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The development of interpersonal trust has been a key benefit of team building programs (Agran, Garvey, Miner & Priest, 1993). The acquisition and maintenance of trust is critical to the success of a team and goes hand in hand with cooperation and communication. It is reciprocally integrated with all other aspects of human relationships and its enhancement remains a common goal of most corporate adventure training (CAT) programs (Reina, 1993). To date, the program components responsible for the development of interpersonal trust have not been identified. Some researchers (Reina, 1993) have postulated that the inclusion of human touch brings about trusting behaviors. Other authors (Agran, Garvey, Miner & Priest, 1993) have suggested that the physical activity level of adventure experiences is what leads to the creation of trust.

### Purpose

The intent of this study was to determine the role that physical aspects of CAT programming played in the acquisition and maintenance of trust as an integral part of teamwork. If trust should be influenced by physicality (the use of physical activities), then providers and clients interested in developing trust would be sensible to include more of these experiences in their programs.

### Methodology

Subjects were 75 employees from a New Zealand high-technology computer company. They were randomly assigned to three groups of 25. The company was interested in educating employees in a variety of team skills. Although no intact units existed in the company, they were newly committed to a total quality management approach that utilized newly formed teams for special projects. To this end, employees could find themselves working on a number of different teams along with several previously unfamiliar coworkers for either brief or extended periods of time.

Treatment consisted of a 2-day corporate adventure training program of team building group initiatives, each followed by thorough debrief discussions. Two groups received these activities, from the same facilitators, but with different types of challenges.

Activities for the first group were more physical in nature (the Wall, Nitro Crossing, or Spider's Web), while activities for the second were less physical (Towers of Hanoi, Traffic Jam, or Porcupine Progression). The last group was a control for this study (and received a mix of approaches after study completion).

Instrumentation for this study was the group version of the Interpersonal Trust Inventory (ITI-g). The ITI-g measured trust in five sub-scales (acceptance, believability, confidentiality, dependability, and encouragement) and overall trustworthiness for groups (Priest, 1995). Overall trustworthiness was expressed as a percentage from 0 to 100. Each of the five subscales were calculated from a combination of two responses. First, subjects disclosed their level of agreement for each subscale on a modified Likert-type scale ranging from 1 = Strongly Disagree (this is never the case for my group) through 3 = Neutral (this is the case for my group half the time) to 5 = Strongly Agree (this is always the case for my group). Second, they responded to a semantic differential of 20 bipolar adjectives (four for each sub-scale), with brief explanations or clarifications of each adjective, by placing an "X" at the point between the words and descriptions which best represented their group (measured from 0 to 5 inches). The subscale score was calculated by adding the first response (out of 5) to the average of the four second responses (also out of 5) and therefore ranged from 0 to 10.

This instrument has face validity as established by a panel of experts in attendance at the 1992 AETD Research Conference (held for the express purpose of developing new instruments). It has a test-retest reliability of 0.93 and has an established and confirmed factor structure and predictive equations for the five subscales (Priest, 1995). The ITI-g was given during the orientation session one month before the program began (when groups were newly formed) and acted as a covariate to handle any inequivalencies which might later develop among groups. Then, the ITI-g was administered four times over the course of this study: one week before, at the start and at the end of the program, and two months afterwards (when the groups were reunited at work).

## Results

Attrition was not a problem in this study as all subjects completed all four rounds of the ITI-g. Data met normality assumptions and were analysed using a 3 x 4 (treatment group by test time) two factor ANCOVA (with the orientation test serving as the covariate). Adjusted cellular, marginal and grand means for overall trustworthiness; and the five trust sub-scales are summarized in Table 1. The omnibus F-values for the interaction of factors (int.) and for the main effects of treatment groups (grp.) and test times (test) were also presented. Post hoc analysis by Scheffe test identified significantly different means (highlighted on the table by bold face typing).

## Discussion

No significant interaction was found for overall trustworthiness; however, double main effects were obtained across both treatment groups and test times for this variable. This finding meant that differences existed among the means for groups and tests. Closer

examination after the fact showed that all groups increased their overall trustworthiness after the CAT program and on the average both the more and less physical groups gained considerably more trustworthiness than the control group. Apparently both programs were successful at improving the levels of interpersonal trust regardless of the type of activities utilized. Next, the five subscales were investigated to determine exactly which components of trust changed across the test times and among groups.

Significant main effects were found only on test times for the acceptance subscale and only on treatment groups for the believability subscale. These outcomes suggested that groups improved their levels of acceptance as a result of the CAT program and that both the more and less physical groups made significant gains beyond the control group in levels of believability. Apparently, the CAT program (regardless of activity content) was effective at improving these two subscales in partial contribution to improvements in overall trustworthiness. By performing any task under conditions of adversity, these subjects commented that their development of mutual trust was enhanced more so than if they had been in a classroom session without the shared uncertainty.

No significant differences at all were obtained for the confidentiality subscale. This suggested that confidentiality did not change for any of the groups or over any of the test times. The control group was not expected to change; however, neither the more or less physical programs appeared to influence confidentiality in any way. Perhaps confidentiality is a function of the privacy maintained by a group during the thorough debrief discussions held after each activity and not the physicality. Furthermore, these debriefs associated with both more and less physical activities may have been sufficient to maintain confidentiality by subjects not sharing private information outside their groups. Nevertheless, the level of physicality in a program did not appear to play any role in confidentiality, but the act of debriefing might have had some impact on this subscale.

Significant interaction was found for a last pair of subscales: dependability and encouragement. The significantly different adjusted means were associated with the more and less physical groups during the test periods held after the CAT program. This commonality suggested that both these groups made significant gains in levels of dependability and encouragement as a result of their respective programs, and that the more physical group obtained greater gains than the less physical one. Apparently, the physical nature of the activities could influence how groups viewed their membership in terms of being reliable at carrying out tasks and by supporting others to do so. In performing the more physical tasks, subjects commented that they were obliged to care for one another's safety to a greater degree than they might have in less physical activities. Perhaps the physical risks associated with common CAT programming activities caused subjects to rely on each other, or to assist and reassure each other, more so than when facing mental or social risks.

## Conclusions

IMAGE GRAPH18. Figure 1:

Overall trustworthiness improved for both the more and less physical groups (but not the control) as a result of these two groups' participation in a 2-day team building CAT program. Four subscales of trust contributed to these improvements and one did not. Dependability and encouragement increased for both groups after the program and gains were greater for the more physical group than for the less physical. Similar improvements were also noted for acceptance and believability. Confidentiality was not effected by the CAT program and its enhancement may not have been a function of the program activities, but rather of the debriefing discussions.

Clearly, participation in either CAT program led to the development of enhanced trust among group members. However, participation in more physical activities led to greater development of a willingness to depend on and to encourage others than did participation in less physical activities. Therefore, physicality (the use of physical activity) was speculated to have had a unique influence over group members coming to rely on and support one another because of the presence of physical risks to safety. Perhaps the human touch component of physicality was also responsible (Reina, 1993). Further research should examine the probability of this speculation.

## REFERENCE

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## REFERENCE

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