

Evaluation of Team Development in a Corporate Adventure Training Program

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Numerous authors in the popular literature have described adventure training programs and the associated team development benefits which accrue for management (Krouwel, 1980; Long, 1984; Van Zwieten, 1984; Wagel, 1986; Galagan, 1987; Gall, 1987; and Malcomson, 1988). Several well-known authorities have called for further investigation into these benefits, noting that a distinct lack of research exists, causing the field of corporate adventure training to have a credibility crisis (Bank, 1985; Hogg, 1988; Crawford, 1988; Darby, 1989).

The intent of this study was to evaluate changes in stages of team development before and after involvement with a corporate adventure training program. Specifically, an experimental group of corporate managers were subjected to an adventure training program, while another control group from the same company did not receive the training. Before and after the training period, both groups were assessed for their level of change on ten items of team development. The control group was not expected to change, since they remained untreated, while the experimental group was expected to improve on all ten items, as a result of receiving the treatment.

In their "breakthrough theme" for 1990-91, the company studied in this research chose to emphasize "improved responsiveness through teamwork" and all divisions of the company were charged with implementing strategic plans aligned with this teamwork theme. Creating a company-wide "Continuous Improvement Plan" to address teamwork required major cultural change for many divisions throughout the company, required behavior changes from employees and management, and required a new approach to work tasks and interpersonal relationships. A paradigm shift away from traditional management

methods and toward a more participatory approach based on employee empowerment was targeted. Training with high impact and strong transfer of learning to the work environment was needed to produce these critically important changes. Such training was expected to be timely and to produce lasting change, while being appreciated by the cost-conscious, high level directors who would bring their units through the program. The program would need to target and impact changes in motivation, cooperation, cohesion and support, which are traditionally the people or interpersonal "soft" issues for managers, particularly those who are often characterized by being "nuts-and-bolts" and "hard-nosed" types. Due to its ability to achieve these ends, adventure training was selected as the principal means for developing teams. Furthermore, the company wanted evidence of outcomes, preferring not to rely solely on enthusiastic testimonies and anecdotes as in the past. They supported evaluation of the training which would substantiate claims of transference and show that the groups had grown and developed into higher functioning teams.

Methodology and Instrumentation

To accomplish the purpose of this study, two intact work units were selected from several groups going through adventure training from an American company involved in the aerospace engineering industry. Selection of these clustered subjects was by no means random, since the goal of the training was to develop teamwork in already formed units. Furthermore, the sample size was small for each cluster (control, $n=11$; experimental, $n=17$) since the nature of adventure training requires small groups, so as to maintain safety, educational effectiveness and suitable group dynamics, and since many company work units are already quite small given their functions. The two groups had relatively similar functions at an equal level of responsibility within the same company. This equivalency was necessary to establish the hypothesis that any changes in the experimental group would be due to adventure training and not to any environmental factors or to deviations in corporate climate, as these would also be expected to influence the control group.

Treatment for this study included a three-day off-

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site adventure training program with typical challenge course events and group initiative activities. These events and activities required that groups work together as teams to collaboratively solve problems and that individuals learn to relate to one another in new ways, using only their available resources. After each event, activity and task, groups debriefed with the help of an experienced facilitator, learned by reflecting on their experiences, and came to understand their development as a team through the many metaphors present in this form of learning (Creswick & Williams, 1979; Beedy & Rathborn, 1983; and Cacioppe & Adamson, 1988).

The instrument used to measure these changes was the Team Development Inventory (TDI) developed by Bronson (1990) and based on the theory of Kormanski and Mozenter (1984) after work by Tuckman and Jensen (1977), and Hersey and Blanchard (1982). The TDI consists of ten items related to team development. It has established face validity and an equivalent forms reliability of .95 (Kormanski & Mozenter, 1984). Individuals responded to each item by circling a number which best represented each member's level of agreement with that item, on a five point modified Likert scale, where 1 was equivalent to strongly disagree and 5 was equivalent to strongly agree.

The TDI instrument was administered pre- and post-treatment, with approximately a four-month period between testings. The long time between testings was desired, since individual anxiety immediately before a program, and group euphoria immediately after, are believed to artificially depress and elevate scores on self-report measures (Marsh, Richards & Barnes, 1986). Furthermore, longitudinal measurement was considered more likely to provide evidence of the transfer of learning. The pre-test was completed during initial diagnostic meetings with subjects at least one month prior to their attending the adventure training program. The post-test was completed during follow-up meetings with subjects at least two months after the formal training had ended. Completion of the TDI was fully anonymous and coded stamps were used to match pre- and post-test versions of the test. Focused interviews with the sub-

jects were also completed during the follow-up period to provide qualitative support for, or explanation of the quantitative findings.

Results and Discussion

Ten two-way analyses of variance,¹ one for each item on the instrument were conducted to determine whether there were significant differences in the

Table 1: Means and standard deviations (in parentheses) from the two-way analysis of variance for each of the 10 items from the Team Development Inventory (TDI). An asterisk indicates that the given mean was significantly different from the others in the post hoc t-tests with a probability of $p < .05$. In all analyses, there were eleven subjects in the control group and seventeen subjects in the experimental group.

Item Statement	Test	Group	
		Control	Experimental
Team members understand group goals and are committed to them.	Pre	3.09 (1.04)	2.94 (0.96)
	Post	3.27 (1.01)	3.59 (0.87) *
Team members are friendly and interested in each other.	Pre	2.91 (0.70)	2.82 (0.64)
	Post	2.72 (0.79)	3.71 (0.68) *
Team members acknowledge and confront conflict openly.	Pre	3.27 (1.10)	3.00 (1.12)
	Post	3.27 (1.10)	3.35 (0.70)
Team members listen to others with sensitivity and understanding.	Pre	2.64 (0.67)	2.71 (0.69)
	Post	2.73 (0.79)	3.59 (0.71) *
Team members are prompt in making decisions and initiating solutions.	Pre	2.91 (1.04)	3.00 (0.79)
	Post	3.09 (1.14)	3.59 (0.80) *
Team members recognize and respect individual differences.	Pre	2.46 (0.69)	2.65 (0.86)
	Post	2.46 (0.52)	3.35 (0.93) *
Team members have high standards for their own work and the team's performance.	Pre	3.64 (0.51)	3.41 (0.87)
	Post	3.73 (0.65)	4.00 (0.61) *
Team members look to each other for consultation on resolving challenges.	Pre	3.46 (0.69)	3.29 (0.85)
	Post	3.64 (0.81)	3.53 (0.80)
Team members recognize and reward team achievements.	Pre	2.54 (0.93)	2.77 (0.66)
	Post	2.36 (1.12)	3.53 (1.13) *
Team members encourage and appreciate comments about team efforts.	Pre	3.18 (0.87)	2.82 (1.02)
	Post	3.09 (0.83)	3.71 (0.69) *

results for the control versus the experimental group, for the pre- versus the post-test, and for the interactions between these two factors. An interaction was noted for eight of the ten items, indicating that at least one of the means differed from the others. In each instance, the experimental group mean after the treatment was significantly higher than the pre-test mean for either group and the post-test mean for the control group (see Table 1).²

Eight of the ten item statements on the TDI showed positive changes for the group which received

treatment and no changes for the one that did not. No significant change was noted with regard to acknowledging and confronting conflict or in consulting one another on challenges.

These discrepant findings may be explained by examining the composition of this particular team. The experimental group was made up of two different factions within the same division: one faction had to get facilities up and running on time and within budget, while the other had to make sure those facilities complied with safety and environmental standards. It was a classic marriage of adversaries forced to collaborate in order to achieve common goals. Although the adventure training treatment seemed able to bring about many changes, it fell short in its ability to deal with the issues of conflict and consultation, likely due to the deeply rooted dysfunction of this particular group in relation to their past history of being strongly divided. Perhaps a longer treatment period, or adventure training of a different nature, oriented toward greater collaboration between factions, could resolve this issue in the future.

Comments from interviews with the subjects, held during the follow-up period, which focussed solely on the impact of the adventure training, tended to substantiate and explain these findings. With regard to improvements in team development, members relayed the following:

The problem-solving and some of the tasks we were given seemed impossible. It didn't matter all that much whether we liked each other. But, as professionals, we saw we could be highly successful if we were working together. Learning that together was very powerful.

We were sharing an example the other day. When we looked at what we were asked to do, it was very clear that it was impossible as individuals. Even with five or six of us, it looked impossible. But then, doing the training exercises, when you start trusting each other and relying on the other one's strength—and listening, you know—it was really exciting to see what could be done. And that feeling has carried over.

We are able to talk to each other now, not as strangers. It's more like, "We're all part of this team and we know each other." These things have made my job easier and, hopefully, their job easier in dealing with me.

We are more interested in each other. When we did the training we got to see each other in a different way. We got to see each other as individuals, something way beyond just the images we project at work. The training was the most important factor in our getting more successful in generating this.

With respect to the factional split, although no quantitative improvement was noted through the statistical analysis of the TDI, comments from a few individual members supported the notion that the split was slowly changing for the better:

I have seen the biggest change in the relationship between the two [factions], really. We have a long history of not positive or fruitful communications in working together. I think there were some real bridges built. Phone calls get returned now, instead of "the last thing in the world I want to do is talk to you guys." There's quite a bit of a reduction in the finger pointing, even in the way we bring problems to one another. In that area the training was quite helpful. We began to see each other as valuable team members.

What we were trying to get out of the team building training was to improve teamwork across directorate lines. We have since set up a number of groups that include people from both [factions] of the house, and our customers, where they get together monthly to review progress. We've also seen the development of an inter-directorate working group at the supervisor level where they get together twice a week to talk about common problems and what they need to do to take care of the customer needs, that started about a month after the training [finished].

We deal with the environmental people and the maintenance people. We have sort of been at logger heads at times and now we're able to sit down and resolve our problems much more easily and more efficiently than in the past. It used to be that we'd point a finger and say, "It's not my job, it's your job."

Lastly, several comments indicated positive changes around many items of teamwork found on the TDI and noted by statistical analysis to have improved as a result of the adventure training:

Our whole management thrust has been to improve responsiveness through teamwork. The physical activities we did at the training reinforced that and made it clear what we can accomplish when we come at it as a team. The activities also focused on communication and planning, very important things for our teams to be successful. We retained that awareness after the training and are getting better at them.

The participants in the training are not a together work team. [They are factioned.] We have different areas of responsibilities within projects. We come into contact only at the beginning of a project or if there is a problem. What helps us more than anything else is that our top management have developed a better relationship. We see that in the notes and correspondence they send each other that fall down to us and how they talk about working on problems that affect both groups. It's not perfect, but I don't think that form of communication existed before the training.

I was about the lowest level of manager that participated in the training. The rest of them were high level managers, up to two levels above me, right up to the VP level. Since that time I have developed a much more comfortable feeling dealing with these upper managers. I think that the cooperation between managers is considerably greater than it was prior [to the training]. As an example, I was lifting up that director-level guy and

shoving him through the spider web. Here we were, passing him through and wanting not to drop him. Talk about hands on! My dealings with these people since that time have been on a much more cooperative level.

We also have team meetings where thanking and giving recognition happens. I think we are getting more recognition expressed since the training. It fits into the overall continuous improvement process. One of the things that we teach is to empower people and reinforce their efforts. Once people experience that they say, "Gee, this really works; thanking people for what they do." I have seen a marked improvement. Team awards are now recognized by the company and supported, in addition to the individual performance awards, we have had all along. Now that we recognize team efforts we are seeing a lot more team effort; people shifting their own priorities in order to help group projects.

Conclusions and Recommendations

Overall, no changes in the control group, coupled with increases in the experimental group, suggest that improved team development did occur for this intact work unit. Since these groups were cluster sampled from all company groups involved in the corporate adventure training program, a similar impact may be generalized to others to the extent that they were representative of other work groups. However, generalization of these findings beyond this particular program or company studied is not recommended by the researchers.

Although this study suggests that positive transfer from corporate adventure training did indeed occur in this instance, it does not make any claim as to the extent of that transfer, its lasting effect beyond the two-month period studied, or the program elements which contributed to transference. More study is needed. Future research ought to examine any trends in team development which take place over time during a corporate adventure training program and should attempt to measure the half-life of transfer effectiveness in relation to various follow-up procedures.

Notes

1. Despite the small sample sizes, normality tests for kurtosis, skewness and homogeneity of variance failed to find any serious concerns, hence parametric statistics were applied to the data.

2. Post-hoc t-tests were used as opposed to Fisher PLSD or Scheffé tests, due to the small sample sizes.

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