

Chapter 81

Impact of Online Teamwork Self-Efficacy on Attitudes Toward Teamwork

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ABSTRACT

The lack of professional skills in project teams is one of the most important factors contributing to the high failure rate of Information Technology (IT) projects. Therefore, preparing students for increasingly complex IT projects has been an important learning objective in information sciences and technology programs. This article investigates the relationships between face-to-face students' self-efficacy of managing project tasks through online processes and their attitudes toward teamwork. The relationships among student engagement in learning experiences related to teamwork, self-efficacy of technology-mediated teamwork, and attitudes towards teamwork are investigated using confirmatory factor analysis on a data set with 344 participants. The analysis shows that self-efficacy of technology-mediated teamwork mediates the effect of learning engagement on attitudes toward teamwork. Therefore, the article postulates that mastering technology-mediated teamwork skills helps face-to-face students develop positive attitudes toward teamwork, which can be transferred to the workplace.

INTRODUCTION

IT projects are complex undertakings that are known to have high failure rates due to many reasons. In the literature, this high failure rate of information technology (IT) projects has been mainly attributed to the lack of professional skills in IT project teams rather than the deficiencies in the technical skills of the project teams (Keil et al., 1998; Whittaker, 1999). IT projects involve high levels of uncertainty due

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to complex interfaces between technology and people. Technology and user requirements can change during the course of the project. IT project teams usually involve members with diverse background from various departments of the organization and are usually geographically distributed. IT projects typically have a high degree of virtual components. Therefore, team members of an IT project should have the flexibility to adapt dynamic project requirements and technology. In addition to the technical knowledge, career resiliency in the 21st century demands excellence in teamwork, effective communication, adaptability to change, positive and flexible attitudes, continuous learning, self-confidence (Collard et al., 1996). To improve the readiness of their students for the ever-increasing complex IT challenges of the 21st century, information sciences and technology programs have integrated teamwork knowledge, skills, and abilities (KSAs) into their curricula through new course offerings, embedding them into existing courses, or extra circular activities such as workshops and seminars. Furthermore, the use of virtual teams in IT projects has become so pervasive that not only distance learning classes but also face-to-face classes incorporated virtual team projects to introduce IT students virtual teamwork skills (Chen et al., 2008; Kulturel-Konak, Maurer, & Lohin, 2010; Falls et al., 2014; Brewer et al., 2015).

In this paper, we study the effect of students' self-efficacy of applying teamwork KSAs using online mediums on their attitudes toward teamwork. We define self-efficacy of teamwork KSAs using online mediums as students' beliefs in their abilities to perform teamwork KSAs such as resolving team conflict, solving problems collaboratively, communicating effectively, establishing team goals, scheduling and coordinating project tasks using online communication and collaborative technologies. We will refer to this definition as self-efficacy of technology-mediated teamwork for avoiding confusion with virtual teamwork self-efficacy. The target population of the study is information sciences and technology students who attend traditional face-to-face classes. The motivation of this research focus stems from the fact that even in face-to-face team projects, project tasks increasingly take place in online settings. In particular, commuter and non-traditional students have limited time on campus for face-to-face team meetings. Such student groups usually rely on online technologies to perform many components of face-to-face team projects. Therefore, it is important that students are well versed in managing team projects using online mediums for effective teamwork in face-to-face classes as well. Based on this premise, the main research question of the paper is to investigate whether face-to-face students exhibit more positive attitudes toward teamwork if they have self-efficacy of technology-mediated teamwork. In the literature, technology-mediated teamwork KSAs expected from information technology teams are mainly discussed in the context of virtual and distributed teams (Nunamaker, Reinig, & Briggs, 2009; Kulturel-Konak, Maurer, & Lohin, 2010; Schulze & Krumm, 2017). On the other hand, we emphasize the importance of technology-mediated teamwork KSAs for face-to-face student teams. This point is a unique contribution of the paper.

Attitudes toward teamwork can be defined as to the extent that a person is agreeable to work in a team. It is important that students develop a positive attitude toward teamwork because people's attitudes influence their future behavior (Ajzen & Fishbein, 1977). If students develop negative attitudes toward teamwork during their education, they may carry these negative experiences to the workplace. For example, Riebe et al. (2010) note that negative teamwork experiences can discourage new graduates to participate in real-life workplace teams. Cannon-Bowers, Salas, & Milham (2003) state that having positive attitudes toward teamwork is among the factors that determine the success of transferring teamwork skills learned in a training into practice. Furthermore, effective teamwork requires that team members perceive teamwork as an attractive work arrangement. Chapman and Van Auken (2001) investigate the factors affecting students' attitudes toward teamwork and report that students' understanding of the

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