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Probing the Relationships between Team Technology, Leadership Behaviors and Team Performance

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Probing the Relationships between Team Technology, Leadership Behaviors and Team Performance

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Abstract
Theory of Task-Technology Fit suggests that certain types of technologies are better fit for certain technologies. Structuration theory suggests that action and organizational structures affect each other. But how do technology and structures affect each other? In other words, if we use a certain technology versus another, would it change organizational structures and therefore affect our actions? This in-process study is being conducted to answer exactly that. My research questions are: How do various types of technologies affect the leadership behaviors in virtual teams? and Is there a relationship Is there a relationship between technology, leadership behaviors, and team performance? A study is conducted with 100 student teams, where technology and leadership are measured by surveys and team performance is measured by the group's grade on their main team assignment.

Keywords: Virtual teams, leadership, information technology

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PROBING THE RELATIONSHIPS BETWEEN TEAM TECHNOLOGY, LEADERSHIP BEHAVIORS AND TEAM PERFORMANCE

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Keywords: Virtual teams, leadership, information technology

ABSTRACT

Theory of Task-Technology Fit suggests that certain types of technologies are better fit for certain technologies. Structuration theory suggests that action and organizational structures affect each other. But how do technology and structures affect each other? In other words, if we use a certain technology versus another, would it change organizational structures and therefore affect our actions?

This in-process study is being conducted to answer exactly that. My research question is: How do various types of technologies affect the leadership behaviors in virtual teams? Second research question is: Is there a relationship between technology, leadership behaviors, and team performance?

In this study, behavioral leadership literature will be used [1, 2]. Yukl and colleagues distinguished between task- and relationship-oriented behaviors and provided the following definitions [3]: Task-oriented behaviors are those that move the team forward in the accomplishment of its task, such as planning and scheduling work, and coordinating subordinate activities [4]. Relationship-oriented behaviors are those that allow the team to maintain a positive social environment—for example by showing trust and confidence, acting friendly and considerate, keeping subordinates informed, and providing recognition for subordinates' accomplishments" [4]. A leadership study with virtual student teams identify task coordination as an important leadership behavior [5]. However [6] shows that in other virtual teams, namely open source software (OSS) development teams, task coordination, in its traditional sense, is not even observed let alone being considered a leadership behavior. In are recent multiple case study on OSS, I observed that the nature of technologies that are available, and how they are used is quite different: OSS teams use technologies for task coordination (issue trackers) that are open to all members. Therefore each individual enters the tasks that the team should consider. They also use these technologies to assign themselves these tasks. Therefore, the technology takes on the "task coordination" behavior. Now the question is, if this observation, that tools may eliminate some important leadership behaviors, is generalizable to different contexts?

Therefore, I conduct a study with 100 student teams with 4 members. Each team is given four non-graded, yet required group assignments in order to help the group members get to know each other and feel a group environment. The assignments help the teams go through Tuckman's [7] stages of group development by means of course assignments and course rules. For example in the first two weeks, the

students are asked to form a team (forming) identify the team technologies and team norms (norming). They were also told that in cases where their colleagues do not perform, they are able to kick members out. In the first two weeks, about 10-15 of the teams changed members (storming). The teams will do one more ungraded group exercise before they are given a graded case study at the end of the semester. The technology they use, their perceived leaders and the behaviors of the perceived leaders will be captured by several surveys at the end of first, second and final task. The group performance will be measured by the final grade of the team case study assignment, which will be determined by two independent graders who will resolve discrepencies through discussion.

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