Bridging Team Interdependence Research and Team Project Design to Enhance Student Interactions: A Roundtable Discussion and Resource Exchange

Abstract

While many management classes incorporate team projects to provide opportunities for students to build teamwork skills, students repeatedly choose to "divide and conquer" these projects. Resultantly, students build fewer teaming and interpersonal skills than intended. We propose that management educators can improve this scenario by bridging the gap between team interdependence insights and team assignment design. In this roundtable session, we will highlight research on task, goal and outcome interdependence; share our experiences applying each type of interdependence to team project design; and facilitate roundtable discussions intended to generate new team project design ideas for all participants.

Keywords: team projects, team collaboration, team interdependence

Most Introduction to Management and Organizational Behavior courses include a unit on teams (O'Neill et al., 2017). This is due in large part to the prevalence of teamwork required by organizations today (Morgeson et al., 2010). Additionally, team-related learning objectives typically include building blocks critical to all interpersonal interactions such as communication and conflict management (Kidder & Bowes-Sperry, 2012). Hence, "virtually every business school has adopted student team projects in their curricula" (Jiang et al., 2022, p. 561). When team projects are assigned, the expectation is that students will interact throughout the execution of the tasks and, through these experiences, they will learn more about effective group decision making, conflict management, and communication. However, students often choose to minimize the time spent interacting with their teammates and work mostly independently (i.e., the divide-and-conquer approach) or engage in social loafing (Ohland et al., 2012). When students do not practice the lessons taught in the class, their overall learning is substantially reduced and they are less likely to be able to learn and transfer these skills to the workplace (Bendwell et al., 2013; Kolb & Kolb, 2005). This significant gap in faculty expectation and classroom reality begs the question of what faculty can do in team project design to enhance the quantity and quality of team interactions in order to enhance students' ability to achieve learning goals.

We posit that research on team interdependence may be helpful, and currently underutilized, in designing team projects that encourage or even require greater levels of team interaction in management classes. While team assignments are regularly used in business classes, they are often designed with a task focus and the task is often designed in a way that does not require much interaction between team members to be completed (Hillier & Dunn-Jensen, 2012; Siciliano, 2001). In this roundtable discussion session, the presenters intend to share and solicit best practices for designing team projects that optimize task, goal, and outcome

interdependence to motivate greater team interaction and engagement in team assignments. The goal is to share and extend current management research on best practices in team-project design by building off of research on team interdependence.

Theoretical Foundation/Teaching Implications

Research on team interdependence suggests three types of interdependence exist at varying levels in a team. *Task interdependence* refers to the extent that individuals are dependent on each other in order to complete the tasks or job at hand (Van de Ven et al., 1976). Task interdependence can vary in degree from low, or pooled, interdependence in which tasks are primary executed by individuals with pooled resource inputs or outputs, to high interdependence in which individuals must work together and coordinate continually throughout the execution of the task in order to complete it (Courtright et al., 2015). This has been theorized and measured at both the work design level (e.g., in the nature of the task itself and the range of inputs available to each team member) and at the behavioral level (e.g., how much team members actually engage and coordinate in the execution of the work) (Courtright et al., 2015). Relating this to student team projects, we suggest that while educators often hope for high levels of behavioral task interdependence, students often engage in lower levels of task interdependence. We suggest that a greater focus on designing the work with higher required levels of task interdependence may provide one key to encouraging greater levels of teamwork in student teams. An example approach for enhancing this type of interdependence is in providing different team members with different inputs (e.g., types of information), all of which is required to complete the task (Hillier & Dunn-Jensen, 2012).

Outcome interdependence refers to the extent to which one's rewards and benefits are dependent on the successful achievement of goals by other team members (van der Vegt, 1998).

High outcome interdependence would exist when collective performance is evaluated to determine the level of recognition and rewards assigned to the group overall, while low outcome interdependence would exist when individual performance is evaluated to assign outcomes. Research shows that low interdependence is more likely to lead to competition between members and high interdependence "fosters trust, cohesiveness, and mutually supportive behavior" (Beersma et al., 2013, p. 195). The student team corollary to this type of interdependence is most likely in the way grades are assessed and assigned. Assigning grades at the team level, such that all team members receive the same grade, would be an example of high outcome interdependence; assigning grades individually would be an example of low outcome interdependence. While high outcome interdependence is more likely to lead to collaborative behaviors than low outcome interdependence, it can also more freely enable freeloading and perceptions of unfairness. Hence, team projects are often designed with a moderate level of interdependence in which the quality of the team output and peer feedback on individual performance are merged to inform individual rewards (e.g., grades) (Ohland et al., 2012). Notably, management education research has reviewed and deployed several examples of self and peer feedback approaches to enable a variety of such grading schemes for team projects (Hinojosa, 2022; Rubin, 2006). While many of these approaches have been developed with an eye on student perceptions of fairness and guarding against freeloading, we intend to discuss outcome interdependence approaches that most greatly influence ongoing team collaboration.

The final type of interdependence to be discussed is that of goal interdependence. While teams are often assigned a goal from the boss or instructor, it's well established that assigned goals are only sometimes internalized as self-set goals (Locke & Latham, 1990). Additionally, individuals come to team assignments with varying individual goals which may or may not align

well to the overall goal (Pearsall & Venkataramani, 2015). Hence, goal interdependence equates to the extent to which individual members' goals are positively related to each other; when goal interdependence is high, as each individual progresses in goal-achievement, this boosts the other members' goal achievement as well (Wu et al., 2015). Previous studies show that higher levels of cooperative goal interdependence leads to greater levels of team reflexivity, which is the "extent to which team members collectively reflect and adapt their team's objectives, strategies, and processes" (Tjosvold et al., 2004, p. 542). In our experience, we find that student teams rarely discuss personal or team goals, yet often come to projects with a wide variety of independent goals. For example, in a team with low goal interdependence, one student may be focused on spending as little effort as possible on the project due to other commitments, another may be focused primarily on the grade, and another may come with high learning goals. However, when students discuss and align their goals to their roles and the way the project will function, they can construct more cooperative goals and open the pathway for more effective future communication. We propose that identifying and implementing evidence-based ways to enhance goal interdependence in team projects can enhance the level of behavioral task interdependence, or actual team coordination, throughout the project.

Putting this together, we see many teaching implications for reviewing and highlighting research on the impacts of task, outcome, and goal interdependence on team engagement for the effectiveness of team projects or team assignments in meeting teamwork learning goals in management classrooms. Bridging this extant research on interdependence with the way educators design and implement team projects can enhance the amount of time and effort students put into executing team projects with actual teamwork, which can thereby enhance the overall level of learning that occurs. The presenters for this session have initial ideas and

experience in each of these three areas to share with participants, but even more so hope to start a conversation and resource share that can spark new ways of thinking about team projects that can be applied across a wide variety of management courses and learning contexts.

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Session Description

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We propose this session as a 60-minute roundtable discussion. We intend to structure this session as described in the chart below. Following the session, the presenters will document all information shared and distribute to participants in a format that enables future edits, additions, and continued information sharing.

Timeline	Topic
0-10 minutes	Introduction of proposed project and brief refresher on team interdependence concepts. Presenters will summarize key predictors of each type of interdependence from a review of the teams literature in order to inform roundtable discussions.
10-30 minutes	Facilitated roundtable discussions soliciting from each participant: ● Personal experiences with team projects ● Best practices / lessons learned from personal experiences ● New ideas to try based on the evidence presented in the introduction
30-50 minutes	Participants share with the entire group the top ideas solicited from each table.
50-60 minutes	Open Q&A, Coordination for next steps to continue this conversation and resource share

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