Does team communication represent a one-size-fits-all approach?: A meta-analysis of team communication and performance

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Abstract

Although it is consistently identified as a critical component of team performance, team communication is often conceptualized in a variety of manners. The present meta-analysis addresses this inconsistency by examining the moderating influence of communication characteristics, as well as other salient team and task characteristics, on the relationship between team communication and performance. The findings revealed several fundamental insights. First, communication quality had a significantly stronger relationship with team performance than communication frequency. Second, further distinguishing between different communication types, classifying communication into the eight most commonly measured communication forms (e.g., knowledge sharing, information elaboration), has further value; information elaboration has the strongest relationship with performance while self-report frequency and objective frequency have the weakest relationships. Third, familiar and face-to-face teams exhibited a stronger relationship between communication and performance. These results indicate the necessity of distinguishing between different communication types in both practical and theoretical applications of team science.

1. Introduction

The modern workforce faces numerous challenges associated with recent changes prompted by globalization, advancing technology, and a shifting economy (Ilgen, 1994). To contend with these dynamic conditions, organizations are increasingly opting to utilize teams (Lawler, Mohrman, & Benson, 2001), as such entities are argued to be more suited to contending with complex tasks than individuals and offer organizations a host of advantages (Campbell, 1988; Sundstrom, De Meuse, & Futrell, 1990). Mirroring this trend, research has correspondingly expanded (Mathieu, Hollenbeck, van Knippenberg, & Ilgen, 2017), with empirical work examining factors that contribute to the effectiveness of teams burgeoning (e.g., Hu & Liden, 2011; Wang, Waldman, & Zhang, 2014). A prevalent finding within the teams literature is the necessity of team communication for effective team performance (Marks, Zaccaro, & Mathieu, 2000; Warkentin & Beranek, 1999).

Relatedly, Mesmer-Magnus and colleagues conducted two meta-analyses on information sharing and performance, examining unique information sharing (i.e., the extent to which teams share information that is uniquely held by certain members of the team) and openness of information sharing (i.e., the extent to which teams share information, regardless of the distribution of commonly held information) (Mesmer-Magnus & DeChurch, 2009; Mesmer-Magnus, DeChurch, Jimenez-Rodriguez, Wildman, & Shuffler, 2011); both forms of information sharing were found to significantly, positively relate to performance. However, complicating present understanding about the relationship between team communication and performance, team communication has been defined and evaluated in a variety of manners that do not necessarily align with the construct of information sharing (MacMillan, Entin, & Serfaty, 2004). For example, a distinguishable aspect of high-performing expert teams is their ability to perform well without overtly communicating; that is, information is not necessarily shared, yet team members still exhibit high levels of performance (Burke, Salas, Wilson-Donnelly, & Priest, 2004). In accordance with this difficulty, Stout, Salas, and Carson (1994) suggested that the relationship between team communication and performance has been inconsistent in previous studies because of the varying ways in which communication has been evaluated.

Illustrating this trend, knowledge sharing (e.g., “old members give
advice to new members”; Henley, Janhonen, & Johanson, 2013, p. 623), information elaboration (e.g., “the group members contributed a lot of information during the group task”; Homan et al., 2008, p. 1212), and openness of communication (“team members have an open and honest communication during the meetings”; Puck, Rygl, & Kittler, 2006, pp. 231–232) all represent different types of team communication measures. Although it is likely that there is some overlap between these measures, it is unclear whether they represent distinct facets of communication and relate to performance in unique manners. Moreover, despite clear agreement on the importance of team communication, the degree to which communication is required for achieving high levels of performance under different conditions (e.g., varying task types) is relatively unexplored on a systematic level. This is in spite of the evidence suggesting communication may be more or less important, given differing circumstances (e.g., Bowers, Jentsch, Salas, & Braun, 1998).

Consequently, the aim of the present meta-analysis is to advance present understanding regarding the extent to which team communication is related to team performance under varying conditions. To accomplish this aim, and expand upon the work of Mesmer-Magnus and DeChurch (2009), Mesmer-Magnus et al. (2011), we incorporate additional types of communication, beyond communication sharing, into our meta-analytic effect size estimating the relationship between team communication and performance. This provides insight into the overarching strength of this relationship which, to our knowledge, has yet to be meta-analytically assessed. We further contribute to the literature by examining the influence of theoretically relevant moderators on this relationship. In particular, we explore three broad categories that consistently emerge as influential to teams across studies: team characteristics, task characteristics, and aspects of team communication operationalization.

The team characteristics we examine include team familiarity, virtuality, and leadership structure. Team familiarity has been found to enhance a variety of team processes and team performance (e.g., Gruenfeld, Mannix, Williams, & Neale, 1996; Harrison, Mohammed, McGrath, Florey, & Vanderstoep, 2003; Littlepage, Robison, & Reddington, 1997), highlighting the importance of examining whether this positive influence generalizes to the relationship between overall communication and performance. The influence of virtuality has similarly been emphasized within the literature as critical to shaping team functioning but especially so in the case of communication (e.g., Lu, Waterman-Manheim, Chudoba, & Wynn, 2006). Although the effect of virtuality has been meta-analytically examined within the context of information sharing (Mesmer-Magnus et al., 2011), it has yet to be systematically assessed in regard to overall communication despite the numerous theoretical arguments emphasizing its potentially negative impact (e.g., Gibson & Cohen, 2003). Finally, leadership structure represents another salient team characteristic that may differ across teams in organizations (e.g., hierarchical, shared; Pearce & Manz, 2005). Understanding whether the necessity of communication to effective performance changes as a function of leadership represents a substantial contribution to the literature; although leadership is often emphasized as influencing teamwork (Zaccaro, Rittman, & Marks, 2001), to our knowledge it has yet to be meta-analytically tested.

Task characteristics represent another condition argued by researchers to have a strong effect on team functioning (Saavedra, Earley, & Van Dyne, 1993; Shea & Guzzo, 1987; Sundstrom et al., 1990). Communication needs, and the influence of communication on performance, may be altered dramatically by the nature of the task type and interdependence (i.e., the level of interaction required among team members by the task; Shea & Guzzo, 1987). Yet, there are few studies examining how the relationship between communication and performance may differ due to the influence of task features and, of these studies, many center primarily on virtual teams (e.g., Rico & Cohen, 2005). There is not enough evidence to conclusively determine whether this relationship is significantly changed by task characteristics. Synthesizing this literature, and examining the moderating influence of task interdependence and task type across studies, represents another substantial contribution of the present meta-analysis.

Finally, we suggest that the largest contribution of our effort stems from our examination of the influence of different features of team communication. We examine theoretical arguments set forth in the literature, including the distinction between task-oriented and relational communication content (Keyton, 1997) and the distinction between communication quality and frequency (Marks et al., 2000). Although these theoretical frameworks offer strong rationale for distinguishing between these different facets of communication, these aspects of communication have yet to be empirically compared to determine if they have unique relationships with performance. Addressing this gap will provide empirical support for these theoretical frameworks. Finally, we investigate the distinct relationships with performance associated with additional communication types, beyond unique and open information sharing, to clarify whether they significantly differ. Although a variety of team communication measures have been utilized, whether they relate to performance in different ways has yet to be acknowledged or tested. By addressing these gaps in this science, we expand our understanding of the relationship between team communication and performance and incrementally contribute to related theory.

2. Team communication and team performance

Team communication can be defined as an exchange of information, occurring through both verbal and nonverbal (e.g., email) channels, between two or more team members (Adams, 2007; Mesmer-Magnus & DeChurch, 2009). Measures of team communication generally capture the degree to which team members feel the information received from team members was clear (e.g., Hoch & Kozlowski, 2014), the frequency with which they interacted with other team members (e.g., Bunderson & Sutcliffe, 2003), the extent to which knowledge was shared (e.g., Kessel, Kratzer, & Schultz, 2012), or some combination of these components. Team communication is conceptualized as integral to a majority of team processes or the interdependent team behaviors that lead to outcomes such as performance (Marks, Mathieu, & Zaccaro, 2001). Specifically, communication is posited to enhance team performance via facilitating and improving critical team processes, such as coordination and strategy formulation (Marks et al., 2001). For instance, it serves the primary purpose of clarifying misunderstandings among team members (Fletcher & Major, 2006), but also functions as a conduit through which team members can distribute crucial information to other team members.

Further, communication enables team members to receive information pertaining to the environment and situational factors which could impact the nature and demands of the team tasks (MacMillan et al., 2004). In addition to this, researchers posit that communication assists in the development of team emergent states (e.g., team cognition; Salas, Cannon-Bowers, & Johnston, 1997), which are, in turn, posited to foster high performance (e.g., He, Butler, & King, 2007). Communication is also argued to directly relate to team performance because it distributes critical, task-relevant information to team members (Salas, Sims, & Burke, 2005). Indeed, one common thread across studies of team effectiveness is the ability of high performing teams, relative to low performing teams, to effectively communicate (Entin, Serfaty, & Deckert, 1994). Illustrating the importance of this process, communication deficiencies within teams have been linked to poor, even catastrophic, outcomes in both routine and high-stakes environments (Foussée, 1984; Lingard et al., 2004; Moorman, 2007; Saso & Reason, 1999; Sutcliffe, Lewton, & Rosenthal, 2004).

For example, analyses of aviation accidents have indicated that pilot error can significantly contribute to the present meta-analysis. Particularly, we explore three broad categories that

Hypothesis 1. Communication is positively related to team performance.
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