Global Virtual Teams

The prevalence of global software development and new product development teams is on the increase, and such teams face unique challenges (McDonough, Kahnb, & Barczaka, 2001). First, these teams often are comprised of individuals from different disciplines (software engineering, graphic design, instructional design/educational technology). Second, these teams often are required to communicate and share information virtually, since they are geographically dispersed. These challenges make management of such teams difficult, and very little is known about the conditions and factors that impact virtual team performance. While the task of overcoming these challenges is daunting, the benefits that an effective virtual and cross-disciplinary software development team can have are large. Cohen and Gibson (2003) state, “when organizations compose virtual teams with people from different perspectives and knowledge bases, innovation is more likely to occur” (p.8). In addition, the possibility of creating teams that are virtual allows an organization the opportunity to have the best people for a project actually work on the project, regardless of geographic location.

Major questions related to the study of such teams include: Do virtual teams perform better, worse or the same as face-to-face teams? What makes one virtual team better than another? Are group dynamics fundamentally different in a virtual group than in a face-to-face group? Warkenton, Sayeed and Hightower (1997) found that face-to-face teams outperformed virtual teams, and the latter were less satisfied with the experience. Advances in asynchronous communication tools since this study may have improved the situation for virtual teams, but the question of what makes one virtual team better than another is intriguing. Ocker and Fjermestad (2000) investigated factors that distinguish high- vs. low-performing virtual teams. High-performing teams communicated more and more widely related to design decisions than did low-performing teams. Such teams summarized and reflected more often on processes and deliverables, and essentially mirrored face-to-face teams. Similar findings were reported by Baker (2002) in a study of the effects of technology on decision-making in such teams.

Another key driver of virtual team development and success is the level of cross-disciplinary learning that occurs during the completion of a project. Fruchter and Emery (1999) define cross-disciplinary learning as the individual’s progression from a state dominated by discipline-centric thought to a state in which the individual understands the terminology and processes of another discipline. It is important to investigate how this learning can be supported and assessed.

Cross-Disciplinary Knowledge, Learning and Performance Framework

While much previous research with virtual teams has used a communications-based framework for studying team processes, another approach is to focus on cross-disciplinary learning. A knowledge, learning and performance support framework for cross-disciplinary teams is shown in Figure 1. This framework incorporates a metric for assessing the evolution of cross-disciplinary knowledge within virtual teams, as well as factors and conditions that support team learning and performance.

Figure 1. Cross-disciplinary learning research framework
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