utilizes "good-finding as opposed to fault-finding", Brown concludes. Following this advice requires a Team Leader to take an active teaching role when required.

By recognizing team deficiencies and working to reduce them the Team Leader can produce a stronger team effort. The world of vocal music gives us an analogy for the results of real teamwork. A choral group exemplifies the action of synergism, where the whole may be greater than the sum of the parts. If each singer matches the sound of the others, a *new sound*, or blend, emerges, that is better than any of

the members can produce individually. Thus, if all VE team members are "tuned in" to the VE process, their collective results will exceed the mere sum of the parts. That is why all members need to be brought up to the highest level of harmonious performance; that is why the VE Team Leader must be a Teacher.

WHO TEACHES

To become an effective Teacher the Team Leader needs to understand his/her leadership style, as well as how teams can learn and grow into effective work units.

Team Leader

Team Leaders are primarily facilitators. At times they must also be managers, editors, sales persons and teachers. Few are equally skilled in all roles, especially that of Teacher. Larry Miles² recognized that not every value analyst can be expected to be a good teacher. He wrote: ". . . skilled value analysts may entirely fail at the task of teaching and training". Team Leaders, therefore, should recognize their multiple roles and work toward being good Teachers as well as facilitators.

A dictionary definition of *facilitate* is "to make easy", which implies that a person already knows what to do (such as experienced team members responding to instruction). Whereas, *teach* means "to show how to do something" which implies that a person doesn't now know what to do (such as untrained team members needing instruction before proceeding). The Team Leader, therefore, must be prepared to be a Teacher when team members come to VE studies needing further instruction.

LEADERSHIP STYLES

The Team Leader needs a personal awareness of his/her leadership style to be fully effective. Schein³ points out that one's assumptions about people influence his style of leadership:

ASSUMPTIONS ABOUT PEOPLE

1. Rational-Economic: Work for money
2. Social: Need good relationships
3. Self-actualizing: a hierarchy of needs
4. Complex man: different knowledge skills

LEADERSHIP STYLE

1. Motivate, organize and control; responsible for performance.

2. Care for them; set up congenial working conditions.
3. Provide adequate challenge; no need to control.
4. Understand and satisfy each person's needs.

The Team Leader might try to avoid the first style which requires excessive control, or the fourth style which necessitates too much individual attention; both could be disruptive to the VE process. Rather, the second and third styles might be used; that is, operating on the assumptions that team members are social, self-actualizing persons requiring a congenial work environment and adequate challenge to perform well; both could be supportive of the VE process.

There are a variety of models used to describe leadership styles. Luft⁴ describes five different leadership models: Shaman, Mystic, Naturalist, Priest and Magician. While no person is exclusively any one of these, the one model which stands out as an ideal for VE Team Leader is the Mystic: a sensitive, perceptive, visionary, altruistic person who can work to better the group without demanding personal rewards. This is perhaps too idealistic; however, it is wise to try to avoid the tendencies of the other models: calling attention to self (Shaman), cold and impersonal (Naturalist), authoritarian style (Priest) and secretive (Magician), as they detract from the group-centered focus of value studies.

In another model Kolbe³ describes a facilitator as one with an "innate talent for understanding all sides without having to take one." They "can work with varying 'MOs' without conflict. They can also be the glue that keeps others working together---they keep energies targeted." This description of the facilitator encompasses the desirable characteristics of a good VE Team Leader and Teacher.

VE Team Learning

Value team experiences are learning experiences. Fraser⁶ clarifies different types of learning that can occur during value activities, with "knowing in the strong sense" being the highest form. The role of the Team Leader is to help achieve this learning. Acting only as a facilitator or a trainer/coordinator the Team Leader will fall short of this goal. But as a Teacher, the Team Leader might aspire to the highest order objective that team members will not only learn VE principles "as knowledge in the strong sense, but that such principles become internalized and appreciated such that they are part of the participant's normal ways of thinking"⁷. Fraser concludes: "In the range of

workshop leadership conceptions, facilitating can induce the appropriate problem-solving behaviors; training can provide development of appropriate beliefs and knowledge in the weak sense; and effective teaching leads to knowledge in the strong sense"⁸. Thus, the Team Leader has great potential power to influence an understanding of VE if he/she accepts the role of Teacher.

Bradford⁹ says that "most education takes place in group situations. The teaching-learning transaction includes teacher, learner, and learning group. The group is not merely an economical way of teaching; it should be at the heart of the learning process." Thus, the Team Leader becomes a Teacher if for no other reason than a learning group (value team) exists, and can take advantage of this ideal teaching environment. So the group dynamics need to be appreciated for the Team Leader to do effective teaching. Further, Bradford says, "the relationships among learners and between teacher and learners have a great deal to do with the ultimate learning"¹⁰. Nurturing these relationships should be always on the Team Leader's agenda.

WHEN TO TEACH

There are three opportunities for teaching construction value team members: before, during and after the VE study.

Before the Study

Every team member should come to the first day of the value study ready to begin the Information Phase. Sometimes plans and cost estimates have been distributed ahead of time so that the team has already reviewed them. However, often this is not the case and the project documents are placed in team member's hands that first day. Whatever the case, basic VE principles should be known by every team member, because the process will be inhibited otherwise. Thus, some team training may be needed before the Information Phase begins.

Assembling the team at the consultant's office or near the site of the forthcoming study allows the Team Leader to accomplish two important goals: teach the fundamentals of VE and begin to build the individuals into a team. This effort should focus on those who need it most to correct the critical deficiency of missing VE training.

During the Study

Most often the extra training needed to correct deficiencies in team experience occurs during the study. The risk is that too much time is taken away from the study proper by switching periodically to a workshop mode. Also, the needs of individual team members will probably vary widely, and having group training sessions will reduce production time for the well-trained persons. Thus, the Team Leader may need to take on the teaching role on an individual, one-on-one basis. This requires observation of every team member's progress and sensitivity to their needs for coaching to accomplish a particular task.

At a minimum, each phase of the VE Job Plan needs an introduction in the form of a mini-refresher course. As the phase progresses, individuals may need specific instruction. In some instances, the VE process may need to be interrupted briefly to clarify a point or make certain everyone is producing consistent work. This is particularly true of the Development and Presentation Phase, but special help may be needed during the Creative and Analytical Phases as well.

After the Study

Even though the Team Leader assumes the teaching role before or during the study, some additional learning still may take place after the study is over. This is facilitated by an evaluation session following the Presentation Phase. An individual's presentation may have lacked a complete discussion of the advantages and disadvantages of VE proposals; this can be pointed out and ways to improve presentation skills can be discussed. While it may be too late to correct the damage of a weak presentation, it is better to address weaknesses so that improvement can be anticipated the next time. As Blanchard and Johnson¹¹ say, letting someone know quickly and fairly that they made a mistake is a productive way to correct performance.

The purpose here is to focus on the teaching opportunities that exist during most studies. Before-study teaching resembles VE Workshops in a condensed form; after-study teaching takes on the scope of recovery plans to correct problems. By looking at what to teach and how to teach *during* a study, the Team Leader can improve results even when no opportunities for before-study training exist, and perhaps avoid the need for after-study training.

WHAT TO TEACH

Assuming the VE team is assembled and ready to begin work, what are some of the key items that need to be taught by the Team Leader during the study? There are elements of all phases of the VE Job Plan that can benefit from supplementary training for all team members and elementary training for some few. Some of the most crucial which could affect construction VE team performance are contained in the Function Phase and Creative Phase, as described below:

Function Phase

Function Analysis. The creative difference between value and cost studies is function analysis. But function analysis requires a learning process frequently found difficult by technically-oriented people. The verb-noun descriptions seem artificial, arbitrary and even silly. But as Larry Miles¹² said, "the language of function is the language of the heart of the problem." An example exercise is a quick way to teach Function Analysis. Pick up a pencil or paper clip and have the team define the Primary and Secondary Functions using verbs and nouns. It is fast and easy and even fun.

Skipping over function analysis can be a serious omission. Again quoting Miles¹³, to realize the full potential of the VE process, "it is necessary to establish the language of function and stay within this language." Explain to the team that turning away from item names to their functions liberates them to find new creative function-satisfying solutions. Further, a basic tenet of VE requires the use of the verb-noun language, and learning to work instinctively with Primary and Secondary Functions. Caution team members that preparing VEPs without working through functions lets the work slide toward simple cost reduction because the goal of maintaining the primary function can be too easily ignored.

FAST Diagrams. Sometimes FAST (Function Analysis System Technique) diagrams are intentionally omitted from construction VE studies. Routine studies of construction projects, it is argued, do not require this specialized technique. But VE is not a routine process practiced by everyone. It is a unique process which has to be learned. Untrained team members should be schooled in the FAST diagram by way of a simple example (the pencil or paperclip) to demonstrate the thinking process, the "how's" and "whys" of VE. To simplify the process point out, as Snodgrass and Kasi¹⁴ say, that the "how" questions are much easier because they force solutions from the abstract to the specific; do them

first before asking the "why" questions. A stimulating example is to ask the team to determine the primary function of a "marriage" or a "relationship". Even if this exercise is conducted in a separate room for those new to VE, it will serve to bring them into a fuller understanding of function thinking and allow them to participate as equals rather than apprentices. If the project functions can be clarified by a FAST diagram, it should be used. Also, a secondary benefit of team building is achieved, which is sure to enrich the member's experience after they have worked to reach a consensus on an arrangement of primary and secondary functions.

Creative Phase

Brainstorming. No VE study can be complete without a brainstorming session and no brainstorming session can be complete without the full participation of all team members. The objective should be, as Zimmerman and Hart say, to develop "an atmosphere that pulsates with free discussion and exchange of ideas. . .to arrive at alternate solutions to the original design." The Team Leader can encourage reluctant team members by asking for their ideas; but the process itself may be the best motivator. As Fraser¹⁶ points out, "when a member observes another free-wheeling, flexibly, 'playing' with ideas without judging them, then manifesting that same behavior himself becomes less difficult."

To paraphrase Tom Peters¹⁷, the "essence of success" in value studies "is drawing others out, getting them to share their knowledge...The provision of an incomplete or provocative target" (e.g. a brainstorming list) is the forcing device which brings VE "groups to life when orchestrated by a skilled" Team Leader. Just as a seemingly silly idea can lead to a viable one, the suggestion by the Team Leader that an apparently unlikely set of ideas be developed can prod a team member to make a creative leap to a new solution. A lot can be accomplished by asking provocative questions.

Following brainstorming the leader should encourage combining ideas and developing of proposals. This, too, is a teaching function. Teaching sometimes requires listening rather than talking. As Dickenson¹⁸ says, "an effective group leader uses active listening combined with 'I' messages. He listens to what is being said, challenges members, and offers feedback." By just being in the room and available to answer questions the Team Leader can influence the team's performance in a positive way.

The active Team Leader who shares his/her

experience can be a major influence on the teaching/learning process within VE teams. Taking time to teach, some may fear, will have a negative impact on the VE study schedule. The payoff, however, is that motivated, "educated" members will become better teams that produce better results.

SUMMARY

The VE Team Leader must not divorce the facilitator's role from the teaching role if a value study is to have maximum success. Opportunities for teaching VE methodology present themselves whenever a team is composed of people of variable training and experience. Team deficiencies should be dealt with, and this requires teaching. The team environment provides an ideal teaching situation with learning reinforced by other members of the group. Teaching takes time but can be nurtured by the Team Leader who understands his/her leadership role.

While VE training normally is done before a study, and may be done after a study to correct inadequate performance, it is the teaching that can be done *during* the study that deserves an emphasis. Newcomers thrust into the VE process need extra help to optimize their participation.

Each phase of the VE Job Plan presents teaching opportunities. VE texts, workshop memories and VE study experiences can all help the Team Leader become a Teacher for a short time to move individuals and the whole team toward the successful completion of their VE study.

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