STUDENT ASSESSMENT OF VIRTUAL TEAMS
IN AN ONLINE MANAGEMENT COURSE

Genie Black, Arkansas Tech University

Abstract

Forty students enrolled in a management web class were asked to assess- their perceptions of virtual teams (VTs). As part of a course requirement, all students were required to actively participate in a VT. Students completed a survey to assess their perceptions on several aspects of teams and team functioning. A four-way analysis of variance (team communication, previous team experience, team building and group cohesion) was conducted for two independent variables: perceptions of team effectiveness and perceptions of the need for team training. The analysis tested for main effects and two-way interactions. Due to empty cells or a singular matrix, higher order interactions were suppressed. Results suggest that higher levels of team communication were related to perceptions of high team effectiveness (F = 8.37, $p<.01$) and a low need for team training (F = 6.89, $p < .01$). Significant two-way interaction effects for team communication by group cohesion (F = 6.39, $p<.01$) and team building by group cohesion (F = 9.23, $p<.01$) suggest that as communication and cohesion increase, team effectiveness increases and the need for training decreases. Implications are discussed.

Student Assessment of Virtual Teams in an Online Management Course

There is a significant shift occurring in organizations around the globe that has tremendous implications for the skills necessary for success in today's business arena. This shift involves the increasing emphasis on team work. The primary force driving this change is technology.

Business approaches such as empowering workers, widening spans of control or creating "mini-units" are no longer adequate for obtaining optimal organizational performance. Today, managers are creating teams, networks and boundaryless structures to redesign their organizations in order to better manage change (Peters, 1992). Many firms increase responsiveness by organizing activities around self-managed and self-contained work teams. Such teams are empowered to manage themselves. In team-based work environments the team is the basic work unit and team members do much of the planning, decision making and implementing necessary to complete their assigned jobs (Shonk, 1997). Thus, as work tasks become too complex for individuals to manage alone, and as more employees find themselves in a global work environment where they are separated from others by distance and time, organizations have adapted their methods of work to include virtual teams.

In the ongoing effort to prepare students for entrance into today's global business world, institutions of higher education are meeting the challenge by incorporating relevant technology into their course delivery systems. The growth of the World Wide Web and its increasing ease of use has made the Internet an extremely attractive tool for course delivery (Powers, 1997). Today, students from virtually anywhere can now enroll in web-based courses.

Web-based courses provide an option for relieving scheduling problems for courses and classrooms. In addition, web classes can be a good public relations tool for non-traditional students, offering them added flexibility in managing their school and home environments. Web-based courses also offer opportunities to students who are otherwise unable to take courses on a university campus. Virtual course delivery also provides students with exposure to an alternative learning environment (Powers, 1997), and teaches the students skills that are often valued in the workplace. Although many institutions of higher learning have been reluctant to embark on this form of distance learning, the number of Internet course offerings is expanding at a rapid pace (Black, 2001).

Internet courses enable students to acquire a variety of skills that have typically not been incorporated into traditional classroom settings. Conducting research on the Internet and functioning in virtual team environments are examples of skill development that can occur in a well-structured online course. Such skills are in high demand in most organizations today, thus enhancing the likelihood that the student will be an attractive job candidate upon graduation. Furthermore, Internet technology has linked students to the world in an unprecedented way. It has created a truly global environment that allows students to interact with individuals from many different societies, thus greatly improving their awareness and appreciation of culture in today=s global world (Vess, 1997). Internet courses also provide an unparalleled environment for collaborative learning, expanding the classroom setting beyond student-teacher interactions to synergistic explorations in diverse group settings (Holt, 1998). Students enrolled in Internet courses also learn to adapt to a faster paced and higher level of stimulation in teaching than is afforded by traditional courses. They learn to generate questions, to work in Avirtual@ teams, to create and design, and to hone their interpersonal skills via the high level of communication demanded in online courses (Hammond, 1998).

Virtual classrooms allow us to utilize the capabilities of a computer for tailoring a human communication process to the nature of a specific application as well as to the nature of the individuals or groups undertaking the application (Hiltz & Turoff, 1985, 1993; Turoff, 1991). The goal in designing a virtual classroom is not to merely duplicate the effectiveness and characteristics of the traditional face-to-face classroom. Rather, it is to use the powers of the computer to actually do better than what normally occurs in the traditional classroom setting.

The flexibility and sophistication of today's software for supporting distance education varies from simple electronic mail systems to conferencing systems that are specially enhanced to support classroom-like experiences. This is particularly true for group discussions and team projects (Wells, 1990). Thus, the virtual classroom is a learning and teaching environment located within a computer-mediated communication system. The objectives of a virtual classroom are (1) to improve access to advanced educational experiences by allowing instructors and students to participate in distance learning communities using personal computers at home or

on campus and (2) to improve the effectiveness and quality of education by utilizing computers to support a collaborative learning process. Such collaborative processes emphasize cooperative or group efforts among students and faculty, active interaction and participation on the part of both instructors and students, and new knowledge that emerges from an active dialog among those who share ideas and information (Bouton & Garth, 1983; Whipple, 1987). Studies on the use of computer-mediated communication facilities that form essential components of a virtual classroom have tended to support the perspective that for mature, motivated learners, this mode of learning can be more effective and more interactive than a traditional classroom experience (Black, 2001; Hiltz, 1993, 1994).

Organizational development practitioners, managers of organizations, and educators have long known the importance of facilitation for successful group processes, but few individuals have tackled the issues of trying to facilitate teams that are separated by distance in time and space. Virtual teams, an evolutionary form of a network organization (Miles & Snow, 1986), are enabled by advances in information and communication technology (Davido & Malone, 1992; Jarvenpaa & Ives, 1994). In virtual teams, interfaces and boundaries are permeable; teams rapidly form, reorganize and dissolve when the needs of the environment change; and the team is comprised of members with differing competencies who are located across time, space and culture (Kristof, et. al., 1995; Mowshowitz, 1997). Virtual teams hold the promise of flexibility, responsiveness and improved resource utilization necessary to meet today's ever-changing task requirements in a dynamic global business environment (Mowshowitz, 1997; Snow, et. al., 1996). Virtual teams have two primary elements: the portability of modern technology-based support systems such as data processing or file storage, and the ability of the worker to perform and join in collaborative tasks regardless of physical location.

There has been a rush in academia to integrate virtual teams into classroom activities in order to provide new experiences, new environments, and enhanced learning. With the increased relevance of the Internet as a diverse resource in academia, faculty members need to integrate these virtual activities into their current team building strategies as well as learn to continually improve virtual group processes (Lipnack & Stamps, 1997). But, like face-to-face teams, meaningful experiences do not happen by chance. Virtual team meetings can be disappointing and frustrating when they lead to information overload, low quality communications or the inability to stay focused on a topic. When a face-to-face meeting is unsuccessful, we tend to review our meeting design as well as our role as facilitator in an attempt to understand what went wrong. When virtual team experiences fail, we tend to blame technology. Instead, it is critical that we extend our understanding about group dynamics in an effort to grasp what happens when individuals interact and collaborate online (Alavi, 1994).

Team Communication

The terms "online group", "virtual conference" and "virtual group" refer to many technologies. These may include real-times activities which link individuals who are in different places participating synchronously; or these technologies may allow individuals to participate from different places at different times in an asynchronous mode. Most teams tend to gravitate toward those modes of communication that are preferred by the majority of the members. Team preferences are typically based on legitimate factors including previous experience, habit,

cognitive style and ease of access. Typically, however, such preferences can result in team failure to consider key qualities of different forms of media. Media differences in terms of the degree to which a medium is personal/impersonal, warm/cold, novel/routine, urgent/ undemanding, or fast/slow will have an impact on team dynamics. Teams capable of diversifying their communications repertoire to the extent that they use different media consciously to achieve different effects at different times tend to be superior (Bush & Frohman, 1991).

Advanced technology is a fundamental part of virtual team communication, yet it has created communication barriers that must be addressed. Electronic mail is perhaps the most impersonal of the communication mediums, since it excludes the opportunity for receiving important communication feedback cues. Such actions as body placement, posture, hand and body gestures, facial expression and voice quality contribute important information about the tone of the communication -- information not easily conveyed through print alone (DuBrin, 1999). Video conferencing is becoming more widely accepted as a means of virtual team communication. Issues to consider here include managing the attention span of participants as well as identifying those situations where video conferencing is most appropriate (e.g., When does video add something you can't get with audio?). Asynchronous web-conferencing involves member participation at different times. This form of communication makes it hard to manage team conflict and extremely difficult to create a team culture. Document-sharing frequently creates conflicts of document ownership, equal input into the team effort and general problems of trust.

In computer-supported meetings, such issues as how anonymous contributions affect the group and how to test whether or not consensus -- as defined by computer processing of input – is valid must be addressed. In audio conferencing participants have difficulty knowing who is "present", and facilitators struggle with making sure that everyone with something to say has the opportunity to be heard. Discovery/chat rooms raise the concern of how to facilitate a meaningful conversation about assigned topics among individuals who do not access the information at the same time. Protocols covering such issues as response time, forwarding of messages, who gets copied on e-mail messages, and how the style of electronic messaging influences the way participants feel about the group need to be established for electronic mail. When using computer conferencing, we must consider how to help the participants create the mental image they need for the development of a culture, which will support team processes. Intranets and groupware require that a balance is created between the need for participants to access and process large quantities of information while at the same time developing relationships and qualities like trust (Schrage, 1996). Thus, facilitating virtual teams requires addressing the same issues you face with any team process, but requires that you extend your facilitation to accommodate the virtual environment.

The above concerns, however, are manageable. Whether you are meeting face-to-face or in a virtual environment you can continue to use basic strategies for developing a shared commitment and understanding of the team's purpose. What is different is the strategy for how the team will remain on track around the stated team goal when members are unable to meet together in a face-to-face learning environment.

Team Building

In order to get the most from virtual teams it is essential that team building strategies be integrated into team tasks and assignments. Team building involves a method where the team consciously studies its own processes of working together and attempts to create a team climate that encourages and values the contributions of all members. The team's energies are directed toward task effectiveness, problem solving and maximizing the use of member resources in order to achieve team goals.

The degree of success of team building efforts is dependent upon several team variables. Creating a high level of interdependence among team members is crucial. Important tasks must be designed to inculcate team member commitment and an understanding that teamwork is requisite for achieving the desired results. Assigning a team leader who has good people-skills, is willing to allocate time to team-building activities and is committed to a "team" approach is also vital for success. Team management must be viewed as a shared function, where individual members are provided leadership opportunities when their skills and experiences are relevant to the needs of the team. Team members must be both willing and able to contribute information, experiences and skills that will enhance the likelihood of achieving the team goal. This is best accomplished when members feel free to communicate openly and directly with others. As the team gains experiencing in goal achievement, members will view each other as having the capabilities and skills necessary for attaining goals, and mutual trust and respect among members will grow (Francis & Young, 1979).

It is also critical that the team has clear, understandable goals and a process for establishing performance targets that are challenging but reachable. Roles must be clearly defined, and effective methods for solving problems and communicating must be developed and supported by all members. In addition, the team members must view their efforts critically without making attacks on individual members. By assessing areas of strength and weakness, the team will learn from its experiences. The team should also strive for high levels of interaction, both within the team and without, in order to have the capacity for generating new ideas which is often critical for goal achievement. Members engaging in such activity should be rewarded for innovative risk taking. As the team matures, a feeling of equality and trust will emerge that will further facilitate open communication among members (Francis & Young, 1979; Ware, 1993).

Team effectiveness is also a vital element of successful team performance. Team effectiveness is enhanced when members work jointly on tasks of mutual importance, allowing each member to contribute her expertise in problem solving and project completion. Furthermore, team effectiveness is facilitated when members evaluate the team's working relationship and develop guidelines that will lead to increased productivity and member cooperation. As part of this process, members must be willing to manage conflict, evaluate group performance and provide feedback and support in a way that enhances each member's commitment to the team (Ware, 1993).

Achievement of a well-functioning team can be aided when members take a proactive approach to completion of their tasks. The characteristics of a proactive approach include joint decision making in determination of where the team is going, how they will get there, and what must be

achieved; engaging in a positive attitude toward change and a willingness to accept and allow change to occur as necessary in order to accomplish the desired results; and verbally and publicly supporting each other. When team members make a conscious and sustained effort to incorporate these proactive characteristics into all aspects of team functioning, performance and creativity will be greatly enhanced. In addition, having a team leader who helps develop an understanding and acceptance of group norms, criteria for evaluating success, standards for determining the quality of performance, and an identified reward system for recognizing the team's successes also contributes to the development of a well-functioning and highly productive team.

Group Cohesion

Group cohesion can be defined as the total field of forces that act on team members' attitudes toward remaining in a particular group. It is that "stuff" that causes a team to "gel" and ultimately holds the group together. Team members will usually refer to their team as cohesive if the members get along, are united in the pursuit of team goals, and are loyal to one another. The more cohesive the team, the more it encourages peak performance in its members. Perceived cohesion encompasses a member's sense of belonging to a particular group and his feelings of morale associated with membership in the group. Thus, perceived cohesion reflects an individual's assessment of his relationship to the group. Belonging is believed to comprise both cognitive and affective components developed through experiences with the team, while moral is primarily a global affective response associate with membership in the group (Bollen & Hoyle, 1990).

The construct of group cohesiveness has been an active part of research in a wide variety of disciplines including psychology, group dynamics, management and electric meeting systems (Turner, et. al., 1992; Stokes, 1983; Griffith & Greenlees, 1993; Widmeyer, 1991; Lando & McGovern, 1991). Researchers have identified two types of cohesion. Task cohesion is defined as a general orientation toward achieving a team's goals and objectives; social cohesion is defined as a general orientation toward developing and maintaining social relationships within a team (Carron, et. al., 1985). While both types of cohesion can advance the development of a well-functioning team, task cohesion is the most relevant in relation to student teams.

The degree of group cohesiveness attained in virtual teams varies widely. Such factors as the size of the group, dependence of members upon the team's achievement of goals, status of the team, and demands and pressures placed on the team all impact the extent to which team members perceive their team as a cohesive unit. Increases in task cohesion, while not always resulting in "winning" (e.g., the "best" project), will ultimately lead to success for the team. In other words, not all teams have the ability to be the top achiever, but they can all experience success through the accomplishment of goals. Such success is a critical aspect of task cohesion. Therefore, the more success a team experiences, the higher their level of cohesion.

Goals can significantly aid in the development of task cohesion. Creation of effective team goals requires that certain goal setting processes be employed. In order to develop effective team goals, it is important that the team leader and team members mutually establish the goals. Developing goals jointly gives all members a sense of ownership, assures commitment and

increases the likelihood that everyone will work together as a unit to achieve the goals. The goals themselves must be realistic and specific. General goals, such as getting an "A" in the course, will not serve to motivate the team throughout the semester. Without specific statements of the objectives to be achieved, team members may stray from the path necessary for goal achievement. Tasks must be clearly defined for team members, where appropriate, so each member can understand his individual responsibilities in order to contribute successfully to the overall team goal. In addition, process goals should be established to clarify what needs to be accomplished on a daily basis. These goals enhance team cohesion by providing regular, short-term team successes. Finally, the team must focus on remaining positive even when negative outcomes or mistakes occur. Failure to do so may cause the team to lose sight of its goals (Weinberg, et. al., 1991).

Methods

Seventy-four students enrolled in an online management course participated in this study. All students were assigned to virtual teams that were permanent for the duration of the course. Teams were responsible for collaborating on tasks, conducting brainstorming sessions, completing critical thinking tasks and engaging in problem solving exercises. Team members were also encouraged to use their teammates as resources for course, task and technology questions. All teams were comprised of either three or four members.

A survey was developed to examine how students perceived their virtual team experience. The survey included demographic items and statements designed to tap into student perceptions of team effectiveness, team communication, group cohesion, team building and team training needs. All items were presented in a five-point Likert-type scale. Response formats included satisfaction scales ranging from strongly disagree (1) to strongly agree (5) and frequency scales ranging from none (1) to all (5).

Results

Composite measures were created for the variables of team communication, team building, group cohesion, team effectiveness, and team training needs. Inter-item reliability coefficients were calculated for composite measures and Chronbach's alphas were found to be acceptable at.60 or greater (refer to Table 1).

	Number of Items	Cronbach's Alpha
Team Communication	5	.77
Team Building	5	.62
Group Cohesion	5	.69
Team Effectiveness	6	.66

To test for differences, a four-way analysis of variance (team communication, previous team experience, team building, and group cohesion) was conducted for each independent variable (perception of team effectiveness and perception of the need for team training). The analyses tested for main effects and two-way interactions. Due to empty cells or a singular matrix, higher order interactions were suppressed.

For *Team Effectiveness*, the ANOVA yielded a significant main effect for team communication (F = 8.37, $p<.01$) and a significant two-way interaction effect for team communication by group cohesion (F = 6.39, $p<.01$) (refer to Table 2). Results suggest that as team communication increases, the perception of team effectiveness also increases.

Table 2

Analysis of Variance

Team Effectiveness

Variables Source	SS	df	MS	F
Main Effects:				
• Team Communication (Var 1)	15.4	1	15.4	8.37*
• Previous Experience (Var 2)	9.1	2	4.40	NS
• Team Commitment (Var 3)	11.2	1	11.2	NS
• Team Cooperation (Var 4)	8.9	2	4.45	NS
Two Way Interaction:				
• Var 1 X Var 2	3.6	2	.97	NS
• Var 1 X Var 3	1.09	1	.29	NS

• Var 1 X Var 4	5.01	2	1.72	6.39*
• Var 2 X Var 3	3.2	1	1.41	NS
• Var 2 X Var 4	6.3	4	2.14	NS
* Significant F				

Furthermore, team communication and group cohesion interact in such a way that reported increases in these two variables results in a corresponding increase in the perception of team effectiveness.

ANOVA results for *Need for Team Training* (refer to Table 3) yielded significant findings for team communication (F = 6.89, $p<.01$), such that as team communication increases, the perceived need for team training decreases. A significant two-way interaction for team building by group cohesion (F = 9.23, $p<.01$) suggests that perceptions of high levels of team communication and group cohesion are related to decreased perceptions of the need for team training. No additional significant findings were found for the remaining variables.

Table 3
Analysis of Variance
Need for Team Training

Variables Source	SS	df	MS	F
Main Effects: `				
• Team Communication (Var 1)	12.3	1	12.3	6.89*
• Previous Experience (Var 2)	7.6	2	3.8	NS
• Team Building(Var 3)	3.24	1	3.24	NS
• Group Cohesion (Var 4)	9.89	2	4.65	NS
Two Way Interaction:				
• Var 1 X Var 2	12.6	2	5.3	NS
• Var 1 X Var 3	5.6	4	1.9	NS
• Var 1 X Var 4	11.1	1	4.9	NS
• Var 2 X Var 3	33.8	2	11.4	NS
• Var 2 X Var 4	15.5	4	4.12	NS
• Var 3 X Var 4	18.7	6	3.79	9.23*
* Significant F				

Discussion

New electronic communication technologies are creating new, and sometimes easier, methods of interacting and exchanging ideas in both the academic and corporate worlds. It is in these environments that virtual teams have emerged at a rate faster than our ability to understand them.

It is critical to recognize that existing knowledge of traditional face-to-face team interactions and dynamics may not be applicable to teams functioning in a virtual setting. In fact, the growing literature on this subject suggests that a conscious effort at increasing team building techniques and developing communication protocols is requisite for ensuring the success of a virtual team (Alanis, et. al., 1998).

Although the findings from this research are not causal in nature, the importance of communication as it relates to team building, group cohesion and team effectiveness is clearly evident. While conventional rules for team formation (e.g., commitment to a common goal, clear roles and responsibilities in interdependent tasks, etc.) apply to virtual teams, the fact that virtual team communication and interaction occurs through electronic media requires that we focus on other considerations. Training each member of a virtual team is absolutely necessary, and training becomes even more critical when team members come to the group with different levels of exposure to computer technology.

Team training in the development of communication protocols creates the foundation for team building activities and, thus, may enhance the process of group cohesion. Therefore, team members should be exposed to a variety of communication methods and made aware of the advantages and disadvantages of each. Perhaps the easiest way to accomplish this is to require the use of various communication modes in the initial stages of team formation. The development of informal and creative interactions to encourage team communication early on is critical. Such interdependent activities as having team members share background information with one another as well as the development of team concepts, a virtual team name, a statement of purpose, key goals, and team member roles via different modes of communication can help to expose members to the new communication technologies while creating the basis for the initial stages of team formation.

Once these basics are in place more advanced efforts, which focus on planning for action (e.g., creation of a communication protocol strategy, a responsibility matrix, a member/media matrix, and completion of team evaluations), can further facilitate team effectiveness. These activities will not only develop good virtual communication skills, but will also function as team building activities that will help to foster cohesion within the group. With the success of these tasks, the team should now be prepared to move into the team performance stage. Teamwork at this point will require more elaborate planning in more distributed modes of communication. Subgroups may develop and take responsibility for more detailed analyses of small segments of a task, in preparation for integrating their information with that from other subgroups when the team again forms as a unit. Such activities can lead to a "team intellect", a synergistic relationship among individuals where the whole is truly greater than the sum of its parts.

The creation of activities such as those outlined above requires the use of clear goals and directions and the integration of structures, policies and procedures for accomplishing the task or delivering the end-product. Such features in task work are important for enhancing communication and delivery procedures by ensuring that all steps are accomplished and all constraints are satisfied. To a certain extent structure, policy and procedure can be enhanced (or perhaps even created) by the choice of groupware to be used by the team. Good groupware must allow for easy recognition of structure within a document through methods such as italics or the

use of graphics. It should also protect privacy of secure information, and provide the opportunity for confidentiality and anonymity, which may be particularly important in the early stages of team formation. Capabilities for collecting and analyzing data must also be present, as well as simple methods for data transfer and modification.

Knowledge management is also important for virtual team effectiveness. Many electronic group collaboration tools support knowledge management in that member activities performed, using these tools, can be captured, stored and reused by other members of the team. In order to bind messages and information together to form meaning, team members must be trained to provide context in their communications. Inclusion of contextual factors such as the situation, relationships, assumptions and prior events allows for the transformation from information to knowledge (shrike.depaul.edu/~ychen6/vttext.htm).

Conclusion

Virtual teams have a number of advantages as well as disadvantages. It is clear, however, that the role of technology in academic and work environments will continue to dramatically change our concept of the traditional work place. Technological advances have significantly altered the way that team members work together. These advances, in conjunction with the tremendous increase in the use of virtual communication tools, makes it imperative that research efforts be made to identify which rules of traditional, face-to-face team functioning need to be altered or discarded for understanding virtual team dynamics.

References

Alanis, A., Code, D., Horner, R. & Spasojevic, R. (1998). "Virtual Team Development", *Network Usage*, 1-23.

Alavi, M. (1994). "Computer-mediated collaborative learning: An empirical evaluation," *MIS Quarterly, 18 (2)*, 150-174.

Bollen, K. & Hoyle, R. (1990). "Perceived cohesion: A conceptual and empirical examination," *Social Forces, 69, 2*, 479-504.

Bush, J. & Frohman, A. (1991). "Communication in a network organization," *Organizational Dynamics* (fall), 23-26.

Carron, A., Widmeyer, W., & Brawley, L. (1985). "Cohesiveness in groups: Interpretations and considerations," *Journal of Sport Psychology, 4*, 123-138.

Daft, R. & Lengel, R. (1986). "Organizational information requirements, media richness, and structural design," *Management Science, 32(5)*, 554-571.

DuBrin, A. (2000). *Essentials of Management*, 5th. Edition, South-Western College Publishing, 325-327.

Francis, D. & Young, D. (1979). *Improving Work Groups*, University Associates, Inc., San Diego, CA.

http://shrike.depaul.edu/~ychen6/vttext.htm, 1-7.

Jackson, R. & Winn, W. (1999). *Proceedings* of the Computer Support for Collaborative Learning Conference.

Kimball, L. (2000). "Choosing media strategically for team communications", www.tmn.com/~lisa/teams/choices.htm.

Lipnack, J. & Stamps, J. (1997). *Virtual Teams: Reaching Across Space, Time and Organizations with Technology*. John Wiley and Sons.

Nunemaker, J., Dennis, A., Valacich, J., Vogel, D., & George, J. (1991). "Electronic meeting systems to support group work," *Communications of the ACM, 34(7)*, 41-61.

Peters, T. (1992). *Thriving on Chaos*, 256. New York: Alfred Knopf.

Poole, M. & DeSanctis, G. (1990). "Understanding the use of group decision support systems: The theory of adaptive structuration" in Fulk, J. & Steinfield, C. (Eds.), *Organizations And Communication Theory*, Sage, Newbury Park, CA. Schlesinger, Kotter and Sathe, *Organizations*, Irwin, 1993.

Schrage, M. (1996). *No More Teams!: Mastering the Dynamics of Creative Collaboration*. Doubleday.

Shonk, J. (1997). *Team Based Organizations*. Chicago: Irwin.

Steiner, I. (1972). *Group Processes and Productivity*, New York: Academic Press.

Ware, James, "Aspects of problem solving and conflict resolution in management groups," in Schlesinger, Kotter and Sathe, *Organizations*, Irwin, 1993.

Weinberg, R., Fowler, C., Jackson, A., & Bruya, L. (1991). "Effect of goal difficulty on Performance," *Journal of Sport Psychology, 13* 160-173.

Ziegler, B. (1997). "Gerstner's IBM revival: Impressive incomplete," *Wall Street Journal, 27*, 81 - 84.