

the structure and orienting members to one another helps the group operate smoothly.

When formation fails to bind members together around a common purpose, most self-organized groups will quickly dissolve. Assembled groups whose members are not so free to leave the group may, however, continue to meet even without a sense of shared purpose or commitment. Poor group design increases the risk of failed formation, low commitment, and poor performance. Groups that are too large to coordinate easily, with members who have conflicting expectations or agendas and very different backgrounds, and whose mission is either unclear or not aligned with member needs, will have special difficulty completing group formation and working together for a common purpose.

Holly Arrow

See also Coalitions; Group Boundaries; Group Composition; Group Development; Norms; Ostracism; Roles; Team Building

#### Further Readings

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## GROUP LEARNING

Groups and teams have increasingly become a critical component in organizations. Indeed, many organizations rely on groups to carry out both operational and strategic tasks, such as designing and producing new products, delivering services to customers, and developing strategies to respond to changes in the environment. While working on these tasks, learning at the group level occurs when teams change what they know or what they do based on the experience they have acquired working together on the group task.

The topic of group learning has received increasing attention from both researchers and practitioners over the last two decades. Studies across a variety of disciplines have addressed questions such as these: Under what conditions do groups learn? Which factors inhibit or enhance group learning? Which factors explain differences in rates of learning across groups and organizations? The main findings of research investigating learning at the group level is the subject of this entry. The entry discusses the learning process and its main subcomponents, identifies both antecedents and consequences of group learning, and describes why learning in groups is important to organizational effectiveness. Although many researchers use the terms *groups* and *teams* interchangeably, others differentiate between the two terms. In this entry, the terms *team learning* and *group learning* are used interchangeably because this terminology does not affect the findings discussed.

### Research on Group Learning

Group learning emerged as a distinct research topic in the 1990s. Since then it has greatly expanded in both volume and variety. Research on group learning builds on and complements a wealth of studies on organizational learning. Organizational learning has been investigated in many research fields, including organizational behavior, industrial engineering, operations management, and strategic management. Research on both group and organizational learning makes the important distinction that learning at the group or organizational level is different from individual

learning. Not only does group learning involve learning by individuals, it also involves sharing, distributing, and coordinating knowledge across individuals. If an individual group member has learned something, this does not imply that group learning has occurred. For group learning to occur, group members must have access to others' knowledge—either because it has been shared with them by the relevant individuals or because they know that they can access the knowledge by consulting the individuals or a repository such as a database containing that knowledge.

While group learning is critical to an organization's success and survival in a constantly changing environment, assessing it is a challenging task. Two main measures are commonly used to assess group learning: (1) changes in group knowledge that occur with experience and (2) changes in group performance that are associated with experience. Both measurement approaches pose challenges. The difficulty with the first measure is that much of the knowledge group members acquire, share, and use is not coded in formal documentation; is "tacit"; is distributed across members; or resides in repositories other than individuals (such as routines or technologies the group uses to accomplish tasks). As for the second measure, researchers have used changes in the routines the group uses to perform its task or changes in characteristics of task performance (such as quality and speed) that occur as the group gains experience to measure group learning. Yet, there are many factors other than experience that influence group performance. Researchers need to account for such factors or control for them in their empirical research in order to infer that group learning occurred.

Group learning has been investigated in four main streams of research over the last two decades: (1) learning curves in manufacturing or service operations settings, (2) work on group context and group learning, (3) research on how groups learn from different types of experience, and (4) small group research on learning, memory, and knowledge transfer. While a few attempts at synthesis exist across the areas, these research streams have generally flowed in parallel, with little confluence. There are enormous opportunities for these research streams to come together and thereby increase our understanding of group learning.

### *Learning Curves*

Research on learning curves examines the rate of improvement associated with experience in both manufacturing and service operations settings. This research has robustly demonstrated a link between cumulative production experience and operational performance improvement, which is measured by cost reduction, quality improvement, productivity improvement, or completion time. Although research has shown that performance typically improves with experience, it has also documented enormous variation in the rate at which performance improves. Some groups evidence dramatic improvements with experience, whereas others evidence little or no learning. Researchers are beginning to understand factors that explain differences in learning rates observed across groups. For example, research has found that efficiency improvements are enhanced by team stability, knowledge sharing, common ownership, and codified knowledge. These findings point to the influence of the group context on the rate of improvement associated with experience.

### *Group Context and Group Learning*

A second area of research on group learning focuses on the importance of group context in affecting the processes and outcomes of group learning. Studies in this research stream are mainly field based (i.e., done in actual work teams) and investigate how learning processes in groups differ based on contextual factors such as the group's learning climate, leader behavior, and the group orientation or goals. Several antecedents of learning behavior within groups have been identified. Among them there are identification with the group, leader behavior, group climate, shared learning goals and orientation, group structure, and task characteristics. This work has identified important direct effects, such as the influence of context on group learning, as well as variables that enhance or inhibit the impact of context on learning. For instance, a learning orientation (as contrasted with a performance orientation) has been shown to improve performance, but only to a certain extent: If taken too far, a learning orientation can actually hurt group performance. Another important predictor of group learning is psychological safety, defined as a shared belief that a

group is safe for interpersonal risk taking. Research has demonstrated that the effects of team-leader coaching and context support on group learning behavior are due to the effects of the former variables on psychological safety.

### *Types of Experience and Group Learning*

A recent trend in research on group learning is to characterize experience at a fine-grained level and to investigate the effects of various types of experience on learning processes and outcomes. Work in this area has identified different dimensions of experience, such as homogeneous versus heterogeneous experience and direct versus indirect experience. As an example, research has distinguished between learning from direct experience, defined as learning from interactions within a group, and learning from indirect experience, defined as learning by seeking ideas, help, or feedback from outside the group. These distinctions between types of learning are important because different types of learning have different effects on organizational performance variables. For example, local learning or learning from direct experience has been found to positively influence the efficiency of group operations and to be responsible for the effects of group cohesion on efficiency. In contrast, distal learning or learning from indirect experience has been found to positively influence group innovativeness. This stream of research can be productively combined with the second stream to arrive at a deeper understanding of group learning. Examining how dimensions of experience interact with dimensions of the context to affect group learning processes and outcomes is a very promising approach.

### *Group Learning, Memory, and Knowledge Transfer*

A fourth stream of research on group learning examines how members of a group learn either from their own experience or from the experience of other groups, and how they store knowledge in the group memory system. Research in this area is mainly experimental and is thus able to draw causal conclusions on the relationships investigated in a controlled laboratory setting. Through experience working together, group members build a shared understanding and knowledge of the task

they are working on, of the expertise and skills of each group member, and of the resources available to accomplish the task. Groups reach this shared understanding by developing transactive memory systems (TMS), which allow team members to encode, store, retrieve, and share the different pieces of information and knowledge group members possess. When members know what each other knows, both individually and collectively, group performance on interdependent tasks is enhanced. Because of the positive relationship found between transactive group memory systems and group performance, studies have investigated what enhances or inhibits the development of TMS within groups. This body of research has identified features of the group that positively or negatively affect TMS development. For instance, high turnover has been found to inhibit TMS development, while high diversity in group members' expertise and communication has been shown to foster TMS development. Research in this area suggests that storing information and knowledge within groups in a coordinated manner is fundamental to learning processes and leads to better group performance on tasks that involve interdependencies among members.

Not only do groups learn directly from their own experience, they also learn indirectly from the experience of other groups. This later form of learning has been referred to as knowledge transfer or vicarious learning. Personnel movement (the transfer of members across groups) is the primary mechanism through which knowledge transfer has been effected in the laboratory, and it has been shown to be an effective mechanism for transferring knowledge across groups as well as for stimulating the creation of new knowledge among group members.

### *The Learning Process and Its Subcomponents*

Group learning occurs through three main subprocesses: creating knowledge, retaining knowledge, and transferring knowledge. Creating knowledge refers to the development of new knowledge or better understandings of existing information with the group. For instance, as group members work together, they might acquire more information about each other's expertise and skills and, as a

result, develop new understandings or combine their knowledge in new ways. Research on this first subprocess of group learning has investigated when characteristics of members influence the generation of new knowledge. Diversity in the views and perspectives represented in the group has been found to stimulate knowledge creation, and member rotation among groups has been found to have similar effects. The creation of knowledge is also affected by social networks. Specifically, groups with communication ties or links to other groups with different knowledge are more likely to be creative than are groups with dense internal social networks but few ties to external groups.

The second subprocess of group learning is retaining knowledge, which refers to embedding knowledge in various repositories so that it can persist over time and be reused in the future. For example, knowledge might be embedded in individual members, in routines or task sequences, or in member-task networks such as the transactive memory systems group members develop while working together. Depending on where knowledge is embedded, different factors might impair the retention of knowledge. Research has found that turnover is detrimental to a group's knowledge retention when knowledge is embedded in individuals, especially when the members leaving the group are high-performing individuals. However, it has been shown that group structures can buffer groups from the detrimental effects of turnover. When group members have specialized roles and procedures exist for accomplishing the task, the impact of turnover is reduced. Embedding knowledge in routines or in repositories such as tools or artifacts promotes its retention because interruptions in a group's work are less likely to have detrimental effects.

The third subprocess of group learning is transferring knowledge. Through knowledge transfer, one group is influenced by the experience of another. Moving members from one group to another has been shown to promote the transfer of both tacit and explicit knowledge. Other factors influencing knowledge transfer are social networks, communication, relationships between work groups, characteristics of the tasks groups perform, and features of the knowledge being transferred. For instance, research has shown that it is easier to transfer knowledge

codified in routines than noncodified knowledge. A shared superordinate social identity has also been found to facilitate the transfer of knowledge between groups.

### Group Learning Consequences

Group learning has important consequences for both the group and the organization in which the group operates. As mentioned earlier, group learning can enhance group creativity and promote group performance. Learning within groups is a key mechanism through which an organization can learn, adapt, and respond to changes in its environment. Thus, group learning can enable the organization to respond strategically to changes and turbulence in the environment. The relationship between group and organizational learning is poorly understood, and more research is necessary to understand how learning at the group level translates into learning at the organizational level. Also, little is known about how patterns of group learning can be created and maintained within an organization so that different groups can learn in their most effective ways but ultimately toward the same organizational goals. Future research shedding light on these questions is warranted and could yield important insights for theory and for practice.

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*See also* Group Performance; Innovation; Organizations; Personnel Turnover; Social Networks; Team Performance Assessment; Transactive Memory Systems; Work Teams

### Further Readings

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