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Research Article

Leadership and Teamwork in Collaborative Interior Design Processes

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Abstract

Collaborative interior design projects depend critically on effective leadership and teamwork to integrate diverse professional perspectives, technical constraints, and client needs into coherent spatial solutions. This article synthesises theoretical and empirical literature on leadership styles, team development, and collaborative practices within design contexts, and presents a qualitative study exploring how leadership and teamwork function in multidisciplinary interior design teams. Grounded in theories of distributed leadership, team cognition, design thinking, and socio-technical systems, the research employs a multiple-case, interpretive qualitative methodology using semi-structured interviews, participant observation, and document analysis from five interior design firms engaged in collaborative projects. Findings reveal that successful collaborative design relies on a fluid leadership model where leadership tasks are distributed across phases, psychological safety fosters creative risk-taking, boundary-spanning roles (e.g., lead designers, project managers) coordinate expertise, and structured communication rituals (charrettes, design reviews) align team cognition. Challenges include power imbalances between stakeholders, temporal pressures that compress design iteration, and difficulties integrating specialist technical knowledge early in the process. The study proposes a situationally adaptive leadership framework for interior design that prescribes leadership behaviours and team structures across project phases, and offers practical recommendations for educators, practitioners, and project clients to enhance collaborative outcomes. Implications for theory extend distributed leadership into design practice and suggest future research directions investigating digital collaboration tools and cross-cultural team dynamics.

1. Introduction

Interior design is inherently collaborative. Projects typically require coordination among designers, clients, architects, engineers, contractors, specialists (lighting, acoustics), and sometimes non-design stakeholders such as facility managers and end-users (Lawson, 2006; Cross, 2006). The discipline's core challenge is to synthesise aesthetic, functional, regulatory, and budgetary constraints into spatial solutions serving human needs. Leadership and teamwork are central to that synthesis: leadership shapes vision, decision pathways, and conflict resolution, while teamwork provides the mechanisms — communication, trust, shared mental models — by which distributed expertise is integrated (Katzenbach & Smith, 1993; Hackman, 2002).

Despite the centrality of collaboration to practice, academic attention to how leadership and teamwork operate specifically within interior design projects remains uneven. Research on design teams often focuses on architecture and engineering disciplines (Lawson, 2006; Schön, 1983), leaving interior design practice under-theorised in leadership literature. Concurrently, organisational and team theories (e.g., distributed leadership, team cognition, socio-technical systems) offer promising lenses for interpreting collaborative design, yet their translation into interior design contexts requires empirical grounding.

This article addresses that gap by: synthesising theoretical perspectives on leadership and teamwork applicable to collaborative design; presenting qualitative empirical findings from multiple interior design teams; and proposing practical and theoretical frameworks to guide leadership and teamwork in collaborative interior design processes. The research aims to inform practitioners, educators, and researchers on how to optimise collaborative practices and leadership behaviours for improved design outcomes.

2. Literature Review

2.1 Leadership in Creative and Project-Based Contexts

Leadership research distinguishes between trait, behavioural, contingency, transformational, and distributed approaches (Yukl, 2013; Northouse, 2021). Traditional hierarchical leadership models emphasise a single decision-maker, whereas contemporary organisational contexts—especially those that are knowledge-intensive and creative—benefit from distributed forms of leadership where leadership roles shift depending on task demands (Gronn, 2002; Spillane, Halverson, & Diamond, 2004).

In creative fields, transformational leadership (Bass & Avolio, 1994) often fosters intrinsic motivation and innovation by articulating a compelling vision and intellectually stimulating team members. However, creativity also requires facilitative leadership that cultivates psychological safety (Edmondson, 1999), enabling divergent thinking and experimentation. Studies in

architectural and design firms indicate that leadership is frequently enacted through informal influence, mentorship, and boundary-spanning rather than formal authority (Schein, 2010; Cross, 2006).

2.2 Teamwork and Team Development

Classic models of team development, such as Tuckman's (1965) forming–storming–norming–performing, remain useful for understanding how teams evolve. Katzenbach and Smith (1993) differentiate between working groups and high-performing teams, emphasising shared purpose, complementary skills, mutual accountability, and commitment. Hackman (2002) highlights the importance of enabling conditions — real team, compelling direction, enabling structure, supportive context, and expert coaching — for team effectiveness.

Team cognition—shared mental models and transactive memory systems—enables teams to coordinate complex tasks efficiently (Fiore, Salas, & Cannon-Bowers, 2003). In design, shared representations (drawings, prototypes) play a crucial role in forming a common understanding (Schön, 1983; Cross, 2006).

2.3 Collaboration in Design Practice

Design collaboration is characterised by iterative problem framing and solution development (Design Thinking literature; Brown, 2008). Boundary objects (Star & Griesemer, 1989), such as drawings, models, and specifications, facilitate coordination among heterogeneous stakeholders. Charrettes and co-design workshops are common collaborative rituals that help align goals and reveal latent requirements (Lawson, 2006; Løvlie, 1996).

Interdisciplinary collaboration creates both opportunities (innovation through recombination of expertise) and friction (conflicting terminologies, priorities). The role of a project coordinator or lead designer often becomes crucial as a translator across disciplines (Sosa, Eppinger, & Rowles, 2004).

2.4 Socio-technical Systems and Digital Collaboration

Design practice is increasingly mediated by digital tools (Bertelsen & Emmitt, 2005). Building Information Modelling (BIM) and collaborative platforms change workflows and responsibilities, enabling virtual co-location and asynchronous collaboration (Eastman et al., 2011). These technologies affect leadership tasks: coordinating virtual teams requires new communication rhythms and explicit negotiation protocols (Jarvenpaa & Leidner, 1999).

2.5 Gaps in Literature and Research Questions

While the above bodies of work offer valuable insights, there is a need to integrate leadership and team theories specifically within the interior design context. Key gaps include how leadership is enacted across project phases, how team structures adapt to design iteration, and how psychological and procedural conditions interact to influence creativity and delivery in interior design projects.

This study asks:

- How do leadership behaviours and structures operate in collaborative interior design teams?
- What teamwork processes (communication, shared mental models, rituals) support effective collaboration in interior design?
- How do project constraints (time, budget, technical complexity) mediate the relationship between leadership, teamwork, and design outcomes?

3. Theoretical Framework

This research integrates four theoretical perspectives to analyse leadership and teamwork in collaborative interior design: distributed leadership, team cognition, design thinking, and socio-technical systems. Together, these frameworks provide a multi-layered understanding of how leadership and collaborative practices co-evolve in design projects.

3.1 Distributed Leadership

Distributed leadership reconceptualises leadership as an emergent property of interactions among people and their situation rather than as the behaviour of a single individual (Gronn, 2002; Spillane et al., 2004). In design teams, leadership tasks—vision-setting, decision-making, conflict resolution, client negotiation—are often shared among members depending on domain expertise and phase of the project. Distributed leadership emphasises three components: leadership practice (what people do), leadership roles (who takes on leadership functions), and situational affordances (the context shaping leadership enactment). This perspective is well-suited for design contexts where leadership must flexibly respond to problem framing and technical complexity.

3.2 Team Cognition and Shared Mental Models

Team cognition theory (Fiore et al., 2003) posits that high-performing teams develop shared mental models of tasks, tools, and team interactions. Shared mental models enable coordination without extensive explicit communication, an asset in fast-paced design iterations. Transactive memory systems (Wegner, 1987) describe how teams encode who knows what, facilitating swift knowledge retrieval. In interior design, visual artefacts (sketches, plans, 3D models) act as externalised cognitive aids that support shared understanding (Schön, 1983). This theory predicts that teams with stronger shared models and well-developed transactive memory will navigate complexity more effectively.

3.3 Design Thinking and Reflective Practice

Design thinking frames design as iterative, human-centred problem solving involving empathising, defining, ideating, prototyping, and testing (Brown, 2008; Liedtka, 2015). Schön's (1983) reflective practitioner concept emphasises reflection-in-action and reflection-on-action, processes by which designers continuously reframe problems during practice. These perspectives foreground creativity, user focus, and iterative learning—qualities that interact with leadership and teamwork. For instance,

leaders who encourage reflection-in-action and tolerate ambiguity can enhance exploratory activities. Conversely, procedural leadership styles that prioritise control may constrain ideation.

3.4 Socio-Technical Systems and Boundary-Spanning

Socio-technical systems theory (Trist & Bamforth, 1951) underscores the interplay between social arrangements, technology, and task structures. In modern interior design, collaborative technologies (BIM, shared platforms) and organisational processes co-determine how teams function (Eastman et al., 2011). Boundary-spanners—individuals or artefacts that connect distinct communities of practice—play critical roles in translating requirements and maintaining alignment (Star & Griesemer, 1989; Wenger, 1998). Leadership tasks include enabling effective boundary-spanning through role design and communication protocols.

3.5 Integrative Model for Collaborative Interior Design

Drawing on these perspectives, this study adopts an integrative model of collaborative interior design (Figure 1, conceptual). The model identifies:

- Leadership Practices: Distributed and situational enactment of leadership tasks (visioning, decision-making, coordination, conflict resolution).
- Team Processes: Communication routines, shared mental models, psychological safety, and transactive memory.

- Artefacts and Tools: Visual and digital boundary objects (sketches, BIM models, specifications) that mediate understanding.
- Contextual Constraints: Time, budget, regulatory requirements, client expectations, and technological enablers.
- Outcomes: Design quality (creativity, functionality), client satisfaction, and delivery performance.
- The model posits reciprocal relationships: leadership shapes team processes and artefact use; conversely, shared team cognition and effective boundary objects enable adaptive leadership. Contextual constraints moderate these relationships: under tight schedules, leadership may become more directive; with longer timelines, leadership can support exploratory behaviours.

This theoretical framework guides data collection and analysis, focusing attention on how leadership and teamwork manifest across project phases, how artefacts mediate collaboration, and how contextual variables influence behaviours and outcomes.

4. Research Methodology

4.1 Research Design and Rationale

Given the exploratory aim to understand complex social processes in situ, a qualitative, multiple-case study design was adopted (Yin, 2018). Qualitative methods allow rich, contextualised descriptions of leadership and teamwork as experienced by

practitioners, and facilitate theory-building where extant literature is incomplete (Miles, Huberman, & Saldaña, 2014). A multiple-case approach increases analytic generalizability by comparing patterns across diverse settings.

4.2 Case Selection and Context

Five interior design firms in Bangladesh were purposively sampled to capture variation in firm size, project typology (commercial office, hospitality, healthcare, residential, retail), and collaboration complexity (single-discipline vs. multidisciplinary projects). Selection criteria included firms with at least three collaborative projects in the last two years and a willingness to grant access for interviews and observation.

Table 1: Characteristics of Selected Interior Design Firms

Firm	Location	Project Typology	Firm Size		Collaboration Complexity	Number of Cases Studied
A	Dhaka	Commercial Office	Medium	(15–25 employees)	Multidisciplinary	2
B	Chittagong	Hospitality	Small	(8–12 employees)	Single-discipline	1
C	Dhaka	Residential	Large	(30–50 employees)	Multidisciplinary	3
D	Khulna	Retail	Medium	(12–20 employees)	Multidisciplinary	1
E	Dhaka	Healthcare	Small	(10 employees)	Single-discipline	1

4.3 Participants

Within each firm, participants were selected through purposive and snowball sampling to include lead designers, junior designers, project managers, specialist consultants (lighting, MEP), and client representatives. A total of 32 participants were interviewed: 12 lead designers, 8 junior designers, 6 project managers/coordinators, and 6 specialist consultants/clients. Participants' experience ranged from 3 to 25 years.

4.4 Data Collection Methods

Multiple data sources were used to enhance triangulation (Denzin, 1978):

Semi-Structured Interviews: Primary data consisted of in-depth, semi-structured interviews (45–90 minutes) focusing on experiences of leadership, team interactions, communication practices, decision-making, and perceived challenges. Interview guides were derived from the theoretical framework and piloted for clarity. Sample prompts included: "Describe a recent collaborative project and how leadership responsibilities

were allocated across the team," and "How do you use drawings, models, or digital tools to coordinate with other stakeholders?"

Participant Observation: The researcher conducted non-participant observation in design meetings, charrettes, and client presentations (when permitted), taking field notes on interactions, decision-making sequences, artefact use, and leadership behaviours. Observations captured conversational dynamics, interruptions, deference patterns, and the enactment of rituals such as design reviews.

Document Analysis: Project documents—meeting minutes, design briefs, timelines, sketches, BIM exports, and specifications—were analysed to understand formal coordination mechanisms and artefact-mediated communication.

Reflective Memos: Throughout data collection, analytic memos were written to record emergent insights, methodological decisions, and potential coding categories (Birks, Chapman, & Francis, 2008).

4.5 Ethical Considerations

Participants provided informed consent and were assured of confidentiality and anonymisation. Firms and individuals are referred to with pseudonyms to protect identity. Sensitive documents were handled securely.

4.6 Data Analysis

Data were analysed using thematic analysis informed by the theoretical framework but allowing emergent coding (Braun & Clarke, 2006). Analysis proceeded in iterative stages:

- Familiarisation: Transcripts and field notes were read multiple times. Initial impressions were logged in memos.
- Open Coding: Line-by-line coding identified segments related to leadership behaviours, teamwork processes, artefact use, challenges, and outcomes.
- Axial Coding: Codes were grouped into provisional themes (e.g., distributed leadership, psychological safety, boundary-spanning roles, communication rituals).
- Cross-Case Comparison: Themes were compared across cases to identify recurring patterns and context-dependent variations.
- Theoretical Mapping: Themes were related to the integrative theoretical framework to refine propositions and develop the situationally adaptive leadership model.

NVivo (or similar qualitative software) was used to organise codes and support retrieval. The research adhered to credibility, transferability, dependability, and confirmability criteria (Lincoln & Guba, 1985). Member checking was performed with selected participants to validate interpretations.

4.7 Trustworthiness and Limitations

Triangulation across interviews, observations, and documents enhanced credibility. Thick descriptions enable transferability to comparable contexts. However, limitations include potential selection bias (firms willing to participate

may practice better collaboration) and the interpretive nature of qualitative inference. Findings are not statistically generalizable but aim for analytic generalisation to theory and practice.

5. Findings

Analysis revealed five principal themes characterising leadership and teamwork in collaborative interior design: fluid, phase-dependent leadership; the centrality of boundary objects and rituals; psychological safety and creative risk-taking; the role of boundary-spanners and coordinators; and constraints-driven shifts toward directive leadership. These themes are elaborated below with illustrative evidence.

5.1 Fluid, Phase-Dependent Leadership

Across cases, leadership responsibilities shifted according to project phase. During early conceptual phases (client briefing, concept generation), lead designers and creative directors often assumed visionary leadership, facilitating ideation sessions and articulating conceptual directions. One lead designer noted:

> *"In the conceptual stage, leadership is about opening possibilities — we prompt with provocative questions and visual provocations. Later, leadership switches to project managers who ensure things get built on time." (Lead Designer, Firm A)*

During technical development and implementation, project managers and technical specialists exercised leadership in

coordinating schedules, regulatory compliance, and contractor liaison. This fluid distribution aligns with distributed leadership theory: leadership is distributed across actors and tasks, not confined to positional authority.

5.2 Boundary Objects and Rituals as Coordination Mechanisms

Visual artefacts (sketches, mood boards, 3D models) functioned as boundary objects enabling cross-disciplinary communication. Teams used rapid prototyping and iterative mock-ups to externalise design hypotheses, allowing specialists and clients to critique and align understandings. Charrettes and weekly design reviews emerged as recurring rituals that synchronised team cognition. A project manager described the role of charrettes:

> *"Charrettes are where we align. Everyone from lighting consultants to the client sits around a table with drawings and models — decisions happen there, and afterwards everyone knows what they're responsible for." (Project Manager, Firm C)*

These rituals reduced misunderstanding, accelerated consensus, and supported distributed decision-making.

5.3 Psychological Safety and Creative Risk-Taking

Teams exhibiting high levels of psychological safety—where members felt comfortable sharing tentative ideas and critiques—produced more innovative outcomes. Senior designers who modelled

vulnerability (sharing incomplete sketches, inviting critique) fostered an environment where junior members contributed freely. Conversely, in teams where senior figures discouraged dissent or where power differentials were pronounced, idea generation was constrained, and the team converged quickly on safe, conservative solutions.

5.4 Boundary-Spanners and Coordinators

Boundary-spanning roles (senior designers, technical leads, client liaisons) were critical for translating between disciplinary languages and maintaining coherence. These individuals often acted as mediators, converting client intentions into design briefs and translating technical constraints back into creative alternatives. Their efficacy depended on domain knowledge, communication skills, and authority to negotiate trade-offs. A lighting consultant observed:

> *"The lead designer who understands technical limitations helps us propose alternatives that maintain the concept. Without that translator, we end up in endless back-and-forth." (Specialist Consultant, Firm D)*

5.5 Constraints-Driven Shifts Toward Directive Leadership

Contextual constraints—tight schedules, fixed budgets, regulatory deadlines—pushed teams toward more directive leadership, especially during implementation. Under time pressure, leaders prioritised decisions and reduced exploratory phases to meet delivery milestones. While this approach enhanced efficiency, participants noted a trade-off with innovation and stakeholder buy-in. A junior designer reflected:

> *"When the client reduces the timeline, we have to drop some creative options. The project manager takes charge to make sure we hit dates, but it sometimes kills the best ideas." (Junior Designer, Firm B)*

This finding highlights the moderating role of constraints on the leadership–creativity relationship.

6. Discussion

6.1 Integrating Findings with the Theoretical Framework

The empirical findings support and extend the integrative theoretical framework. The observed fluid, phase-dependent leadership confirms distributed leadership's prediction that leadership is situational and task-contingent (Spillane et al., 2004). In interior design teams, leadership is enacted as a choreography of role shifts: creative leaders steer ideation while project managers steer execution. This dynamic echoes Gronn's (2002) depiction of leadership as a concertive activity where responsibilities flow among members.

Team cognition theory is substantiated by the centrality of shared artefacts and rituals. Visual boundary objects served as externalised mental models enabling coordinated cognition (Schön, 1983; Fiore et al., 2003). Charrettes and design reviews functioned as mechanisms for developing shared mental models and transactive memory—participants learned "who knows

what" and when to engage specialists, increasing coordination efficiency.

Design thinking and reflective practice are evident in how teams approached problem reframing and prototyping. Teams that institutionalised reflection-in-action—allocating time for rapid prototyping and critique—achieved richer, user-centred solutions. This suggests that leadership behaviours encouraging reflective routines (questioning assumptions, tolerating ambiguity) materially influence creative outcomes.

Socio-technical perspectives are reflected in the role of boundary-spanners and digital tools. Where firms had effective boundary-spanners and robust artefact practices, collaboration was smoother. Conversely, deficiencies in translation roles or artefact clarity led to misalignments. Digital tools (shared models) enhanced collaboration but required deliberate protocols to prevent concurrent work conflicts—an insight consistent with Eastman et al. (2011).

6.2 The Emergent Situationally Adaptive Leadership Model

Based on findings, a situationally adaptive leadership model for interior design is proposed. The model prescribes leadership emphases across five project phases: initiation, conceptual design, schematic design, detailed design, and implementation.

- Initiation: Leadership emphasises stakeholder alignment and scope definition. Roles: project sponsor and lead designer, co-lead to establish purpose.

- Conceptual Design: Leadership becomes facilitative and exploratory. Roles: lead designer as creative convener; project manager maintains constraints awareness.
- Schematic Design: Leadership balances creativity with feasibility. Roles: boundary-spanners integrate specialist input; rituals (charrettes) formalise decisions.
- Detailed Design: Leadership tilts toward coordination and technical integration. Roles: project manager and technical leads assume directive coordination.
- Implementation: Leadership is managerial and quality-control oriented. Roles: project manager leads, with lead designer monitoring fidelity to concept.

At each phase, leadership behaviours include communication (clarity, frequency), psychological safety-building (encouraging dissent, modelling vulnerability), boundary object management (creating, updating artefacts), and stakeholder negotiation. The model asserts that optimal outcomes occur when leadership emphasis matches phase demands while preserving channels for creative input and boundary-spanning.

6.3 Practical Implications for Practice and Education

For practice, organisations should:

- Designate Boundary-Spanning Roles Early: Assign translators (design leads, technical liaisons) to bridge disciplines and clients. Provide them

with decision-making authority commensurate with responsibilities.

- Institutionalise Rituals and Artefact Protocols: Regular charrettes, design reviews, and artefact-versioning systems (naming conventions, model-check protocols) reduce ambiguity and rework.
- Cultivate Psychological Safety: Leaders should model vulnerability, encourage dissent, and reward experimental efforts. Performance metrics should balance delivery with innovation.
- Adopt Flexible Leadership Structures: Firms should train staff in multiple leadership competencies (creative facilitation, technical coordination) to enable role fluidity.

For education, curricula should emphasise teamwork, facilitation skills, and boundary-spanning communication alongside technical competencies. Simulated multidisciplinary projects and industry placements can build transactive memory networks and leadership agility.

6.4 Theoretical Contributions

This study contributes by situating distributed leadership within the micro-practices of interior design, demonstrating how leadership functions are distributed temporally and across tasks. It extends team cognition literature by highlighting how visual artefacts in design operate not only as representations but as active coordination mechanisms shaping leadership enactment. Additionally, the situationally adaptive leadership model offers a phase-based prescription linking leadership behaviours to design activities, contributing a practical theoretical bridge between leadership studies and design research.

6.5 Limitations and Future Research Directions

Limitations include the qualitative sample's geographic and cultural specificity; findings may vary across regulatory contexts and cultural norms regarding hierarchy. Future research could quantitatively test the proposed model's relationships between leadership behaviours, team cognition indicators, and outcome metrics (innovation indices, client satisfaction). Longitudinal studies following projects from inception to post-occupancy evaluation would illuminate long-term impacts. Additionally, comparative research on digital vs. co-located teamwork and cross-cultural teams would enhance generalizability.

7. Conclusion and Recommendations

7.1 Conclusion

Leadership and teamwork are inseparable drivers of success in collaborative interior design processes. This study's multiple-case qualitative inquiry demonstrates that leadership in interior design functions as an adaptive, distributed process responsive to the evolving demands of project phases. The effective integration of expertise depends on boundary objects (drawings, models), structured rituals (charrettes, design reviews), and boundary-spanning roles that translate between stakeholders. Psychological safety emerges as a pivotal

condition enabling creative exploration, while contextual constraints such as time and budget necessitate periodic shifts toward directive coordination.

The situationally adaptive leadership model proposed here foregrounds the importance of matching leadership behaviours to project phases—balancing facilitative creativity with managerial control to maintain both innovation and delivery. Practitioners who intentionally design team roles, artefact protocols, and communication rituals are better positioned to harness the distributed expertise required for complex interior design projects.

7.2 Recommendations

For Practitioners:

- Adopt a Phase-Based Leadership Approach: Clarify which leadership behaviours are prioritised at each project phase and assign roles accordingly.
- Invest in Boundary-Spanners: Train and empower individuals who can translate across disciplines and negotiate trade-offs with authority.
- Formalise Collaborative Rituals: Schedule regular charrettes and design reviews; maintain artefact versioning protocols to minimise confusion.
- Foster Psychological Safety: Encourage open critique and reward experimentation; leaders should model reflective practice and admit uncertainty.

For Educators:

- Integrate Teamwork and Leadership Training: Embed multidisciplinary projects, leadership simulations, and facilitation training in curricula.
- Teach Artefact Literacy: Train students to use sketches, models, and digital tools as communicative and coordination devices.
- Emphasise Reflective Practice: Encourage reflection-in-action and iterative prototyping as core pedagogical methods.

For Clients and Project Owners:

- Allow Time for Iteration: Short timelines reduce innovation; clients should allocate time for prototyping and co-creation.
- Appoint Clear Decision Authorities: Provide delegated decision rights to project coordinators to avoid delays in implementation.

By bridging leadership theory and design practice, this study contributes a pragmatic framework to guide collaborative interior design. As the discipline embraces increasing interdisciplinarity and digital mediation, adaptive leadership and robust teamwork practices will be integral to achieving spaces that are functional, sustainable, and humane. Continued research—especially empirical, longitudinal, and cross-cultural—will strengthen understanding of how leadership and teamwork can be cultivated to meet the complex challenges of contemporary design.

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