Chapter XXX

Virtual Collaboration in Immersive and Non-Immersive Virtual Environments

Rosanna E. Guadagno
The University of Alabama, USA

Katrin Allmendinger
Fraunhofer Institute for Industrial Engineering, Germany

ABSTRACT

This chapter reviews contemporary research on virtual collaboration. In particular, we focus on synchronous communication and collaboration processes in virtual conferencing environments. In a virtual conference, interactants are geographically distant but their avatars (virtual representations) appear in the same virtual conference room. Two types of virtual collaboration are examined. First, we review new findings on research in immersive virtual conferencing. Next, we review recent findings on social interaction in non-immersive virtual conferencing. Specifically, we examine the impact of social interaction on these communication technologies. Finally, we conclude with speculation about the future trends in virtual collaboration.

INTRODUCTION

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What is virtual collaboration? Virtual collaboration is a type of collaboration that occurs when colleagues and team mates, who are physically distant, use computer-mediated communication (CMC), rather than face-to-face (FTF) communication to accomplish their shared goals (Wainfan & Davis, 2004). Virtual collaboration is quickly becoming a widely used method of working with others in remote locations, particularly as employers move towards hiring more telecommuting employees. The type of CMC used for virtual collaboration can be text-based, video, audio, or in our case, virtual, which can incorporate the former channels of communication into a
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Figure 1. Example of a human-avatar interacting with a computer-avatar vs. an immersive CVE where both interactants are human-avatars

What differentiates virtual collaboration from FTF interaction? How is the communication mode different? A review of the literature indicated that compared to FTF, virtual collaboration groups