

# A Proposed Research Design for Exploring Collective Leadership (CL) within Multi-Team Systems (MTS) Implementing Digital Literacy Initiatives

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## Abstract

The most pressing challenges facing society are increasingly complex, requiring effective collaboration among multiple organizations. An important factor for success are the leadership strategies employed, which shape how well organizations work together to achieve common goals. Prior leadership research focused on the influence of a single organization or individual is giving way to emerging collective approaches where multiple individuals are engaged in the leadership process. The author proposes a mixed methods case study design to examine such processes among three teams of Extension, community stakeholder, and higher education organizations engaged in digital literacy programming initiatives. Proposed methods include a combination of network analysis, interviews, document analysis, and cognitive mapping techniques to examine what forms CL takes, and under what conditions technology enhances or hinders the collective leadership processes across three site locations.

**Keywords:** Collective leadership; mixed methods; multi-team system; community engagement; network analysis

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## 1 Introduction

Current challenges facing society and our communities are “transnational in nature and trans-institutional in solution” (Glenn, Gordon, & Florescu, 2014, p. 17). Whether global or local, these grand challenges require collaborative action from organizations spanning a variety of sectors. One example can be seen in the challenge of how to develop essential digital literacy skills among youth, in order to prepare them for positive economic and social impact in a world increasingly dependent upon technological capabilities. To address such a challenge would require collective action among education, government, and civic organizations. An important consideration of such initiatives is how leadership is enacted within these collective organization structures, which exist amid dynamic and complex environments. Considering leadership from the focus of a single individual, however, obscures essential components of how leadership is shared among members of such partnerships. Therefore, the focus for this proposal is to understand the factors enhancing collective leadership in the contexts of multi-sector organizational collaborations.

While participative forms have been considered in the modern study of leadership, primary focus has typically been on hierarchical leaders within single organizations. Increased complexity has precipitated interest in expanding exploration on leadership approaches reflecting multi-directional influence processes, as well as acknowledging both formal and informal leaders (Avolio, Walumbwa & Weber, 2009). The emergence of such collective leadership approaches are salient given the complexity of modern challenges, the growth of flatter, more team-based work structures, technological advancements, and other concerns salient to all manner of organizations (Avolio et al, 2009; Dinh, Lord, Gardner, Meuser, Liden, & Hu, 2014; Koccolowski, 2010). Due to these changes, the demands placed on individual leaders make it more likely that essential roles are shared among individuals. While work to categorize and examine collective leadership is emerging, research continues to lag behind interest (Yammarino, Salas, Serban, Shirreffs & Shuffler, 2012). Therefore, an important gap is in understanding how such approaches emerge and are sustained within collectives of organizations, as the underlying organizational structure is an important defining characteristic of leadership (Huxham & Vangen, 2000; Bolden, 2011).

The effectiveness of collective leadership is not the result of a one-size-fits all implementation. Rather, organizations must learn to adapt leadership strategies and processes to fit the organizational structure, which in turn shapes the strategies and processes available to use. In the case of complex challenges requiring collaboration, a collective leadership strategy has to be crafted to fit within the mix of organizations present, and the structures through which these organizations coordinate, communicate and collaborate. As research around collective leadership continues, it is important to address how

organizational structure and contextual dynamics may influence the emergence and enactment of collective leadership.

This study aims to address this need by exploring collective leadership processes within a collection of teams implementing digital literacy programming. The conceptual framework is based upon collective leadership (CL) and multi-team systems (MTS). The model for CL is the integrative, information and expertise focused model proposed by Friedrich and colleagues (2009), where collective leadership is defined as, “a process in which a leader, or group of leaders, distributes the leadership role, or components of the leadership role, to others based on the skills and expertise required in the situation” (Friedrich, Vessey, Schuelke, Ruark & Mumford, 2009, p. 933). The model is comprised of four key elements: collective leadership constructs, baseline leadership and team processes, outcomes, and the embedding context and setting. Of key interest to the proposed study are those constructs associated with collective leadership (Table 1), which interact with each other as well as the other three elements of the model.

| Construct                   | Description  |
|-----------------------------|--|
| Leader/Team Exchange        | Highlight importance of exchange relationships among leaders and members; includes exchange behaviors and exchange of roles                                |
| Communication               | Central construct for collective leadership, relating to how information is shared among team members; shapes performance parameters and affective climate |
| Leader Network              | Reflects patterns of interpersonal relationships the leader is embedded within   |
| Team Performance Parameters | Identifies team dimensions which may impact team performance and team outcomes, including interpersonal and problem-solving capabilities                   |
| Team Affective Climate      | Includes group norms, emotional regulation capabilities and general affective climate of the team  |
| Team Network                | Reflects patterns of interpersonal connections among and between fellow team members and the leader  |
| Problem Setting             | Environmental setting for group work which may influence collective leadership processes   |
| Leader Skills               | Acknowledges base-line constructs which allow collective leadership to emerge; includes skills of formal leader  |

Table 1. Collective Leadership constructs, adapted from Friedrich et al., 2009

The study is also informed by work on multi-team systems (MTS). MTSs are team-based collectives working towards a common superordinate goals who are linked by interdependencies (Mathieu, Marks & Zaccaro, 2001). The individual teams comprising an MTS, called component teams, may reside within a single organization or may cross organizational boundaries. Common examples include those of emergency response units comprised of firefighters, police, and medical personnel, or surgical teams comprised of nurses, technicians, doctors, and surgeons. MTSs can also include alliances or planning groups; however, not all collectives are necessarily MTSs. To better clarify MTS for other collectives, Zaccaro and colleagues (2012) propose a typology along three key attributes – compositional, linkage, and developmental – in order to understand differences among MTS forms and function (Table 2).

| MTS Dimension            | Description  |
|--------------------------|--|
| Compositional Attributes | Help describe the demographic features of both the MTS as well as individual characteristics of the component teams. Includes dimensions such as: size, number, diversity (functional, cultural, organizational), geographical dispersion, among others. |
| Linkage Attributes       | Help describe the nature of interdependencies among component teams. Includes dimensions such as: hierarchical arrangements, power distribution, and communication structure.  |
| Developmental Attributes | Help describe the initial formation and subsequent dynamics as they progress. Includes dimensions such as: genesis, tenure, stage, and composition.  |

Table 2. Attributes of Multi-Team Systems (MTS), adapted from Zaccaro & DeChurch, 2012

## 2 Proposed Methodology

The core questions motivating my research include:

RQ1: *Under what conditions does CL emerge within MTS over time?*

RQ2: *What forms of CL are more effective at shaping the performance and function within the MTS?*

RQ3: *How does the form of CL within an MTS influence the MTS outcomes?*

RQ4: *Under what conditions would MTS members accept and use technology to enhance CL?*

To respond to these questions, I will employ case study methodology using an integrated, mixed methods approach. While I use the existing CL theoretical framework, I also will explore my data to improve the theory describing the relationship between CL and MTS using thematic analysis (Braun & Clarke, 2006). My case is a MTS comprised of the Extension service, community stakeholder organizations, and higher education whose superordinate goal is to implement digital literacy programming across three site locations (Figure 1).

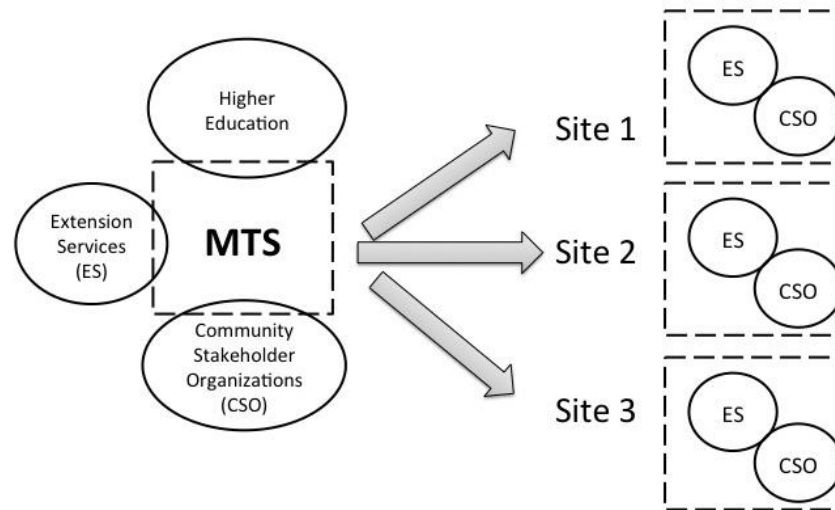


Figure 1. Proposed case study sites

Extension personnel are regional and have responsibilities for collaborating with communities within their districts to establish different events and programs. Communication is essential for coordinating tasks in this distributed environment, and often after the task is completed the group will disband. The MTS under study is an example of such collaboration. The three site locations reflect a nested structure that will allow for comparative analysis across representative samples at each site in order to identify factors of import for CL.

Mixed methods are the combination of elements of qualitative and quantitative research approaches for increasing breadth and depth of understanding and corroboration (Johnson, Onwuegbuxie & Turner, 2007). Moreover, the important aspect of this perspective is not “*what* type of data are used or *when* they are used but *how* various types of data are integrated and for *what purpose*” (Myers, 2013, p. 299). This choice responds to calls for both qualitative and quantitative approaches to account for issues of emergence and dynamism (Tracy & Standerfer, 2003; Aiken & Hanges, 2012).

My choice of mixed methods includes network analysis, interviews, document analysis and cognitive mapping techniques. Network analysis (NA) will be used to examine the underlying structural patterning of CL within MTS members following prior research (Pastor, Meindl, & Mayo, 2002; Balkundi & Kilduff, 2005; Mehra et al, 2006; Friedrich et al, 2009; Contractor et al, 2012; Carter, DeChurch, Braun & Contractor, 2015). However, NA is limited in the ability to study group processes, particularly exploring *how* or *why* such patterns exist (Tracy & Standerfer, 2003). Thus, NA is intentionally combined with additional sources to provide important triangulation for the network findings, as well as uncover important dimensions of team processes to help inform NA constructs. Given the focus on information sharing and communication within the CL framework, it is important to employ methods that can help capture shared concepts among members of the network. According to Stasser (1999) the focus group is a venue to help identify core, shared information. Cognitive mapping methods allow investigation of cognitive relationships and have been successfully employed to uncover alignment of shared mental models within organizations (Werner & Schoepfle, 1987; Jehn, 1997). Finally, document analysis will be conducted with key documents such as organizational charts, project reports, event marketing materials, etc. Document

analysis is often used in combination with other methods and has been shown to have particular application to case studies (Bowen, 2009).

### 3 Conclusion

As stated above, this proposal addresses a gap in the emerging literature to better understand the relationship between CL process and MTSs. This work will contribute theoretical insight to scholars studying collective processes in cross-boundary teams, and help contribute to our understanding of interactions within collectives and the process of collaboration when leadership is shared among individuals. Currently, there is limited empirical research on CL approaches. While distributed leadership has gained some footing in the areas of healthcare and education, there is a need to further clarify how this framework works in other settings and from other approaches. Current MTS work focuses primarily on team leadership and primarily on strategic alliances, emergency response teams, or simulated lab experiments (Zaccaro et al, 2012). While important, team leadership may not include consideration of the influence of non-formal roles, or multi-person interactions. Furthermore, extending MTS research to different settings will help develop its theoretical application. Finally, my research contributes to practical applications of helping individuals understand how to enhance CL within cross-boundary collaborations and helps identify the ways in which technology may help or hinder that process. The resulting work would aim to identify strategies that individuals could use to enhance their collaborative leadership processes in similar cross-boundary spanning teams.

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