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Vicki McKinney
University of Wisconsin - Milwaukee

Edward Mabry
University of Wisconsin - Milwaukee

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Vicki McKinney, University of Wisconsin-Milwaukee, vrm@uwm.edu
Edward Mabry, University of Wisconsin-Milwaukee, eamabry@uwm.edu

Abstract

This research assesses factors leading to satisfaction and productivity in team collaboration. A longitudinal design is used in analyzing predictive relationships between team communication, social process factors (group feedback and interpersonal trust), and productivity and satisfaction. Virtual and face-to-face teams pursuing varying tasks and goals are paired to provide information and collaborative support. Data collection continues.

Introduction

Teams are often viewed as a magic bullet to problems facing an organization's problems (Ashkenas, Ulrich, Jick, and Kerr, 1995). Thus, many organizations quickly form teams as an approach to solving a problem. Teams allow people from various areas of the organization, or from outside the organization, to be brought together with the goal of solving a given problem. Yet, organizational teams have permeable boundaries that increase their complexity and affects performance outcomes (Putnam and Stohl, 1996).

Collaboration requires team members to share goals and accountability. Collaborative technologies allow teams to work together online. While many advantages are associated with online collaboration, teams do not always have experiences allowing cohesion and satisfaction with the group's interaction process to develop (Warkentin, Sayeed, and Hightower, 1997). This project focuses on the role of communication in collaborative relationships between face-to-face and online (virtual) teams. The purpose of this study is to identify relationships between communication and other social process factors, particularly performance feedback and interpersonal trust, that contribute to team productivity and satisfaction.

Literature Review
Participation

Differences exist between face-to-face and online interaction contexts. Yet, comparative analyses indicate these differences are related to time and effort requirements involved in communicating (Walther, 1996). Thus, we would expect the frequency and amount of communication, both within and between these types of groups, to differ. Yet, group participation is positively related to effective performance (Guzzo, 1986). Therefore, we should also expect that the frequency and amount of interaction between collaborating teams will predict team productivity and satisfaction.

Performance Feedback

Groups effective at satisfying situational expectations are likely to interact more because members perceive their communication as benefiting group performance (Guzzo, 1986). However, Guzzo (1986) has demonstrated it is the timeliness, relevance, and valence of performance feedback that significantly influences group perceptions of effectiveness. Therefore, performance feedback can either positively or negatively influence group participation, the willingness of members to communicate, and group productivity and member satisfaction.

Trust

Demands placed on temporary groups require the group members to rely on trust centered on each individual's component role performance (Meyerson, Weick, and Kramer, 1995). Respect for competence and reliability are conditions which allow trust to exist among professionals (Whitney, 1994). Team members understand trust is required to be effective so they must not fail to meet the expectations other have of them (Shaw, 1997).

Performance feedback, then, is likely to influence the nature of trust between team members. Trust is a dynamic phenomenon that takes on a different character at the early, developing, and mature stage of a relationship (Lewicki and Bunker, 1996). Yet, because trust develops over time, both too much trust developed early in a group's task cycle or too little trust emerging near the end of the task cycle appears to attenuate performance results (Jarvenpaa and Leidner, 1998). Thus, we would expect the timing of trust to be interrelated with a team's performance feedback and affect both participation and group outcomes in accordance with the substantive nature of the team feedback.

Performance and Satisfaction

When comparing various modes of communication, teams using a combination of asynchronous computer conferencing and face-to-face communication were found to have a higher level of satisfaction with their solution then teams using a single mode of communication (Ocker, et al., 1998). Regardless of a team's mode of interaction, there is convincing evidence that a team's performance effectiveness (individually and collectively) is inextricably connected to member feelings of satisfaction (Guzzo, 1986; McGrath & Hollingshead, 1994). Moreover, in longitudinal studies of team performance, both factors are known to influence group participation. The relatedness of these two variables argues for their mutual accountability as important indices of group outcomes. The conceptual model for this study is shown in Figure 1.

Methodology

This research project is a joint project between the Management Information Systems (MIS) and Communications areas at the University of Wisconsin-Milwaukee. The project was designed to help students realize the importance of communication in the collaborative process. Learning should be enhanced by the experience of participating on a real team and working on a case adapted from an actual business problem. The following sections describe the collaboration participants and activity. The proposed data collection is also discussed.

Team Participants

After participating in several communication exercises, 34 undergraduate students enrolled in a Systems Analysis and Design (SAD) class formed teams consisting of 4 to 5 members. The 7 MIS teams were then paired with teams formed from 35 students enrolled in an undergraduate Organization Communication Technology course. While the SAD course is taught in the traditional classroom setting, the communications course is a virtual course taught online.

Many of the students registered in the two courses are commuter students so they only come to the physical campus when they are required to. To accommodate for this, the teams were allowed to decide how they would meet, face-to-face or virtual, with the only criteria being all meetings had to be planned using email.

A second class of 25 MIS undergraduates has also been assigned the same project case but without the virtual team collaboration. These 6 face-to-face teams will serve as a control group.
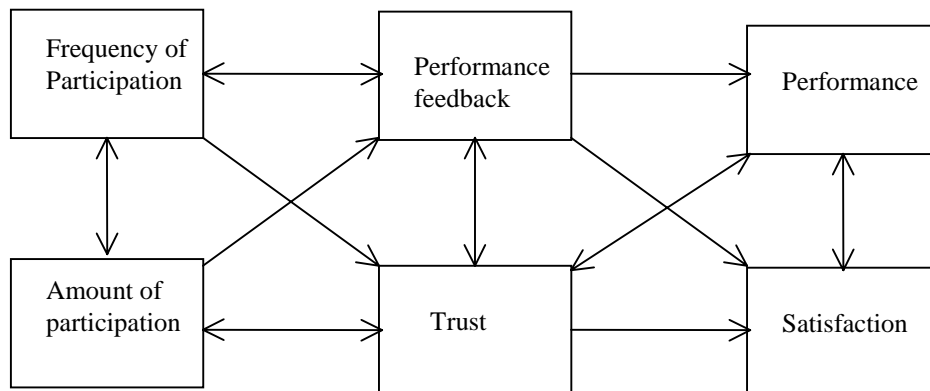

Figure 1. Conceptual Model Showing the Relationships Leading to Team Productivity and Satisfaction.

Collaborative Activity

Teams were given the task of completing a business case involving the redesigning of a business process. To ensure realism the case was adapted from an actual business problem facing a national company with a local office. The business case was placed on the web to provide easy access for each team. Students in the SAD course were instructed to play the role of a consultant team with the virtual team acting as experts brought into the project to add expertise on the communication process occurring in the case. Deliverables for the project will be

collected in three reports during the course of a 15-week semester. Each report has information needs which present opportunities for the consulting team to counsel with the communication team concerning various aspects of the project. To encourage the elicitation of help from the communication experts various communication paths were described in the current process that were not efficient.

Data Collection

Three measurements of the constructs under study will be taken. Upon the completion of each report, questionnaires will be administered to each team member. The questionnaire, developed from previously tested instruments, has a section dedicated to evaluating fellow team members. Teams in the traditional class setting will be given class time to complete a questionnaire after each report in turn. Virtual teams will be offered bonus points for completing and submitting a questionnaire.

Additional insight will be gained through the examination of the email messages exchanged between team members. Students were instructed to copy their instructor on all email exchanged concerning the project.

Conclusion

This study will allow insight on the communication process between face-to-face teams and virtual teams. Understanding will be gained on the differences in trust development, as well as, cohesion and satisfaction that can be applied to teams collaborating in the real world. It is through studies of this nature that organizations can learn how to facilitate the use of teams to better meet the organization's goals while providing satisfaction to the individual team members.

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