RESEARCH: SUMMARY SERIES

Precursors to engaged team leaders in virtual project teams

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KEYWORDS

- Virtual project team
- Geographically distributed areas
- Distributed team
- Transformational leadership
- Transactional leadership
- Technological medium of interaction

Article highlight:

The researchers set up four 'virtual' project teams of graduate students (in architecture, engineering and construction sectors) based in two geographically distant universities, to work on a virtual project over a period of twelve weeks. Data was obtained from the participants' interactions and statistically analysed to investigate how prior experiences – of working in a distributed team and use of technological media – affected their performance in more traditional aspects of leadership. The researchers tested five hypotheses about the contribution of prior experiences to engaged leadership, and found evidence in favour of all five.

What does the paper cover?

Virtual teams, with members located in geographically distributed (separate) areas or countries, are increasingly common organisational structures in project-based industries such as architecture, engineering and construction (AEC) which, as they become more global, seek optimal performance in terms of costs, skills and logistics.

The authors looked at leadership in virtual teams by means of a carefully designed model that yielded data from potential future project managers in AEC. Their statistical analysis explores how traditional 'transformational' and 'transactional' leadership skills are supported by prior career experiences in distributed teams and using digital technology.

Methodology:

The AEC graduate students participating in the study were located at two geographically separate United States research universities. Grouped into four virtual teams of five, they were given a hypothetical construction project that they were asked to spend 2.5 hours per week managing, over a three-month period. The 'technological medium of interaction' was CyberGRID, a virtual workspace and digital communication platform designed for AEC industries, which the students had not used before.

The researchers used data from weeks two, six, seven and nine, having identified these as the most dynamic stages of the project (scoping, optimising of networks, integration of models, and finalising of designs). Their statistical approach was a multiple regression modelling process. They used transition markers to separate the 47 hours of total project activity into 9520 discrete 'interactions' and then analysed these statistically according to the selected variables: three ***independent variables*** representing experience (leadership training, distributed team experience, and experience with technological media) and five ***dependent variables*** representing aspects of engagement (rapport building, solidarity building, task/role assignments, situation awareness building, and troubleshooting).

To test their five hypotheses about the contribution of prior experience to 'engaged leadership', they determined a criterion for each variable that could be quantified numerically; for example, as an indicator of solidarity they chose the use of the pronoun 'we', expressed as a ratio to total pronouns used. They then subjected these numerical quantities to analysis, using statistical coefficients to compare the independent and dependent variables.

Research findings:

The results of the analysis supported all five of the research hypotheses. In brief, the confirmed findings were that:

1. traditional leadership training had a positive impact on skills in rapport building, solidarity building and task/role assignment interactions
2. the benefits of leadership training were enhanced by the leader having experience of working in a distributed team
3. experience in a distributed team had the further advantage of strengthening skills in situation awareness
4. the benefits of leadership training and distributed team experience were further enhanced when project managers had experience of the technological medium of interaction
5. experience of the technological medium of interaction strengthened leaders' capacity for troubleshooting.

Conclusions and recommendations:

In general, the researchers found that in virtual project teams the prior experiences of leaders (in distributed teams and technology) served to increase their engagement in transactional and transformational interactions, as well as in technological ones. They concluded that traditional leadership training, while useful, 'does not optimally transfer to virtual project work' and that the technological setting 'requires modification to the ways that leaders interact in order to maximise their engagement'. Thus the authors believe that technological behaviours need to be incorporated into theories of effective leadership in virtual project teams.

The authors would welcome further investigation into how strategies for interacting in face-to-face contexts could be adapted to virtual contexts; also the application of a qualitative approach to their findings. They recommend the exploration of a cross-generational model, combining the technological fluency of younger generations with the leadership experience of older AEC professionals.

Significance of the research:

The research provides some clear pointers regarding engaged leadership in virtual projects. It would be desirable to recruit leaders who, in addition to traditional transformational and transactional skills, have prior experience of working in distributed teams and of the technology to be used in managing the project.

Comments from the authors:

Given the current global political climate of increasingly restricted national borders and difficulties for international travel, virtual teams are becoming increasingly important as firms work to access specialised knowledge that is distributed across regions. In response, researchers such as Julia E. Hoch at California State University Northridge have continued to explore how traditional leadership practices can be best adopted or adapted to benefit virtual teams

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Complete article

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Glossary:

Virtual project team:	Organisational structure in which teams located in geographically distributed (separate) areas work together on a project, relying upon technology for communication.
Traditional project team:	Organisational structure in which project staff are all based in a single location or area and communicate face-to-face as well as through technology.
Geographically distributed areas:	Areas that are far apart, or not close enough together to make easy travel or face-to-face communication possible; for example, in different countries.
Distributed team:	A team working across geographically distributed (separate) areas.
Transformational leadership:	Leadership that centres on managing interpersonal relationships.
Transactional leadership:	Leadership that focuses on facilitating the execution of tasks.
Technological medium of interaction:	The digital platform or software that is used to manage interactions and communication between members of a virtual team.