Development and Leadership in Computer-Mediated Collaborative Groups

Fay Sudweeks
BA, MCogSc

This thesis is presented for the degree of
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I declare that this thesis is my account of my research and contains as its main content work which has not previously been submitted for a degree at any tertiary education institution.

__________________________
Fay Sudweeks
Dedicated to my father…

… who wanted to wait longer
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ABSTRACT

Computer-mediated collaboration is an important feature of modern organisational and educational settings. Despite its ever increasing popularity, it is still commonly compared unfavourably with face-to-face collaboration because non-verbal and paralinguistic cues are minimal. Although research on face-to-face group collaboration is well documented, less is known about computer-mediated collaboration.

The initial focus of this thesis was an in-depth analysis of a case study of a computer-mediated collaborative group. The case study was a large international group of volunteer researchers who collaborated on a two-year research project using asynchronous communication (email). This case study was a window on collaborative dialogue in the early 1990s (1992-94) at a time when information and communication technologies were at an early stage of development.

After identifying the issues emerging from this early case study, another case study using technologies and virtual environments developed over the past decade, was designed to further understand how groups work together on a collaborative activity. The second case study was a small group of students enrolled in a unit of study at Murdoch University who collaborated on a series of nine online workshops using synchronous communication (chat room). This case study was a window on collaborative dialogue in the year 2000 when information and communication technologies had developed at a rate which few people envisioned in the early 90s.

The primary aim of the research described in this thesis was to gain a better understanding of how computer-mediated collaborative communities develop and grow. In particular, the thesis addresses questions related to the developmental and leadership characteristics of collaborative groups.

Internet research requires a set of assumptions relating to ontology, epistemology, human nature and methodological approach that differs from traditional research assumptions. A research framework for Internet research – Complementary Explorative Data Analysis (CEDA) – was therefore developed and applied to the two case studies.

The results of the two case studies using the CEDA methodology indicate that computer-mediated collaborative groups are highly adaptive to the aim of the collaborative task to be completed, and the medium in which they collaborate. In the organisational setting, it has been found that virtual teams can devise and complete a
collaborative task entirely online. It may be an advantage, but it is certainly not mandatory to have preliminary face-to-face discussions. What is more important is to ensure that time is allowed for an initial period of structuration which involves social interaction to develop a social presence and eventually cohesiveness. In the educational setting, a collaborative community increases pedagogical effectiveness. Providing collaborative projects and interdependent tasks promotes constructivist learning and a strong foundation for understanding how to collaborate in the global workplace. Again, this research has demonstrated that students can collaborate entirely online, although more pedagogical scaffolding may be required than in the organisational setting. The importance of initial social interaction to foster a sense of presence and community in a mediated environment has also been highlighted.

This research also provided greater understanding of emergent leadership in computer-mediated collaborative groups. It was found that sheer volume of words does not make a leader but frequent messages with topic-related content does contribute to leadership qualities.

The results described in this thesis have practical implications for managers of virtual teams and educators in e-learning.
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