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Team Training: Does It Increase Satisfaction and Improve Performance?

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Executive Summary

In the global environment of increasing technological change, companies are looking for alternatives to traditional hierarchical organizational structures in order to maintain the competitive advantage that is necessary for their survival. Increasingly, they are turning to self-directed work teams in pursuit of high performance. But building team-based organizations requires challenging behavioural changes and a well-designed program that provides training not only in technical but also in personal skills. Based on her study of seven work teams in five Canadian organizations the author provides detailed advice on how to design a training program that will succeed.

- A strong, visible commitment by the organization's leadership to supporting teams will have an important impact on their success.
- Problem-solving, team-management, and conflict-handling skills are key factors that lead to higher team performance and satisfaction. They are all trainable skills.
- Team training will be more likely to succeed if it occurs periodically over time, rather than all at once.
- The success of interpersonal training will be increased if the team follows it together as a group, rather than separately. The same is true of technical training.
- Teams should be assessed before training to determine the members' level of team maturity and to adapt the training to the team's progress. Surprisingly, assessments are often not done. The sequence of training is vital to the growth and development of teams.
- Team leaders should receive additional training on such topics as giving and receiving feedback, handling conflict, and valuing diversity
- Team members should be held accountable for what they have learned. A lack of follow-up on the effectiveness of training may undermine it, since team members may conclude that the training is not important to the company
- Several companies in this study did not train members specifically in how to conduct themselves in teams, even though this type of training appears to increase the likelihood of success, as does training employees on how to train others, which encourages peer learning.

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About the Author

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Work Teams in a Global Environment

Organizations today are faced with the challenges of globalization and increased technological change (Betcherman and Chaykowski 1996, 1). Because traditional hierarchical and functional organizational structures are inadequate in addressing the dynamic, complex, and demanding environment that is facing them, companies are now forced to develop new approaches (Beck and Yeager 1996; Mohrman et al. 1995; Katzenbach and Smith 1993; Fisher 1993; Wellins 1992; Huszczo 1990). Team-based organizations are an increasingly popular alternative, since teams are an appropriate structure for implementing new company strategies (Martocchio and Baldwin 1997; Beck and Yeager 1996; Mohrman et al. 1995; Wellins 1992; Huszczo 1990).

High-Performance Strategies

There is increasing anecdotal evidence that demonstrates that team-based structures lead to the high-performance organizations that maintain the competitive advantage necessary for survival within a continuously changing environment. For example, 'Motorola, recently acclaimed for surpassing its Japanese competition in producing the world's lightest, smallest, and highest-quality cellular phones with only a few hundred parts versus over a thousand for the competition, relied heavily on teams to do it. So did Ford, which became America's most profitable car company in 1990 on the strength of its Taurus model' (Katzenbach and Smith 1993, 15).

The multiple skills, experiences, and judgments of team members working together inevitably produce more effective results than do a number of workers operating within individual job roles and responsibilities, and the challenge to find the ideal candidate who 'knows it all' is decreased substantially by bringing the different skills and expertise of individuals into teams to perform work together (Wellins et al. 1990, 6). Furthermore, 'teams are more flexible than larger organizational groupings because they can be more quickly assembled, deployed, refocused and disbanded, usually in ways that enhance rather than disrupt more permanent structures and processes' (Katzenbach and Smith 1993, 15).

Training for Change

Building and sustaining team-based organizations requires not only enormous change within traditional and hierarchical structures but also challenging behavioural changes from workers, supervisors, and management (Katzenbach and Smith 1993; Wellins et al. 1991; Zenger et al. 1994; Beck and Yeager 1996; Fisher 1993). The training function must address not only the technical skills of workers but also interpersonal skills, including skills in communication, conflict handling, group problem solving, team management, and team leadership.

It has been found that high-performing teams have received much more training than low-performing teams (Yeatts and Hyten 1998, 181). However, it is difficult to draw conclusions about the exact impact of training on teams without assessing the training programs themselves.

Current Research

Much of the research on teams provides only anecdotal evidence, which is at times contradictory. Furthermore, methodological weaknesses make the interpretation and generalization of the results of the empirical research that has been done difficult, since team participants who have had no prior association with each other are often brought together: the team structure develops from their brief interaction, the tasks are quite simple, readily learned, and require no expertise, and they entail no risks that would involve important values or status for the participants (Modrick 1986, 131). They therefore may not adequately reflect the reality of teams within organizations. The present body of knowledge concerning the structure, operation, performance, and training of teams is therefore insufficient for building an adequate technology of teams (130).

It has been found that high-performing teams have received much more training than low-performing teams.

To help fill this gap this study compared five organizations in the manufacturing and service sectors using an anonymous survey on team satisfaction and performance that was given to each team member. Structured interviews were also administered by the researcher to a random sample of the selected teams. The different types of training topics, methods, and designs were compared, and the levels of team satisfaction and performance were measured in order to draw conclusions on the effectiveness of team training.

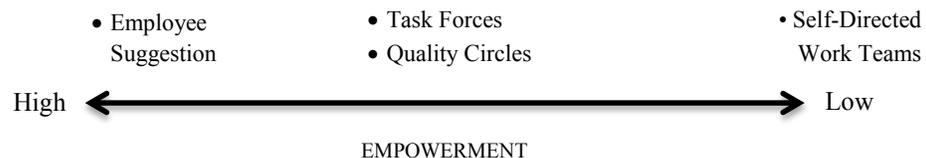
Training Self-Directed Work Teams

Empowerment in Work Teams

A self-directed work team (SDWT) is 'a group of employees who have day-to-day responsibility for managing themselves and the work they do with a minimum of direct supervision. Members of an SDWT typically handle job assignments, plan and schedule work, make production and/or service related decisions, and take action on problems' (Fisher 1993). Building teams within organizations requires behavioural changes, because employees will assume numerous management tasks while working in flexible teams instead of in narrow functional departments with individually set objectives. This change affects the role of supervisors, who will have to reevaluate the hierarchical and often bureaucratic practices of the traditional structure.

Consequently, empowerment in work teams 'is not just an incremental change; it is a transformation of the workplace' (Fisher 1993, 4). Because it gives individuals greater control over their objectives and holds them accountable, empowerment in teams may be viewed as a 'continuum of employee involvement with lower empowerment techniques like selected employee input on projects on one end, ongoing employee task forces and quality circles in the middle, and higher empowerment processes like self-directed teams on the other end' (figure 1).

Figure 1
Continuum of Empowerment



Source: Fisher (1993, 14).

Traditional Roles within Organizations

The traditional organization is typically management-driven. Managers and supervisors describe their jobs using words such as 'plan,' 'organize,' and 'control' (Fisher 1993).

But in team-based organizations they use words such as 'lead,' 'coach,' and 'train.' Table 1 describes the key differences between organizations using self-directed work teams (SDWTs) and traditional organizations. 'Leadership behaviour for team development stands in stark contrast to the traditional authority model. The truly effective group leader is enabling rather than controlling, empowering rather than overpowering, and facilitative rather than coercive' (Laiken 1994, 1). In a SDWT, leadership is not defined by position but by function and competence.

Empowerment in work teams gives individuals greater control over their objectives and holds them accountable.

Table 1
SDWTs vs. Traditional Organizations

Self-directed work teams	Traditional organizations
Customer-driven	Management-driven
Multiskilled work force	Work force of isolated specialists
Few job descriptions	Many job descriptions
Information shared widely	Information limited
Few levels of management	Many levels of management
Whole business focus	Function/department focus
Shared goals	Segregated goals
Seemingly chaotic	Seemingly organized
Purpose/achievement emphasis	Problem-solving emphasis
Higher worker commitment	High management commitment
Continuous improvements	Incremental improvement
Self-controlled	Management controlled
Values/principles-based	Policy/procedure-based

Source: Fisher (1993).

Building Productive Teams: Strategies and Pitfalls

The objective of team training is to develop the potential of individual team members to work together to be more effective than just the sum of each individual's performance taken alone (Lawlor and Handley 1996, 148). It attempts to develop the 'awareness, understanding, knowledge and skill of team members in six areas: coping with change, accepting responsibility, functioning as a team, achieving personal and team growth, engaging in critical thinking, and working on continuous personal improvement' (Harrington-Mackin 1994, 145). According to Harrington-Mackin (143), effective training includes:

- Allowing some control and self-direction in the learning process
- Establishing clear links between past experiences and new skill development
- Encouraging active participation and providing opportunities to actually do the tasks
- Allowing for practical application of new material
- Giving frequent, specific and accurate feedback to the participants
- Encouraging participants to ask questions.

Equally important is avoiding the common pitfalls of team training (Huszczko 1990, 37-41):

- Viewing teams as if they were 'closed systems' insulated from their environment
- Not using a systematic model to plan the team development
- Starting team training without assessing team needs
- Sending team members to team training individually rather than collectively
- Assuming that all teams are basically alike
- Not holding teams accountable for using what they learned in team training.

*In a SDWT,
leadership is
not defined by position
but by function and
competence.*

The Stages of Team Development

Team-based organizations are growing at a rapid pace. Manz estimates that '40 to 50 percent of the workforce could be in some kind of empowered work team environment by the turn of the century' (1997, 7). In successful team-based organizations, new team members or leaders spend 20 percent of their first year in training activities (Fisher 1993; Wellins 1992); high-performance organizations tend to invest more money in training than do other companies (Vander Linde et al. 1997, 21). Employees in team-based organizations are no longer trained on how to do only one job: they often rotate among positions in the team and therefore must be trained to perform each job. Because the sequence of training is crucial to a successful training process (Ray and Bronstein 1995, 167), the stages of team or group development must be understood when designing a training program. Table 2 shows the developmental stages identified by Tuckman (1965), which include forming, storming, norming and performing, along with modifications suggested by Beck and Yeager (1996). In the forming stage, Tuckman suggests, members need to become oriented to the purpose of the group and the interests of individual members. Beck and Yeager add that at this stage the team's mission must be clarified, its goals and roles defined, and its work procedures established: 'At the outset, a team has to form around a clear purpose and then focus on the best ways to accomplish that purpose' (53).

Table 2
The Stages of Group Development

Stage of Development	Tuckman	Beck and Yeager
Forming	Members become oriented to purpose of group and interests of individual members.	The team's mission is clarified, its goals and roles defined, its workflow procedures established.
Storming	Tension often arises as members provide suggestions on tasks and procedures and try to influence each other.	The storming stage may or may not occur: some teams may be able to focus and become productive without storms.
Norming	Storming turns into norming. Team members start trusting each other, creating group cohesion.	Storms are due to ambiguous roles, goals, procedures, and missions. These problems must be resolved before norming can be reached.
Performing	Members have learned to work interdependently. The final and most productive stage of team development.	Teams often move beyond performing and burn out. Leaders must revitalize the group.

Tuckman suggests that in a group's development, there is often much tension at the storming stage, as members provide suggestions for both tasks and procedures and generally attempt to influence each other. Beck and Yeager argue that the storming phase is not necessarily inevitable, however: teams may become productive without storms (1996, 54). Nor does storming automatically turn into norming, the phase characterized by

group cohesion, where individuals start trusting one another. The storms that occur in teams are due to ambiguous roles, goals, procedures, and missions. These problems must be resolved before the group can reach the norming phase.

The performing stage is usually the most productive, because members have learned to work interdependently. Although Tuckman sees this as the final stage of team development, Beck and Yeager warn that 'teams often move beyond performing and . . . become burnt out. . . If leaders don't assume that performing is the endpoint, they can counter any leveling-off by refocusing and revitalizing the group' (1996, 54).

Sequencing Training

Training that follows an appropriate sequence has a key role to play in a team's development. In the forming stage, training must help members get to know each other better, develop a team agreement, and set goals and objectives (Ray and Bronstein 1995, 168). Training in the forming stage will equip the team to survive the storming stage, when training in conflict handling will also be needed (170). In the norming stage, training should address unwritten rules that have developed but have not been included in the original team agreement. Training should be given on how to train and orient new team members, to further develop the autonomy of the team (171). In the performing stage, training should focus on cross-team problem solving, as well as problem-solving skills. There should also be more discussion of the business itself in order to maintain the interest and energy of the team members (172).

Types of Training and Team Performance

Gladstein emphasizes that performance is a very complex issue and that it is not improved through training alone. The group processes and structure, as well as the organizational structure, must also be considered. He has demonstrated that 'open communication, supportiveness, active leadership, experience, and training are positively related to ratings of group satisfaction and performance' (1984, 511).

Salas et al. (1992) suggest that only when team members have received effective 'operational team skills training'—that is, training in understanding task requirements and operational procedures and in acquiring task information—as well as effective 'generic teams skills training'—that is, training in working in teams, adapting to varying situations, communicating effectively, and so on—can the team perform satisfactorily. Beatty and Chisholm (1996) have found that problem solving, team management, and conflict handling are key factors affecting team performance and satisfaction and that they are all trainable skills.

Mackay (1993) suggests that training in technical skills, business skills, and personal skills is important for effective team performance. (Wellins (1992, 27) uses different terminology to describe similar skills.) Training in technical skills would relate to the tasks required to carry out the day-to-day operations of the work effectively (Mackay 1993, 135) and would involve cross-functional training so that members could rotate jobs. Training in business skills would involve training in identifying problems and implementing improvements. Skills in statistical process control, in the use of various quality tools, and continuous improvement techniques, and in trouble shooting are important here (Wellins 1992, 27). Training in personal skills involves training team members on giving and receiving feedback, handling conflict, valuing diversity, working in teams, and training and coaching. Orsburn et al. (1990, 271) suggest that team members need training 'in work-team awareness, technical skills, interpersonal skills, problem solving and administrative procedures.' Similarly, Harrington-Mackin (1994, 144) proposes that teams must be trained in work flow and processes, and in how to interact with and relate to team members.

Problem solving, team management, and conflict handling are the factors affecting team performance and satisfaction—all trainable skills.

Training needs may differ according to the maturity level of the team.

It is argued that effective training must be given over time and not all at once (Harrington-Mackin 1994; Wellins 1992; Orsburn et al. 1990). Furthermore, Varney (1990, 125) suggests that the success of team training will increase if it is given to all team members together, rather than to individual members who attend the training on their own and then share it with the rest of their team.

Training needs may differ according to the maturity level of the team. Thus the training function must remain flexible and adapt to maturity levels. The trainees must in all cases be put first; the trainer must consider what the trainees want to learn and the motivation level of the trainees must be taken into account (Bentley 1990, 28). Wellins proposes that team leaders should receive additional training on coaching for success, reinforcing effective performance, encouraging supporting initiatives, and leading work teams (1992, 27).

Measuring the Effectiveness of Training

D.L. Kirkpatrick has developed a framework for evaluating training based on four criteria, or levels of evaluation: trainee reactions, trainee learning, changes in trainee behaviour on the job, and organization results (table 3).

Table 3
Kirkpatrick's Four-Level Evaluation Model

Level	Questions
Trainee reactions	What are participant's reactions to the training? What do they plan to do with the material?
Trainee learning	What skills, knowledge, or attitudes have changed? By how much?
Changes in trainee behaviour on the job	Did participants apply on the job what they learned in training?
Organization results	Did the on-the-job application produce measurable results?

Source: Adapted from, Was it the training?, *Training & Development* 50 (March 1996): 29.

Trainee Reactions

Trainee reactions are evaluated by measuring how trainees feel about the training program. Trainees usually record their feelings on post-session questionnaires about the value and depth of the course. Although a trainee's feelings may not accurately gauge what has actually been learned, this method is most commonly used by organizations because it is inexpensive, quick, and easy to administer. Furthermore, it does provide trainers with useful feedback about problems in the training (Martocchio and Baldwin 1997, 16).

Trainee Learning

The trainee-learning method of evaluation considers whether the knowledge, skills, and attitudes of the trainees have changed. To measure acquired knowledge, a test relating to the facts, principles, or rules relevant to the training topic needs to be administered before and after the training. To measure acquired skills, the trainees must be observed using newly acquired skills in an actual or simulated work environment.

Trainee Behaviour

To measure changes in trainee behaviour on the job, trainees are observed to see what they actually do as a result of a training program, that is, to see 'the extent to which an employee generalizes knowledge and skills learned in training to the workplace, as well as maintains the level of skill proficiency or knowledge learned in training' (Martocchio and Baldwin 1997, 16). Some techniques include conducting a systematic appraisal of on-the-job performance and evaluating a control group which did not receive the training. These techniques should be used before and after the training is administered.

Organizational Results

The fourth method in Kirkpatrick's model identifies how training changes organizational functions or outcomes such as reductions in costs, employee turnover, absenteeism and grievances, and improvements in quality and productivity, results that are important for an organization's competitive advantage (Martocchio and Baldwin 1997, 16).

Team Training in Five Organizations

To judge the impact of team training practices on team performance and satisfaction the experience of five team-based organizations in the manufacturing and service sectors was investigated for this study. Based on a review of the literature, it was predicted that the more training a team was given, the higher the team performance and satisfaction scores would be. However, it was also predicted that this would be the case only when the training was adapted to the level of development and maturity of the team. Moreover, if the training was to have an impact on team performance and satisfaction it would have to address both technical and interpersonal skills. It was also predicted that the teams would be more effective if the members had followed the training as a team, rather than individually. Data was collected using team surveys and interviews.

The Team Survey

The team survey was developed from a review of previous research in the area of group dynamics and group performance (Beatty 1995). To date, over 1,250 surveys have been administered to different teams in organizations in Ontario, Quebec and Alberta to obtain data on team performance, satisfaction, conflict-handling skills, negotiation of norms, and problem-solving skills. The results gathered from these surveys have demonstrated that group problem solving, team-management practices, and conflict-handling skills lead to superior team performance and satisfaction.

In this study, the survey was distributed in the summer of 1998 to all members of the SDWTs that participated. A covering letter assured the participants that the questionnaire would remain anonymous and completely confidential, that they were not obligated to participate, and that they could withdraw at any time without reason or consequence. Of the 52 surveys distributed to the participating organizations, 49 were returned (a response rate of 94 percent). The survey collected data on the level of satisfaction and performance experienced by the team members. The team scores were calculated by averaging the scores obtained from all valid surveys received.

The Interview

Twenty-nine confidential structured interviews were conducted by the researcher with a random sample of the team members that completed the survey. The number of team members interviewed was determined by the researcher's judgment of the amount of new information that could be obtained by interviewing subsequent members. In some cases, the number of interviews was also determined by the team members' willingness to participate in the interview. The interview allowed the researcher to gain information on

both the technical and interpersonal team training that was received by the teams, as well as the training methods, designs, and procedures used by each organization.

Company and Team Characteristics

The study included two organizations in the service sector and three in manufacturing. Table 4 provides an overview of the organizations and teams that participated in the study.

Table 4
Overview of the Participating Organizations and Teams

Company	Organization Type	Number of Employees at SDWT Site	Team Size	Team Maturity (years)	Job Rotation	Interaction within Team
A	Manufacturing	70	6	1 1/2	To some extent	25-50%
B	Manufacturing	800+	7	4	To a great extent	100%
			9	3-4		30-100%
C	Manufacturing	150	17	4	To a great extent	80-100%
D	Service	1,000+	8	1 1/2	Not at all	10-90%
			9	3	Not at all	90-100%
E	Service	330	6	2	To a limited extent	15-50%

Company A

Company A, a unionized manufacturing firm, is one of North America's leading suppliers of construction materials. The electrical department had been functioning as a team since 1992, even though the company had officially implemented the SDWT at the site only one and a half years before the study. The SDWT had day-to-day responsibility for managing itself and running the electrical department under minimum supervision. Team members handled job assignments, planned and scheduled work, made service- and production-related decisions and took action on problems regarding electrical maintenance.

Roles within the six-member team (five members and one leader) rotated to some extent: each member had certain areas of specialty but could also work on all machines, and thus all the jobs were interchangeable. The team did, however, recognize the expertise of different members and would call on them when necessary. The role of the troubleshooter rotated within the team every week. On average, each team member worked with at least one other member from 25 to 50 percent of the time.

Company B

Company B is a unionized manufacturing firm producing synthetic specialty fibres and yarns. Two teams that were responsible for the functioning of different production machines participated in the study. The SDWTs at company B held the day-to-day responsibility for managing themselves and for running the assigned machines under minimum supervision. Team members handled job assignments, planned and scheduled work, made production-related decisions, and took action on problems.

Team 1 had been functioning for approximately four years. There was no team leader per se in the seven-member team. Rather, members with the most experience and expertise took on an informal leadership role. Roles within the team rotated to a great extent: the

role of the troubleshooter rotated every week. On average, team members worked with at least one other for almost the whole work week.

Team 2 had been functioning for three to four years. There were nine members of this team and there was no leader per se. As with team 1, the members with the most experience and expertise took on an informal leadership role, and here too the roles within the team rotated to a great extent. The role of the troubleshooter rotated every week. The average amount of time each member worked with at least one other member varied between 30 and 100 percent of the work week.

Company C

Company C is a manufacturing firm producing adhesives and tape backings. The SDWT at company C had day-to-day responsibility for managing itself and running the entire production process of the site for the evening shift, under minimum supervision. Team members handled job assignments, planned and scheduled work, made production-related decisions, and took action on problems.

This production team had been in place for four years and was comprised of seventeen members, including a team utility person whose role, which was somewhat like that of a team leader, was to serve as a resource person as well as a back-up when needed. All members were considered equals. However, due to the different experience levels within the team, the strengths of certain members were recognized as problems arose, and those members would take on an informal leadership role. The roles within the team rotated to a great extent; every year there was an official rotation of jobs within the team. On average, each team member worked with at least one other member from 80 to 100 percent of the work week.

Company D

Company D, which is in the service industry, produces advanced information technologies. Two teams participated in the study: team 1 was ultimately responsible for selecting and managing training and education for the company; team 2 for the supply of materials for the site. Both had day-to-day responsibility for managing themselves and running their business unit under minimum supervision. Team members handled job assignments, planned and scheduled work, made service-related decisions, and took action on problems.

Team 1 had been working as a team for a year and a half. Employee turnover had been high within the team: members had been with the team from eight weeks to approximately a year and a half. The eight-member team was composed of six members, one leader, and one facilitator. The roles within the team did not rotate, due to the expertise required to be an 'owner' of a particular topic. The team did work together on logistics issues, packaging solutions, finances, and processes, however. Depending on the task at hand, on average team members worked with at least one other member from 10 to 90 percent of the work week.

Team 2, which had been working as a team for approximately three years, was composed of eight team members and one team leader. Roles within the team did not rotate. On average, team members worked with at least one other from 90 to 100 percent of the work week.

Company E

Company E, which is in the service industry, is a global company offering document-related products and services to an array of different customers. The SDWT had day-to-day responsibility for managing itself and ensuring quality service for its geographic area, under minimum supervision. Team members handled job assignments, planned and

scheduled work, made service-related decisions, and took action on problems regarding customer service and satisfaction. Team members played a role in the selection of new members.

The team, which had been functioning for two years, was composed of six members and one facilitator. The roles within the team rotated only to a limited extent, since each member had very similar responsibilities. The facilitator tracked the performance of the team, provided feedback and direction when needed, and ensured that the team had the resources it needed to function effectively. On average, each team member worked with at least one other member from 15 to 50 percent of the work week.

Team Training in the Research Sample

The team surveys and interviews revealed that all seven teams received some type of training (see table 5 for details). However, company B provided only technical team training: no interpersonal team training was conducted. All companies except for company C and team 2 of company D had provided team training only once. These two companies provided some type of team training approximately once a year. All companies used a mixture of training methods.

Trainee Perceptions

The interviews showed that team members had mixed perceptions about the impact of team training on team performance and satisfaction. In general, team members felt that they would benefit from further training in selected topics, although some members of company E felt that further training was unnecessary because the team was mature enough to resolve any problems itself. The survey showed that the performance and satisfaction levels of the teams were relatively high, with the exception of team 2 of company B (table 6). This team had no formal or informal interpersonal skills training and received less technical team training than team 1 of the same company (4 to 5 weeks and 8 weeks, respectively). The maturity of the team (this data was given in table 4, above) did not seem to have an impact on team performance and satisfaction.

Problems in Company A

Company A received high scores for team performance and team satisfaction. This team did receive some training on team building and interpersonal skills. However, during the interviews all members agreed that the training they had received had done more harm than good. Furthermore, the members felt that the training had been geared more to the mechanical teams than to the electrical team. Thus, lack of motivation and interest on the part of the team members may have accounted for the unsuccessful training, but obviously, the high team performance and satisfaction scores for company A may not be attributable to the training itself. The interviews also revealed that before the training the team leader had been a manager acting as a coach, and this individual had formed them into a SDWT. In fact, the team members said they had felt more like an SDWT before the training than after. After the training, one of the existing team members became the team leader, and there seems to have been less support and direction from management. The high team performance and satisfaction scores of company A may therefore be a result of the prior experience of the team in working together. These results suggest that although training may be an important factor leading to high team performance and satisfaction it is not the only factor: leadership in a team may play an important role. In this particular team, the team leadership had a strong impact on the team's performance and satisfaction levels. The team's problem-solving skills and team management practices are slightly above the average of the other six teams studied. Their relatively high score may be a result of their prior experience working as a team with a different type of team leader. This further emphasizes that leadership in a team may play an important role. Further research should investigate the impact of leadership style within a team or organization as a whole.

Table 5
Current Team Training Practices

	Company A	Company B	
		Team 1	Team 2
Length of training	3 days when team was implemented.	8 weeks.	4-5 weeks.
Topics covered	Barriers to change, developing the team's core values, roles and responsibilities, team communication skills.	Extensive technical training focussed on operations and troubleshooting. No formal interpersonal training.	Technical training focussed on how to operate machinery and solve technical problems. No interpersonal training.
Methods	Training given to entire team using lectures, videos, and some group discussions.	Training given to entire team. Lectures, group discussions, videos, and simulations. Practical training, hands-on experience with machines.	Not trained together as entire team. Lectures, group discussions, videos, and simulations were used.
	Training perceived as 'sales pitch.' Training felt to have 'caused more harm than good' and divided the team because 'monstrous' issues were raised in discussion and not resolved. All four members agreed that training did not increase team performance or satisfaction.	All team members interviewed agreed training helped them perform better, but difficult to conclude if training was effective in improving team performance and satisfaction since the group had never worked together before. It was felt that some members were 'not pulling their weight,' creating friction within the group that was not openly discussed.	All members interviewed agreed that the training improved their performance, but difficult to conclude if training was effective in improving team performance and satisfaction since the group had never worked together before. There was some concern about the potential success of any team training: it was felt that 'members are not going to make it happen.'
Further training	Team members felt they would benefit from further training in conflict handling and communication and in understanding their roles and responsibilities.	Members felt they would benefit from further training in conflict handling, team communication, and problem solving.	Team members felt they would benefit from further training in team communication skills, team building, team problem solving, and conflict handling.

Table 5 (continued)

	Company C	Company D		Company E
		Team 1	Team 2	
Length of training	1 week when team was implemented. 1 day of off-site training each year.	1 day.	2-3 days each year in previous 2 years.	4 days.
Topics covered	Working in teams, training others, supporting others, leading effective meetings, conflict handling, problem solving, communication skills, roles and responsibilities, technical training.	Team problem solving, conflict handling, team communication skills, leading meetings, roles and responsibilities within the team.	How Learn members see themselves and other members, decision making, conflict resolution, problem solving, presentation and communication skills. Individuals are given technical training when necessary.	The need for change, developing core team values and ground rules, roles and responsibilities within the team, team work flow, problem solving, running effective meetings, interaction and communication skills, conflict handling.
Methods	Training given to group of employees; some were from the same team, others not. Lectures by an external consultant, role playing, group discussions and videos were used. One-day annual training of entire team.	Team trained together except for newest member. Lectures, action learning, case studies, group discussions, and role playing were used.	Entire team not always trained together. Lectures, role playing, group discussions, and videos were used. Practical exercises demonstrated that in many cases team decisions will differ from individual decisions and be better.	All members had had team training but not together in present team. Lectures, role playing, group discussions, and videos were used. Role playing was intended to develop team processes such as problem solving. Individual technical training provided when needed.
Member perceptions	All four team members interviewed agreed training increased performance and satisfaction of the team. Training helped members deal with the unknown, made team comfortable with working together. Training reassured members that communication was 'wide open' and helped them 'deal with problems and move on,' as well as understand individual personality traits.	All seven members who following training agreed it improved their performance, helped them understand each other, communicate, pull together as a team, take on responsibility, focus on goals. Most agreed training increased team satisfaction—each member's contribution was valued. One member felt feeling of satisfaction would not last: teams must be promoted from 'the top down.'	Members felt training improved their understanding of team dynamics and made the team environment less threatening. All members interviewed agreed the training increased satisfaction and improved performance of the team.	Some members felt training improved satisfaction and performance; others felt it did not improve either. One member felt training gave team the sense that they really would manage their day-to-day responsibilities.
Further training	Members suggested they would benefit from a refresher on communication in general, on teams roles and responsibilities and on personality types.	Members felt they would benefit from training that related the team environment to their job more specifically and from a refresher course on problem solving.	Members felt they would benefit from on-going team training to keep them focussed.	Members felt they would benefit from a refresher course on team building and training on understanding others. Some felt further training was unnecessary.

Table 6
Comparison of Key Team Training Factors

Company	Team Performance	Team Satisfaction	Problem-Solving Skills	Team Management Practices	Type of Team Training Received	Collective or Separate Team Training	Training Adapted to Level of Maturity
A	6.83	6.31	5.23	5.11	Interpersonal*	Collective	No
B Team 1	6.27	6.05	4.92	4.42	Technical	Collective	No
Team 2	3.80	3.50	3.51	3.23	Technical	Separate	No
C	6.51	6.52	5.60	5.68	Technical/ Interpersonal	Separate	No
D Team 1	5.90	6.36	5.60	5.55	Interpersonal*	Collective	Yes
Team 2	5.50	5.42	5.65	5.42	Interpersonal*	Separate	Yes
E	6.20	6.25	5.03	5.27	Interpersonal*	Separate	No

Note: The numbers show the average of the team scores for each factor, on a seven-point scale: for example, the higher the score the higher the perceived team performance.

* The members of these teams were given individual technical training not team technical training.

The difficulty experienced by the team in company A might have been lessened if the team leader had received additional, individual team training. Wellins (1992) suggests that team leaders should receive additional training on giving and receiving feedback, handling conflict, valuing diversity, and so on, to increase the effectiveness of teams. If specific training is provided to team leaders, the employees may perceive that management is really committed to teams and that they realize that it takes a lot of time and energy to make teams work. Further research to measure whether individual training given to team leaders affects team performance or team commitment and motivation would provide helpful guidance here.

Interpersonal Skills Training: An Essential Component

Team 1 of company B showed high team performance and satisfaction, but team 2 showed low team performance and satisfaction. Although the teams were from the same company, they had received different amounts of training. Neither had received interpersonal training, but team 1 had received four weeks more technical team training than team 2. Moreover, team 1 had followed the training as an entire team, whereas team 2 had not. The problem-solving skills and team management practices of team 1 were not as high as one would expect with such high team performance and satisfaction. This may have been a result of a lack of training in team communication skills and in interpersonal skills for dealing with problems as a team. The interviews supported this hypothesis by showing that there were not many processes in place to deal with these problems and those that were in place were not always respected. These results apply to team 2 as well: their problem-solving skills and team management practices again scored slightly lower than team 1.

The organization's leadership and support for teams may have an important impact on the success of teams.

Thus it may be inferred from these results that both teams would have gained from additional team training, especially in interpersonal skills. This supports Wellins (1992) and Mackay's (1993) findings that for teams to be effective, they must be trained in job or technical skills, as well as in team interaction or personal skills. Furthermore, the high-performance team model proposed by Beatty and Chisholm (1996) has demonstrated, as we have seen, that team problem solving and team management practices are trainable skills and that they both lead to higher levels of team performance and satisfaction. One could draw a similar conclusion to the one drawn for the team in company A regarding the role of leadership in a team environment. There was no designated team leader in either team 1 or 2. Having had no interpersonal skills training, the team members had not been given the tools they needed to develop into a well-functioning high-performance work team. Thus, again, it could be inferred that the organization's leadership and support for teams may have an important impact on the success of teams.

Periodic Training, Collective Training

Company C shows relatively high scores for team performance and satisfaction, as well as for problem-solving skills and team management practices, perhaps because company C provides extensive team training annually, rather than just once. This inference is supported by Harrington-Mackin's (1994) and Dyer's (1984) recommendation that team training must occur periodically over time to be effective.

Perhaps, however, the scores for problem-solving skills and team management practices would have been higher for company C if the initial team training had been conducted with the whole team rather than separately. Since the entire team did not acquire the interpersonal team training together, it may have taken more time for the members to adapt to each other and develop as a team. During the interview team members agreed that teams were ingrained in the culture and leadership of the organization and that therefore the company's commitment encouraged and motivated the employees to work as a team. This provides further support for the inference already drawn from companies A and B: organizational support is important for success.

Because team 1 and team 2 of company D came from different sites, the team training was different for each. However, prior to training, both teams had been assessed by the company to determine their training level. Team 1 participated in the training collectively, while members of team 2 participated separately. The interview with team 2 showed that although the members did not participate in the team training as an entire team, they were all nevertheless at the same level of training. Furthermore, team 2 received team training approximately once a year. Although there were differences in the topics of the training, as well as in the process used, both teams had relatively high scores on all variables, perhaps because the company assessed them before the training. As a result, it was adapted to the teams' needs and the members' level of team maturity. This result supports Huszco's (1990) argument that starting team training without assessing team needs does not promote team training.

Both teams in company C have relatively high team-performance and satisfaction scores even though team 2 did not train collectively. It is possible that the members of team 2 somehow learned the basics of working together as a team nonetheless. However, as the team matures, training issues may become more complex and the organization may find that collective team training is more beneficial in maintaining high performance. Testing this prediction would require research relating to the impact of training at the different levels of a team's development.

Team Maturity

Company E had relatively high scores on all the variables. Although this team did not train collectively, the members had five to six years experience working in teams within the organization. Their high scores may support Morgan's TEAM model, which proposes that the developmental phase of a team will vary according to such factors as team members' past experiences in teams and members' own expertise. The team members' past experiences may have helped the team to mature faster. Furthermore, this team benefits from the feedback and resources of a facilitator. Although the team performance and satisfaction scores are high, at their level of team maturity, their problem-solving skills and management practices might have increased if the team had followed its training collectively rather than separately. As with company D, as the team matures the training issues may become more complex, and the team may find collective training more beneficial.

As the team matures, it may find collective training more beneficial.

Generalizing the Results

Some general inferences can be made about the current training practices of the companies studied here.

Collective Training

The high team scores of the teams from company A, B and D that trained together are in accordance with the finding of Huszczo (1990) and Varney (1990) that the success of training will be increased when the team follows it together.

Group Interdependency

Gladstein's model of 'task group effectiveness' (1984) found a positive relationship between team performance and satisfaction and the level of interdependency needed to perform a group task. The results of the study show both a positive and a negative relationship. In companies A and E, the interaction within the team was relatively low and team performance and satisfaction scores were high (tables 4 and 6, respectively). These results do not support Gladstein's model because although there was minimal group interdependency, team performance was high. Teams A and E may have reported higher team performance and satisfaction scores because they have less chance of encountering conflict than do teams that interact most of the time. Team 1 of company B and company C's team, support the model because they demonstrated high group interdependency, as well as relatively high team performance and satisfaction (tables 4 and 6, respectively). These conflicting findings demonstrate the need for further research in order to determine if group interdependency has an impact on a team's performance and satisfaction level.

Sequencing Training

The literature shows that the sequence of training is vital to the growth and development of teams (Ray and Bronstein 1995; Dyer 1984). However, of the five companies interviewed here, only company D had attempted to determine the development stage of its teams before conducting training. Although members of the teams were said to have been at the same level of team development, measuring the level of an individual team member's development may be quite difficult and subjective. Moreover, it is unlikely that a team can truly develop without all members being present for training, as happened in some of the companies studied here.

Accountability

None of the team members felt that they had been held accountable for what they had learned, possibly because of a lack of follow-up on the effectiveness of training. A lack of follow-up may undermine training efforts, since team members see it as a sign that the training is not important to the company.

Training in Interpersonal Skills

The literature suggests that training teams in interpersonal skills is essential if organizations are to obtain high team performance and satisfaction. Team 1 in company B, however, had high team performance and satisfaction scores, but relatively low problem-solving and team management practices scores. These scores further support that training on interpersonal skills is important. This generalization is borne out by the results of this study, since the team performance and satisfaction levels of team 2 in company B is the lowest overall, and company B was the only company not to offer interpersonal skills training.

Training in Working in Teams

Company C generally yielded the highest scores in table 6, and the interviews showed that a team culture was ingrained across the entire organization. It is interesting to note, therefore, that company C's training program included two topics that were not in the other companies' programs: working in teams and training others. Many companies trained their team members on what SDWTs are and how they work, but they did not train members specifically on how to work in teams and how to conduct themselves in teams, rather than working as individuals. This type of training may increase the likelihood of team success. Furthermore, by training their employees on how to train others, company C was encouraging peer learning.

Technical Team Training

Technical training is often given on an individual basis, and consequently team members do not learn how to work as a team in their day-to-day activities. Company C did include technical team training in its program, however. It is possible to infer, therefore, that this key topic was partly responsible for the effectiveness of its training program.

Problem Solving and Conflict Handling

The results show that the teams trained on team problem solving and conflict handling have the highest team problem solving scores (company C, D 1 and 2, and E; the results of company A were not considered, since the team unanimously agreed that the training was not helpful and that their problem-solving skills and team-management practices did not come from the training but through time and effort). These findings are consistent with Beatty and Chisholm (1996) high-performance team, in which problem-solving skills and team management practices are trainable. Lawler, Mohrman, and Ledford's (1995) survey suggested that American organizations with employee involvement programs tend to show an increase in interpersonal skills and quality/action skills. The present study suggests that Canadian organizations may be showing a similar increase.

Training members on how to work in teams and how to conduct themselves in teams, may increase the likelihood of team success.

Conclusion

Training and Team Maturity

Only two of the seven training programs in this study took into consideration the level of development and maturity of the teams (both programs in company D). Two other programs

(company B) did not give any team training. Company A did not assess the team prior to the training, and as a result, the training exercise was unsuccessful. Had the training been adapted to the maturity and motivational level of the team, perhaps it would have succeeded.

Interpersonal Skills Training

This study has clearly demonstrated that training has an impact on team performance and satisfaction if it addresses both technical and interpersonal skills. Company B was the only company that did not provide interpersonal skills training, and team 2 held the lowest team performance and satisfaction scores. Although team 1 of company B had high team performance and satisfaction scores, it had relatively low problem-solving and team management practices scores, which also indicates that training in interpersonal skills is important. Although the company provided technical training to members of the two teams, this training was only given to team 1 collectively. Perhaps collective team technical training would have led to higher team performance and satisfaction for team 2 because in addition to learning the technical aspects of the job, team members would also have learned how to work as a team on day-to-day tasks.

Collective Training

This study did not clearly support the prediction that interpersonal team training would be more effective if a team followed it collectively rather than separately. Some teams followed the training together, while others followed it separately, but the performance satisfaction levels were similar in both situations. Further research is consequently required in this area.

Limitations of the Study

Although each team in this study satisfied the working definition of an SDWT, the teams functioned differently in terms of the day-to-day interaction of team members, and in the accountability of the team. When comparing performance and satisfaction scores of the teams, this limitation should be kept in mind. Another limitation may be the sample size. More conclusive generalizations might have been possible if the sample had been larger and more teams had been used for each organization.

Training for Effectiveness

Finally, it can be inferred from the present study that although high team performance and satisfaction may be reached without training in interpersonal skills, if the training focuses just on team technical skills (as with team 1 of company B), the team will not be as effective as it could be. Training in interpersonal skills increases the team's ability in problem solving and team management practices. This finding, therefore, supports the results of Beatty and Chisholm (1996) that training in team problem solving and team-management practices leads to higher team performance and satisfaction. In the long run, the team that receives this training will be more effective and will be better able to withstand difficult situations than teams that do not receive interpersonal skills training.

The team that receives training in interpersonal skills will be more effective and will be better able to withstand difficult situations.

References

- Beatty, C.A. 1995. Research on self-managing teams. A team survey instrument. Queen's University Kingston, ON.
- Beatty, C.A., and J. Chisholm. 1996. Learning teams in *the (N)EMBA Program*. Research report, Queen's University School of Business.
- Beck, J., and Neil Yeager. 1996. Moving beyond team myths. *Training and Development* 50 (March): 51-5.
- Bentley, Trevor. 1990. *The business of training: Achieving success in the changing world markets*. London: McGraw Hill.
- Betcherman, Gordon, and Richard Chaykowski. 1996. *The changing workplace: Challenges for public policy*. Research paper R-96-13E. Human Resource Development Canada, Applied Research Branch, Strategic Policy. Hull, QC: Human Resource Development Canada.
- Dyer, Jean L. 1984. Team research and team training: A state-of-the-art review. In *Human factors review*, pp. 285-323. Santa Monica, CA: Human Factors Society.
- Fisher, Kimball. 1993. *Leading self-directed work teams: A guide to developing new team leadership skills*. New York: McGraw-Hill.
- Gladstein, D.L. 1984. Groups in context: A model of task group effectiveness. *Administrative Science Quarterly* 29:499-517.
- Harrington-Mackin, Deborah. 1994. *The team building tool kit: Tips, tactics, and rules for effective workplace teams*. New York: New Directions Management Services.
- Huszczko, Gregory E. 1990. Training for team building. *Training and Development* 44 (February): 37-43.
- Katzenbach, J.R., and Douglas K. Smith. 1993. *The wisdom of teams: Creating the high-performance organization*. Boston, MA: Harvard Business School Press.
- Laiken, Marilyn. 1994. *The anatomy of high performing teams*. Toronto: OISE Press.
- Lawler, E.E., S.A. Mohrman, and G.E. Ledford Jr. 1995. *Creating high performance organizations: Practices and results of employee involvement and total quality management in Fortune 500 companies*. San Francisco, CA: Jossey-Bass.
- Mackay, Allen. 1993. *Team up for excellence*. Oxford: Oxford University Press.
- Martocchio, J.J., and T.T. Baldwin. 1997. The evolution of strategic organizational training: New objectives and research agenda. *Research in Personnel and Human Resources Management* 15:1-46.
- Modrick, John. 1986. Team performance and training. *Human Productivity Enhancement: Training and Human Factors in Systems Design* 1:130-66.

- Mohrman, S.A., S.G. Cohen, and A.M. Mohrman Jr. 1995. *Designing team-based organizations: New forms for knowledge work*. San Francisco, CA: Jossey-Bass.
- Orsburn, J., L. Moran, E. Musselwhite, J.H. Zenger, and C. Perin. 1990. *Self-directed work teams: The new American challenge*. Chicago, IL: Business One Irwin.
- Ray, Darrel, and Howard Bronstein. 1995. *Teaming up: Making the transition to a self-directed, team-based organization*. New York: McGraw-Hill.
- Salas, E., T.L. Dickinson, S.A. Converse, and S.I. Tannenbaum. 1992. Toward an understanding of team performance and training. In *Teams: Their training and performance*, pp. 219-45. Norwood, NJ: Ablex.
- Tuckman, B.W. 1965. Developmental sequence in small groups. *Psychological Bulletin* 63(6):384-99.
- Varney, Glenn H. 1990. *Building productive teams: An action guide and resource book*. San Francisco, CA: Jossey-Bass.
- Wellins, Richard S. 1992. Building a self-directed work team. *Training and Development* 46 (December): 24-8.
- Wellins, R.S., W Byham, and J. Wilson. 1991. *Empowered teams: Creating self-directed work groups that improve quality, productivity, and participation*. San Francisco, CA: Jossey-Bass.
- Yeatts, D.E., and C. Hyten. 1998. *High-performing self-managed work teams: A comparison of theory and practice*. Thousand Oaks, CA: Sage.
- Zenger, J.H., E. Musselwhite, K. Hurson, and C. Perrin. 1994. *Leading teams: Mastering the new role*. New York: Irwin.



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