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Encyclopedia of Distance Learning Second Edition

Patricia Rogers
Bemidji State, USA

Gary Berg
Chapman University, USA

Judith Boettcher
Designing for Learning, USA

Carole Howard
Touro University International, USA

Lorraine Justice
Hong Kong Polytechnic University, Hong Kong

Karen Schenk
University of Redlands, USA & North Carolina State University, USA

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Bringing Out the Best in Virtual Teams

Janet Schoenfeld

Poole & Associates, Inc., USA

Zane Berge

University of Maryland, Baltimore County, USA

INTRODUCTION

The use of computer-mediated communication (CMC) is more popular than ever in both educational and corporate settings. Schools and corporations are using virtual communication to replace or supplement in-person classes and meetings. Many educators and managers are taking it a step further, having teams work in a virtual setting with members rarely or never meeting each other in person. Can a virtual team be as successful as a team where everyone works in the same physical location? Does anything different need to be done to compensate for the lack of face-to-face contact? This article identifies unique factors for virtual teams, and then provides recommendations and guidelines that can help virtual teams be successful. With the right planning, virtual teams can equal or exceed the performance of face-to-face teams.

PURPOSE OF TEAMS

Teams are used in both educational and corporate settings for tasks such as process management, problem solving, and project work. In a team, the leadership is shared and the members are mutually responsible for the outcome of the team. Team tasks are interdependent; they require collaboration among the team members, and teams are empowered to control how they reach their goals (Yancey, 1998).

What is a virtual team? What makes it different from any other team? A team is considered virtual because much or all of its communication takes place outside traditional in-person meetings, instead using electronic technologies such as e-mail or video teleconferencing (Grosse, 2002). Common characteristics of virtual teams are:

1. The participants are physically separated.

2. They are dependent on communicating using some form of CMC.
3. They have no prior history together (Jarvenpaa & Leidner, 1998).

The context, as it relates to the work environment, also makes a virtual team unique from a traditional team (Gluesing et al., 2002). Language and cultural differences that exist in geographically dispersed teams also present challenges to virtual teams (Grosse, 2002).

Many variables have been considered in researching team effectiveness and its impact on team performance. Alge, Wiethoff, and Klein (2003) studied the impact of a team's past history or intended future on a team's ability to communicate effectively and make good decisions. The research focused on whether the fact that a team had worked together in the past or expected to work together in the future affected the team's performance in both in-person and virtual team environments. Panteli (2003) categorized teams as short-term and long-term teams and studied situational factors that affected team performance. Grosse (2002) examined the pros and cons of communication methods for virtual teams and the impact of cultural differences. These research efforts have attempted to characterize teams and then determine the variables that affect virtual team performance.

TEAM SUCCESS FACTORS

While virtual teams face many more unique challenges than a traditional team that has geographic proximity, the two do have similar goals. According to Rubin (2002), there are four key principles that are important to follow when creating a team environment:

1. Team members must have relevant assignments. In other words, they must feel that their participation matters.

2. Goals are interdependent and shared accountability exists for the team's results.
3. The team is provided a clear and gradual path to self-sufficiency.
4. Team members are provided with the tools and time that they need to continually improve business performance.

Rubin (2002) recommended that a design document be created that provides something concrete for team members to reference that includes team goals, meeting formats, communication methods, deadlines, and team roles. This document then becomes a blueprint for everyone to follow and provides a medium that will withstand changes in personnel and time.

Good communication is one of the most critical elements of a successful team (Gundry, 2000). Beranek (2000) stated, "a virtual environment fundamentally transforms the ways in which teams work, making communication and collaboration even more critical to team success" (p. 1). According to Alge et al. (2003), the level of openness and trust, the quality of team-member exchanges and interactions, and the degree of information sharing are critical to team performance. Lack of trust will reduce the amount of communication within a team, and decrease team members willingness to share information (Alge et al., 2003). Existing research indicates that communication and trust are vital to virtual team success as well (Beranek 2000; Jarvenpaa & Leidner 1998; Snyder, 2003). It is important to attend to the human factors involved when people are expected to work as part of a virtual team (Snyder, 2003). With cultural and language differences involved, understanding the human factors is even more critical to team success.

CHALLENGES FACING VIRTUAL TEAMS

To understand the challenges facing virtual teams, it is helpful to review the key requirements identified as essential to good communication for any team. The three key requirements are openness and trust, high quality interactions among team members, and a high degree of information sharing (Alge et al., 2003). Can virtual teams achieve these communication levels important to good teamwork with the constraints brought on by technology and distance?

Establishing openness and trust among team members has many challenges and can be extremely difficult when the timeframe for the team to complete their work is short. Trust is often developed in stages. At first, trust is established based on social communication through introductions and exchanges about backgrounds and sharing of personal information (Snyder, 2003). This type of trust creates expectations of how a person will perform during the project. After this initial phase, trust is developed based on actual performance. Jarvenpaa and Leidner (1998) suggested that something that might be endemic to virtually communicating temporal teams was the role of response. This described a person's strong desire when communicating electronically, or virtually, to receive a response to his or her communication. Receiving validation to communication and idea generation were important to the development of trust. Temporary teams must find ways to establish trust quickly and may need to find commonality among members such as shared values and attitudes to build trust (Panteli, 2003). Frye (2000) proposed that forming agreements is critical. She emphasized that if a team cannot work out issues on what tools the group will use to communicate (such as e-mail, chat, or voice mail) or the frequency of updates, discussions, and deadlines, the team will flounder.

Technical challenges exist that can interfere with providing high-quality interactions among team members. Common obstacles for virtual team members include lack of experience using the technology required and also lack of an awareness of how to incorporate the technology into the team's work (Grosse, 2002). Ocker and Fjermestad (2000), in their study of high- and low-performing teams, found that high-performing teams used the technology to their advantage, while the low-performing teams struggled in this regard. This can be explained using the Structuration Theory that proposes that the richness of a medium is not static, but changes through the appropriation process or through how it is used. Therefore, high-performing teams may be better at using the technology to their advantage than low-performing teams (Ocker & Fjermestad, 2000). Jarvenpaa and Leidner (1998) researched low- and high-performing virtual teams. They categorized the teams' level of trust at the beginning of the project and the level of trust upon completion. Teams that ended on a low note had difficulty determining how to work with others at a distance and often blamed technology as a reason. The teams that ended with

a high level of trust developed ways to deal with the technological and task uncertainty. These successful teams developed schemes to sequence messages, so that a recipient would know if he or she missed messages, they communicated availability, and often summarized key agreements to make sure that everyone understood what was going on.

Exchanging information at a distance can be challenging due to the lack of physical contact with other members, limitations of the technology available, and the learning curve required to maximize individual and team potential. Frye (2000) stated that, "In the traditional world, successful teams tend to have lots of informal contact. Managers can bump into team members in the corridor, for example, and end up conveying important information during a brief, casual conversation."

Success of virtual teams can be dependent on the frequency and type of information shared and types of discussions held. Grosse (2002) reports that some managers estimate that 75 to 80% of team communication is through e-mail. In Ocker and Fjermestad's (2000) research on virtual teams tasked to do software design, they found that low-performing teams did not communicate as much or about the same types of things as the high-performing teams. Teams were responsible for coming up with a software design. They were evaluated on how much time was spent on the actual design process, versus time spent summarizing their decisions and reporting their findings. Their research showed that low-performing teams spent proportionately less time summarizing and writing up their work compared with the time spent on the design itself. In all discussions, the low-performing teams exchanged fewer messages than the high-performing teams. The researchers concluded that, it appears that "poor time management and the inability to meet a firm deadline are culprits leading to the less-than-desirable results" (Ocker & Fjermestad, 2000, p. 9).

RECOMMENDATIONS

Identification of the criteria for fostering a successful team environment and an awareness of the challenges facing virtual teams provides us the information needed to create a framework for successful virtual teams. As described earlier, successful teams require relevant assignments, interdependent goals, shared accountability,

a clear and gradual path to self-sufficiency, and the tools and time needed to improve business performance. Virtual teams need a clear understanding of the goals expected for the project and goals need to be adjusted if a team's mission changes (Gluesing et al., 2002). To provide this environment for a virtual team, the challenges of how to build trust among team members, select technologies for productive group communication and exchanges, and create an environment that supports information sharing among team members must be addressed. The framework for successful virtual team implementation covers the project initiation, task identification and completion, and project conclusion phases.

During the project initiation phase, the team must focus on team member introductions (Gluesing et al., 2002) and on defining and documenting a charter for the team to follow. These activities will help establish "social trust," and provide structure to the team. When team members are meeting each other, even asynchronously, first impressions are important. Beranek (2000) found that teams that expressed positive attitudes at an early stage established earlier social trust. To establish connections with team members, it is believed that it is critical to engage in an open exchange of messages at the beginning of the team's formation, even if it is not necessary to meet in person. Including personal touches in e-mail communication, such as exchanging photos, recognizing birthdays, company anniversaries, and family events, breaks down communication barriers (Grosse, 2002). This introductory phase for the team might also call for training on how to work in a virtual environment if participants are uncomfortable working in this arena. Research conducted by Beranek (2000) found that teams who received training on communicating in a virtual environment were able to develop higher levels of cohesiveness faster than teams who had not received training.

A team charter is a critical element to any team's success. With time, cultural, geography, and technology challenges facing virtual teams, a team charter can provide the structure needed to overcome them. The charter should not be confused with a design document for the project focusing on the scope and deliverables of the work itself. The charter is more like a contract among team members defining how they will work together. Rubin (2002) proposed that all teams need a document that describes the processes they will use to function. In a virtual world, communication practices

Figure 1. Sample elements for team charter

TEAM CHARTER	
Section	Details
Summary of Team Assignment	<p>Basic description of:</p> <ul style="list-style-type: none"> • the project • customer requirements • major deadlines
Team participants	<ul style="list-style-type: none"> • Bio of each team member – include something personal such as hobbies, types of pets, sports interests (Grosse, 2002) • Photograph included if possible • E-mail information – 2 if possible • Phone numbers with best times to contact each other • Work schedule • Time zone • Preferred communication method such as phone calls, voicemail, email, chat • Planned absences/vacations during the project
Roles and Responsibilities	<p>Include descriptions of the following where appropriate.</p> <ul style="list-style-type: none"> • Team leader – Should focus more on the big picture of the project, and the processes the team is using, as opposed to overseeing individual tasks. (Ransleben, as cited by Frye, 2000) Responsible for enforcing the charter. • Team facilitator – Oversees discussions, monitors the way the team works, and resolves conflicts. (Grosse, 2002). • Technical coordinator – provides a focal point for technical issues and should provide guidance to members on how to maximize the use of technology.
Communication Tools	<p>Include descriptions of the following tools that will be used:</p> <ul style="list-style-type: none"> • Asynchronous <ul style="list-style-type: none"> o Bulletin boards o Discussion boards o Email o Document exchange • Synchronous <ul style="list-style-type: none"> o Groupware o Conference calls o Online chat o Video conferencing
Communication Guidelines	<p>Document the processes for maintaining the following:</p> <ul style="list-style-type: none"> • Archival of team discussions, preferably in a database, to be available for members that are absent or for later reference (Snyder, 2003) • Guidelines on how to set a positive tone for the team, and the importance of maintaining courtesy and tact (Snyder, 2003; Kimball & Eunice, 1999) • Response expectations <ul style="list-style-type: none"> o How quickly are team members expected to respond to phone calls and email messages? (Jarvenpaa & Leidner, 1998) • Conflict resolution procedures (Snyder, 2003)

and procedures has proven to be one of the most critical elements to a team's success. These communication practices should be included in the team charter (see Figure 1).

During the middle phase of the project where the work actually happens, the focus is on defining tasks, group coordination of tasks, and completion of tasks. The team must be using the processes defined in the team charter to coordinate these functions. During this phase, conflicts are bound to occur, and the team must follow a process to resolve them (Gluesing et al., 2002). If conflicts are not resolved, the project may fail (Berge, 1998). One solution to handle conflicts is to choose a team member with good interpersonal skills to act as a team facilitator (Grosse, 2002). For the team to truly reach its' potential, members should not shy away from interdependent work or brainstorming activities. Recent research finds that virtual teams can be successful at creative activities such as brainstorming and even surpass teams that are physically together (Alge et al., 2003). During this phase, highly successful teams should invest in taking time to summarize their work in process and communicate frequently with their coworkers (Ocker & Fjermestad, 2000).

The last phase important to successful teamwork is introspection. The team needs to take time to evaluate what went well and what did not. Teams should hold a "lessons learned" session. It is important that team members focus on the problems and successes of the team as a whole without making it personal. The team manager or facilitator needs to establish the climate for the meeting, keeping the discussion on track and setting reasonable expectations.

CONCLUSION

While the use of virtual teams in both the workplace and college settings is on the rise, not all of these teams are immediately successful. While early research on virtual teams was not as positive concerning the potential they could achieve, recent research supports that virtual teams can produce at the same or even higher level than face-to-face teams (Jarvenpaa & Leidner, 1998; Ocker & Fjermestad 2000; Panteli, 2003). It is important to look at what can be learned from the significant and extensive research that has been done on teamwork in a traditional setting, identify the unique factors of teams working in a virtual setting, and adapt the char-

acteristics of successful teams to fit in a virtual world. Many of the challenges experienced by virtual teams, such as difficulty in building trust, communicating in an appropriate, timely, and effective fashion, and using technology to their advantage, can be overcome.

It is more important than ever that virtual teams invest in planning time, give members a chance to get to know each other, and document the processes they plan to use when working together. By addressing these issues at the onset, the virtual team will function more as a unit and have resources and processes available to handle problems along the way. Most interesting is that these activities are important to the functioning of any successful team. Yet in an in-person environment, they can be handled in a more casual fashion—through a conversation in a hallway or stopping by an office, and by observing visual cues in meetings and team discussions (Beranek, 2000; Berge 1999; Kimball & Eunice, 1999). Since the casual contact is missing for a virtual team, more formal agreements are important for a virtual team to work well together (Frye 2000). Therefore, anyone considering using virtual teams needs to provide direction up front to create an environment for success, not one doomed to failure. Taking time initially to build trust among team members and to define the communication processes will set a virtual team up for success.

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KEY TERMS

Asynchronous Communication Tools: Communication does not occur in real time. Communication can be received “any time.” E-mail is an example of an asynchronous tool as an electronic mail message waits for the recipient to open it.

Computer-Mediated Communication (CMC): Using technology-based tools such as e-mail, chat programs, or conferencing tools to communicate at a distance.

Context: Describes the working environment and atmosphere including policies, work hours, work climate, and work goals.

Shared Accountability: All team members are responsible for achieving team outcomes, not just the team leader or manager.

Structuration Theory: The richness of a medium is not static, but changes through the appropriation process or through how it is used (Ocker & Fjermestad, 2000).

Synchronous Communication Tools: Communication occurs real time. Conferencing tools are synchronous. Participants must be together at the same time for the communication event to occur.

Bringing Out the Best in Virtual Teams

Virtual Team: Much or all of team communication takes place outside of traditional in-person meetings, instead using electronic technologies such as e-mail or video conferencing (Grosse, 2002).

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