Using Peer Evaluations as Embedded Assessments: Comparing Teamwork Evaluations for Group Projects in Face-to-Face and Online Classes

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Abstract. Peer ratings of teamwork associated with a group project assignment within online and face-to-face classes of a graduate-level course in Organizational Behavior were examined in this article. Partial support was found for the hypothesis that peer ratings of teamwork in the initial (i.e., newly developed) online classes would be lower than those in the face-to-face classes offered in the same time period. Also receiving partial support was the hypothesis that peer ratings of teamwork would be more favorable in later online classes that had enhancements to the group project assignment when compared to those in the initial online classes. Post-hoc analyses suggested there were no significant differences in the peer rating of teamwork observed in online and face-to-face classes after enhancements were made to the group project assignment. Discussion focuses on the value of embedded assessments for continuous quality improvement processes associated with curriculum development.

Keywords: online group projects, embedded assessment, teamwork, peer evaluation.

1. Introduction

Working in teams has become increasingly important in modern work contexts. The goods and services produced by organizations have become ever more complex and often require extensive collaboration of employees in specialized roles. The globalization of trade and proliferation of technological advancements in the workplace has led organizations to adopt flatter, less hierarchical structures, that allow for greater flexibility and heightened demands for employee engagement. Furthermore, working in teams that collaborate and communicate via information technology, referred to as virtual teams, have allowed for organizations to utilize employees that are geographically dispersed and from substantially differentiated time zones. In order to prepare students to work in organizations that are often organized as teams, higher education has more and more utilized group projects. Within the curricula of many business schools,

learning goals associated with teamwork often reside within a course on organizational behavior.

Group projects have become an indelible part of the higher education experience across many academic disciplines. By engaging in group work with peers in their class, students can learn skills of collaboration and also can experience the topic being examined from individualized and involving perspectives. However, group projects can also be dreaded by both students and instructors. Problems of free-loading, conflict, and difficult execution have tarnished the reputation of group projects in some specific situations. Recommendations for making group projects effective have addressed many of these concerns (Fink 2004; Michaelsen & Knight 2004) but have focused mainly on executing group projects in traditional face-to-face course contexts. Less attention has been paid to group projects in online contexts and comparisons of group projects in online and face-to-face contexts (Ekblaw 2016). The purpose of this research is to describe the examination of group projects using assessment data from online and face-to-face course contexts used to drive efforts to improve student learning of teamwork skills necessary in group project implementation.

2.   Group Projects in Face-to-Face and Online Contexts

The casual use of groups in higher education is common in face-to-face classroom settings and typically focuses on discussion and/or application of material associated with the instructor's lecture. Fink (2004) suggested this form of group interaction has more limited influence on student learning than more structured and long-lasting teams that are associated with substantial group projects. Many distinctions between "groups" and "teams" within higher education parallel similar distinctions made in the study and application of group dynamics in professional contexts. For instance, groups tend to have individual accountability whereas teams tend to have both individual and group accountability; groups tend to have one clearly defined leader and teams tend to have shared leadership; and the effectiveness of groups tends to be defined more loosely and indirectly whereas team effectiveness is defined directly by the quality of the collective work product (Fink 2004; Luthans 2011). However, sharp distinctions between groups and teams can be confusing because many processes are also shared by these entities. Understanding that a "team" is a more specific instance of the more general concept of a "group" may help to clarify the distinction between these terms (Forsyth 2010). Thus, all teams are groups, but not all groups are teams.

A number of guidelines for enhancing learning within teams in face-to-face educational contexts have been identified. First, instructors should actively manage student teams by forming them to ensure diversity of membership and mediate conflicts that act as barriers to group cohesion (Michelson 2004). Secondly, in addition to the team's accountability for the end-product, there

should also be mechanisms to ensure individual accountability (Birmingham & McCord 2004; Michelson 2004). Thirdly, the group project assignment should facilitate both the learning of subject matter relevant to the course and the development of teamwork skills (Fink 2004; Michelson 2004). Fourthly, timely feedback to students on their progress in working on the project is critical for the development of teamwork skills (Birmingham & McCord 2004; Michelson 2004). It is important to note that much of the literature on group projects in face-to-face classes focuses on "Team-Based Learning" which prescribes a specific sequence of individual learning activities and assignments completed outside of the classroom environment and group learning activities and assignments conducted inside the classroom (Fink 2004; Michelson 2004). This process exemplifies a specific method for "flipping the classroom". Adaptations of "Team-Based Learning" for online classes have been described (Parish, Williams, & Etis 2021); however, these efforts also acknowledge the challenges of using the specific pedagogical sequence that was designed for face-to-face classes within an online context (Dorius, Madeka, Bender, Johnson, Gillette, & Chapman 2021). The current research did not investigate group projects within the specific processes of "Team-Based Learning" but was influenced by many of its recommendations. Moreover, many of the recommendations of "Team-Based Learning" generalize to effective group projects in online classes that do not adhere to its specific prescriptive processes.

Using online group projects in business classes is critically important because of the increased use of virtual teams in work-related settings. Virtual teams have been defined as a group of geographically-dispersed individuals working on interdependent tasks who have shared responsibility for work outcomes and communicate via informational technologies rather than face-to-face interactions (Cohen & Gibson 2003). This method for organizing work has many advantages for businesses because it helps to achieve operational efficiencies, integrate diverse skills and backgrounds across geographic distances, and increase the time devoted to achieving innovations associated with competitive advantages by extending work on projects across many time zones (Siebdrat, Hoegl, & Ernst 2009). However, virtual teams also present many management challenges because cultural incompatibility and lack of face-to-face interactions can make effective teamwork harder to achieve (Seibdrat *et al.* 2009). Similar advantages and disadvantages to online team interactions exist within the use of teams in online learning in higher education.

Research has contributed to a more elaborate understanding of differences between in-person and computer-mediated interactions. Online interactions are often text-based and provide fewer non-verbal cues in communications than in-person interactions and can result in reduced understanding of the message and less favorable attitudes toward the communicator (Lieberman & Schroeder 2020). Compared to in-person interactions, computer-mediated interactions tend to have a higher degree of anonymity which can result in greater

depersonalization (i.e., perception of fewer individuated factors of oneself and others) and consequently result in a higher degree of group polarization and greater salience of stereotypes. Further, incorporating technologies providing a greater bandwidth of information in online interactions, such as webcams and streaming video, does not eliminate depersonalization processes in online interactions (Postmes *et al.* 2005).

However, some literature suggests there can be advantages of computer-mediated interactions over in-person interactions. Limiting various informational cues via computer-mediated interactions may allow for greater message optimization by putting greater focus on the substance of the communication rather than extraneous cues that are more accessible within in-person interactions (Walther 1996). The advantage of less information in computer-mediated social interactions has also been observed in the process of brainstorming, an exercise for generating ideas and encouraging creative problem solving (Forsyth 2010). A meta-analysis found groups using computer-mediated communication generate significantly more ideas and are more satisfied with their interactions than groups engaged in face-to-face interactions (DeRosa, Smith, & Hantula 2007). Thus, computer-mediated interactions can have many unintended negative consequences that are less prevalent in face-to-face interactions; however, online interactions can also be designed to achieve more favorable outcomes than similar in-person interactions.

Direct comparisons of face-to-face and online teams in business school classes have recently received greater attention in the form of empirical research. Williams and Castro (2010) examined students from face-to-face and online graduate-level Organizational Behavior classes that involved group projects and found that self-reported teamwork orientation and perceptions of social interactions were more favorable in face-to-face than online teams. However, the same study also found that the students' perceptions of their learning was more strongly predicted by teamwork orientation and social interactions in the online than face-to-face teams (Williams & Castro 2010). An implication of this research may be that instructors need to do more to ensure teamwork and social interactions in online group projects to achieve learning goals. Delong and Vander Schee (2021) examined undergraduate marketing students, taking classes in either face-to-face or online format, who worked in teams on a semester long project to develop a marketing plan. They found team interactions that resulted in role assignments congruent with individual role preferences were positively related to perceptions of team performance for students in online classes; however, for students in face-to-face classes this relationship was not significant. On balance, these findings suggest that instructor support of effective team interactions may be even more critical for success in learning about teamwork in online classes than face-to-face classes.