

Transactive Memory and Work Group Performance

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As work groups become increasingly important in organizations, interest in methods for improving their performance is rising as well. Some managers believe that the best way to improve a work group's performance is to provide it with greater resources (e.g., smarter people, larger budgets, better equipment). But an alternative approach, one now favored by many managers, is to help a work group make more use of the resources it already has. In particular, there is much interest in the notion of "intellectual capital" -- the total pool of knowledge possessed by individual group members (see Stewart, 1995a; 1995b; 1997). How can we help a group to identify and then use more of that knowledge?

One option might be to strengthen the group's transactive memory system. Wegner (1987) was the first theorist to describe and analyze transactive memory. He noted that people often supplement their own memories, which are limited and can be unreliable, with various external aids. These aids include objects (e.g., address or appointment books) and other people (e.g., friends or coworkers). Wegner was especially interested in the use of people as memory aids. He speculated that a transactive memory system may develop in some groups to ensure that important information is remembered. This system combines the knowledge possessed by individual group members with a shared awareness of who knows what. So, when group members need information, but cannot remember it on their own, or doubt that their own memories are accurate, they can turn to each other for help. A transactive memory system can thus provide the group's members with more and better information than any of them could remember alone.

The potential benefits of transactive memory for a work group's performance are clear. When group members know more about each other, they can plan work more sensibly, assigning tasks to the people who will perform them best. Coordination ought to improve as well, because workers can anticipate, rather than simply react to each other's behavior. As a result, they can work together more efficiently, even if task assignments are unclear. Finally, problems should be solved more quickly and easily when workers know more about one another, because then they can match those problems with people who are most likely to solve them. Once those people are identified, they can either be asked for help, or the problems can simply be given to them to solve.

There is some indirect evidence that work groups perform better when their transactive memory systems are stronger, but until recently, more direct evidence was lacking. A few years

ago, we began a program of research to collect such evidence. Detailed summaries of that work will be provided in our talk and can also be found in the references at the end of this abstract. But a few important features of our research are worth noting here. We begin by bringing subjects (undergraduate college students) to our laboratory, where they are trained to build transistor radios using kits containing many components. This training is carried out during an hour-long session, in which subjects watch a radio being built by the experimenter and then practice building radios themselves. The experimenter provides help (when requested) and feedback throughout this first session. One week later, at a second hour-long session, small groups of subjects (three-person, same sex) are tested to see how much they can recall about building radios, and how well (speed and accuracy) they can actually build radios. Each group is videotaped while it works.

In most (but not all) of our projects, we have strengthened or weakened the transactive memory systems of these groups by varying the training format of the initial session. For example, in several projects we have trained some group members individually and others together. If group members are trained together, then they can see how well each person performs each aspect of radio building. This strengthens the group's transactive memory system and should thus improve its performance, relative to groups whose members were trained individually, and who thus know little about each other's radio-building skills.

All of our projects have shown that training group members together, rather than apart, improves the performance of their groups, and that this change is due to the development of transactive memory systems. We have measured the strength of transactive memory systems both directly (by comparing group members' beliefs about one another's radio-building skills with actual skills) and indirectly (by coding behavior that was symptomatic of transactive memory from the videotapes of group testing sessions).

As noted earlier, more detailed information about our research program will be provided during the talk. The talk will also feature a discussion of the many issues that we hope to study in future research on transactive memory and work group performance. Examples of such issues include (a) Are there other, easier ways to strengthen the transactive memory system of a group, other than training its members together?; (b) Can transactive memory systems developed around one set of work tasks transfer to other tasks?; (c) What factors moderate the effects of transactive memory on group performance – when is transactive memory especially valuable?; and (d) When turnover occurs, how can transactive memory systems be preserved?

Suggested Readings

It would be helpful to begin with the Stewart papers, which describe both the problem organizations face in making better use of their intellectual capital, and the methods some organizations have developed for solving that problem. Next, the chapter by Wegner is an excellent introduction to the notion of transactive memory systems in groups. Finally, any of the other papers provides detailed descriptions of the research projects we have carried out on transactive memory and work group performance.

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Liang, D. W., Moreland, R. L., & Argote, L. (1995). Group versus individual training and group performance: The mediating role of transactive memory. *Personality and Social Psychology Bulletin*, 21, 384-393.

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