

Enabling workplace learning in complex projects: how leaders foreground inherent tensions to trigger collective sensemaking

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Abstract

Purpose – This study aims to explore how project managers enact leadership practices that enable workplace learning in complex public sector projects.

Design/methodology/approach – The study is based on a qualitative case study conducted within the Swedish Transport Administration. Data were collected through semi-structured interviews with ten project managers, nine field observations, and the researcher's reflective notes. The material was analysed using reflexive thematic analysis to identify recurring themes of leadership practices enabling learning.

Findings – The findings point to five inherent tensions that leaders foreground as sensemaking triggers when enabling workplace learning in everyday project work. These include balancing planning and adaptability, individual experience and collective understanding, structure and autonomy, reflection and delivery pressure, and internal coordination and external collaboration. Rather than resolving these tensions, managers foreground and navigate these tensions in ways that learning emerges. Managers enable learning by creating opportunities for teams to collectively interpret project complexity through dialogue and reflection.

Practical implications – The findings suggest that project managers can enable workplace learning by structuring everyday project work in ways that actively foreground inherent tensions, thereby supporting collective sensemaking under conditions of complexity.

Originality/value – The study contributes to research on workplace learning by providing a practice-based account of how learning-oriented leadership is enacted in complex public-sector project environments. It highlights how workplace learning emerges when leaders organize collective sensemaking around inherent tensions in complex project environments.

Keywords Workplace learning, Learning-oriented leadership, Leadership, Project-based organizations, Public sector, Leadership practice, Sensemaking, Complexity

Paper type Research paper



1. Introduction

Project-based work has become an increasingly important way of organizing work in both public and private-sector organizations (Bakker, 2010; Lundin and Söderholm, 1995). Such work is then often conducted under conditions of complexity, characterized by uncertainty, changing stakeholder expectations, professional diversity and competing demands (Gerald *et al.*, 2011; Lindgren *et al.*, 2014; Snowden and Boone, 2007). Under these conditions, project managers must find ways to navigate tensions between, for example, stability and change, planning and emergence, and short-term delivery and long-term development (Noordegraaf, 2015; Smith and Lewis, 2011). When successfully navigating, not only will they need to devise strategies that are responsive but also facilitate a continuous capability of learning and changing in response to the ever-changing environment (Harikkala-Laihinén *et al.*, 2024). In doing so, workplace learning becomes critical, not as a separate activity but as an integral part of everyday project work, enabling individuals and teams to continuously interpret, adapt to, and respond to evolving situations (Billett, 2001; Ellström, 2001). Recent quality management research similarly suggests that quality in complex environments emerges through interaction, adaptation, learning and collective sensemaking rather than through standardization alone (Boström *et al.*, 2025; van Kemenade and Hardjono, 2019).

Workplace learning research conceptualizes learning as a situated and socially mediated process embedded in everyday work practices rather than as a discrete training event (Billett, 2001; Ellström, 2001; Wallo *et al.*, 2022). Learning unfolds through interaction, coordination and shared problem-solving across professional and organizational boundaries. Previous research also shows that project performance improves when actors are able to reflect, adapt and coordinate in everyday work (Ellström, 2001; Tengblad, 2012). Leadership has further been identified to play a central role in shaping the relational and structural conditions under which such learning becomes possible (Wallo *et al.*, 2022; Wallo *et al.*, 2024).

However, while workplace learning research highlights the importance of dialogue, reflection, participation and leadership support for learning in everyday work (Billett, 2001; Ellström, 2001; Wallo *et al.*, 2022; Wallo *et al.*, 2024), less is known about how project managers enact such enabling conditions in complex project environments through everyday managerial practices. Although previous research has examined learning and knowledge transfer in project settings (Sense, 2007), there remains limited empirical understanding of how project managers enable workplace learning while navigating the inherent tensions of complex project work.

The purpose of this study is therefore to explore how project managers enact leadership practices that enable workplace learning in complex public sector projects. The following research question is addressed:

RQ1. How do project managers enable learning in everyday work within complex project environments in the public sector?

In this study learning is understood as an ongoing social process embedded in everyday work practices, interactions and collective sensemaking (Ellström, 2001; Wenger, 1998). Furthermore, inherent tensions are understood as recurring and competing demands that project managers must continuously navigate in everyday project work, often involving different priorities, perspectives and interpretations of ongoing project situations. The empirical study was conducted within the Swedish Transport Administration, a project-intensive public-sector organization characterized by regulatory demands, multiple stakeholders and high levels of organizational complexity.

2. Theoretical background

This section introduces perspectives on workplace learning, learning-oriented leadership, and complexity in project-based public organizations. These issues are probably main factors in explaining how project managers through their daily work enable and facilitate learning.

2.1 *Workplace learning as social practice*

Organizational learning has commonly been defined as the ways through which organizations engage in reflective thinking on their experiences, modify the underlying beliefs, and adjust their actions (Argyris and Schön, 1998; Crossan *et al.*, 1999). From a workplace pedagogy view, learning is highlighted as a natural and ongoing part of daily work activities. Here, learning is integrated through the interactions, problem-solving and shared experiences of people at work (Billett, 2001; Ellström and Illeris, 2004). From this view, learning is situated, social and closely connected to the conditions of work.

Recent research within workplace learning emphasizes that most learning occurs informally through participation in daily work activities and collaboration with others (Wallo *et al.*, 2022). Conditions such as trust, dialogue, shared responsibility and opportunities for reflection are important antecedents for such learning processes (Wijga *et al.*, 2025).

2.2 *Learning-oriented leadership in everyday work*

Learning-oriented leadership refers to managerial practices that facilitate learning processes embedded in everyday work. Within workplace learning research, leadership is understood as shaping conditions for dialogue, reflection and experimentation rather than exercising directive control (Ellström and Ellström, 2018; Wallo *et al.*, 2022). Through everyday activities such as framing challenges, inviting dialogue and encouraging questioning, leaders contribute to shared sensemaking and collective learning in work practices (Weick, 1995).

From a managerial work perspective, leadership unfolds through fragmented and interaction-intensive activities such as meetings, coordination, negotiation and boundary-spanning communication (Tengblad, 2012). In project-based organizations, where time constraints, shifting stakeholder demands and cross-functional collaboration are central, learning becomes embedded in project coordination, decision-making and problem-solving.

Projects are temporary and often cross-functional. As a result, learning may remain localized or even disappear 1 a project ends. Research on project-based learning has also highlighted the importance of post-project reflection and learning from project experiences as opportunities for organizational learning (Sense, 2007). In this context, learning-oriented leadership involves connecting short-term project delivery with longer-term developmental reflection. Leaders must therefore maintain learning across project phases, organizational boundaries and changing roles. Workplace learning is also understood as a social process through interaction (Palmu *et al.*, 2025). Leaders influence these processes by creating space for reflections, dialogue and psychological safety within everyday project work (Wallo *et al.*, 2024).

This view is aligned with leadership-as-practice research, which shifts attention from individual leaders to the interactions and activities such as dialogue and collective action through which leadership emerges in everyday work (Raelin, 2023). Recent studies of project-based work similarly emphasize that leadership is enacted through ongoing coordination, relationships and responses to emerging challenges, creating conditions for learning in everyday project practice (Hillberg Jarl, 2024). At the same time, in complex public-sector project environments, this kind of facilitation becomes particularly important, as institutional pressures and performance demands may otherwise suppress reflective dialogue.

Learning-oriented leadership in project-based public organizations can be understood as the situated and relational enactment of practices that may enable reflection, coordination and shared sensemaking amidst the limitations of daily managerial work (Wallo *et al.*, 2022; Wallo *et al.*, 2024).

2.3 Complexity as context for leading for learning

This study approaches complexity as a contextual condition shaping everyday managerial work. In project-based public organizations, complexity results from changing stakeholder expectations, regulatory requirements, professional diversity and time pressure (Lindgren *et al.*, 2014; Snowden and Boone, 2007). These conditions generate ongoing tensions rather than clear problems to solve. Complex adaptive systems theory suggests that organizations cannot control outcomes through linear planning (Stacey, 1996). Yet, patterns result from interaction. In such environments, learning develops through experimentation, adaptation and collective sensemaking rather than by following fixed plans (Plowman *et al.*, 2007; Uhl-Bien and Marion, 2009). From a workplace learning perspective, this suggests that learning develops as people engage with uncertainty and respond to situations in practice. Public-sector project organizations are often characterized by competing value demands, such as stability and change, accountability and innovation, efficiency and long-term sustainability (Noordegraaf, 2015; Smith and Lewis, 2011). These tensions cannot be removed but must be navigated in practice.

A paradox perspective helps explain how leaders operate in the presence of such tensions (Lewis, 2000; Smith and Lewis, 2022). Rather than choosing between opposing demands, paradox research suggests that effective leadership is about engaging with them and, at times, turning them into productive tensions (Smith and Lewis, 2011; Smith and Lewis, 2022). Lindgren *et al.* (2014) point out that in project environments, this might involve balancing delivery and reflection, standardization and experimentation, or short-term performance and long-term learning. From a managerial work perspective, leadership is enacted through everyday activities such as meetings, negotiations, coordination and informal conversations (Tengblad, 2012). In complex project environments, these everyday interactions become important arenas for balancing competing demands.

Leadership in complex environments is therefore relational and situated. It occurs in everyday interactions through which people build and rebuild meaning (Crevani *et al.*, 2010; Raelin, 2016).

In complex environments, learning becomes increasingly important for navigating uncertainty and change. However, whether learning emerges depends on how leaders shape the social and structural conditions for dialogue, reflection and coordination (Ellström and Ellström, 2018; Wallo *et al.*, 2022). In complex environments, leadership involves structuring opportunities for shared reflection while navigating competing demands (Wallo *et al.*, 2022).

2.4 Towards a practice-based understanding of leading for learning

Taken together, the perspectives on organizational learning, workplace learning and practice-based leadership highlight that learning emerges through social interaction and reflection in everyday work (Argyris and Schön, 1998; Billett, 2001; Ellström, 2001). Rather than treating leadership as a set of individual traits, these perspectives emphasize leadership as enacted in ongoing interactions that shape opportunities for learning. In this study, these perspectives function as sensitizing concepts that guide the analysis without determining it. Complexity is therefore approached as a contextual condition shaping managerial work in public project-based organizations. Rather than testing predefined theoretical models, the study aims to

deepen understanding of how leading for learning is enacted in everyday project work. Leading for learning is thus understood as a relational activity through which project managers shape opportunities for dialogue, reflection and coordinated action.

3. Method

This section describes the methodological approach used in line with the purpose of the study. The design is chosen based on the interpretive nature of the study, which focuses on the necessity of understanding leadership for learning as a situated and context-dependent process.

3.1 Research design and context

This research was part of an ongoing project at the Swedish Transport Administration. The environment represents a typical example of a complex organizational structure, hierarchical long-term projects, and multiple simultaneous change processes, which need continuous learning. To capture the nature of these forms, the study employed a qualitative case study design for the investigation of complex phenomena in real-life contexts (Yin, 2018). The method allowed us to deeply dive into learning-in-practice processes and develop a deeper understanding of leadership and learning processes in their organizational context.

The case study was conducted in close collaboration with practitioners and inspired by principles of action research, which emphasize collaboration, reflection and practical relevance (Bradbury, 2015; Hersted and Madsen, 2018). Continuous dialogue with project managers and organizational representatives enabled ongoing reflection on emerging interpretations and ensured that the analysis remained grounded in the participants' experiences. In this context, the research process had a dual purpose: to contribution to academic knowledge while also supporting and helping practitioners in reflecting on their leadership and learning in complex environment of projects.

3.2 Data collection

Data for this study were collected through methodological triangulation (Flick, 2018; Yin, 2018) to achieve a rich and detailed understanding of the phenomenon. Three types of data were included: semi-structured interviews, field observations, and the researcher's reflective notes. All data collection was carried out by the first author. By combining these sources, it was possible to capture both project managers' articulated understandings of learning and how their practices unfold in everyday work situations. In qualitative research, triangulation is not only used to strengthen the credibility of findings, but also to deepen the analysis by integrating different sources of data and perspectives throughout the research process (Flick, 2018; Yin, 2018).

Interviews: Semi-structured interviews were conducted with ten project managers at Swedish Transport Administration. All participants had at least five years of experience managing complex projects and leading cross-functional teams within the transport infrastructure sector. A purposive sampling strategy (Patton, 2015) was used to ensure that the participants were relevant to the study's analytical focus. In collaboration with organizational representatives, a list of potential participants was developed based on project responsibility, years of experience and involvement in cross-functional project work. Ten project managers who met these criteria were invited to participate, and all agreed to take part in the study. The interviews focused especially on project managers, as the study aims to understand how leadership practices are enacted in everyday work. Rather than focusing on employees' general perceptions of learning, the study aimed to explore how leaders themselves describe and make sense of situations that may enable learning. This delimitation

helped to keep a clear focus on leadership in practice, in line with case study research which emphasizes a well-defined unit of analysis (Yin, 2018).

Each interview lasted between 45 and 60 min. The discussions addressed how project managers balance operational demands with learning, how they navigate increasing complexity in their project, and how organizational structures support or limit reflection. All interviews were recorded and transcribed *verbatim* to capture the subtle differences in meaning (Kvale and Brinkmann, 2015). To protect participants' confidentiality, interview excerpts are attributed using participant codes (P1–P10) throughout the Findings section.

Observations: Nine observations were conducted, which lasted about twelve hours in total between January to April 2025. These observations complemented the interviews by providing contextual insight into how learning unfolded in everyday social and practical activities. The observed situations included project coordination and follow up meetings, steering group meetings, workshops and informal workplace interactions, typically involving between 13 and 20 participants. The observations focused on situations where coordination, decision-making and cross functional interaction were central.

During the observations, the researcher adopted a flexible role, moving between participant and non-participant positions. Following Bryman (2018), this approach enabled close engagement with the setting while still maintaining some analytical distance. In this study, particular attention was given to how leadership was enacted in interaction – for example, how project managers framed challenges, invited dialogue, encouraged reflection and coordinated multiple actors. Field notes were written after each session and included both descriptive accounts and more interpretive reflections. In this study, the observations are numbered from 1 through 9 (Obs. 1–9) throughout the analysis.

Researcher's reflections during the study: Throughout the study, the first author (hereafter referred to as "the researcher") kept a reflexive journal to note down thoughts, emerging ideas and initial interpretations during fieldwork. The researcher noted several situations where learning seemed to occur through interactions, for example in discussions and coordination activities. These notes were not treated as empirical data in the analysis. Instead, they were used to support reflection and to make the researcher more aware how interpretation developed over time. By returning to the journal during the analysis, it becomes possible to question initial assumptions and ensure that interpretations were grounded in the interviews and observation material.

3.3 Analysis method: Reflexive thematic analysis

The analysis of the study was carried out as a reflexive and iterative process, where the researchers moved back and forth between the empirical material and the emerging interpretation. As illustrated in Figure 1, the work involved becoming familiar with the data, developing codes, identifying themes and gradually refining the interpretation.

In line with reflexive thematic analysis, codes and themes weren't regarded as naturally existing in the data. Instead, they were developed through the researcher's active engagement with the empirical material (Braun and Clarke, 2019).

Coding process: The transcripts were coded manually to highlight the content associated with learning, leadership and organizational tensions. The coding was inductive, meaning



Figure 1. Illustration of the analytical progression in study's reflexive thematic analysis

that labels were generated from the data rather than the theory already existing (Braun and Clarke, 2013). The tensions presented in the findings were not predefined as analytical categories but emerged inductively through the iterative coding and interpretation of the empirical material. Each segment was given a short description label reflecting its main idea.

Field notes from the observations were coded using the same approach which was continuously refined. Initially, the researchers analysed interviews and observations separately and then compared to identify patterns that were common in both sources. In this study, themes were developed gradually moving from initial codes and broader patterns in the data. These themes were continuously reviewed against the empirical material to ensure they reflected participants' accounts and observed practices. The analysis focused on meaning and patterns across the data set, rather than simply counting frequency, with particular attention to how leadership practices were enacted in situations where learning seemed to be enabled.

Triangulation: Following the initial analysis of each data source, triangulation was used to compare findings across interviews, observations and reflective notes (Denzin, 1978). This enabled leadership practices to be examined both as described by participants and as enacted in everyday interaction. Rather than seeking convergence alone, triangulation was used to explore tensions and discrepancies between talk and practice. For example, managers' emphasis on "open dialogue" in interviews was compared with how dialogue unfolded in observed meetings. In this way, triangulation supported a deeper interpretative understanding of how leadership for learning was enacted in everyday work.

Analytical triangulation through researcher collaboration: Researcher triangulation was employed to strengthen interpretative rigour (Nowell et al., 2017). In this study, three researchers were involved in the analytical process. The lead author and a co-researcher carried out the coding of the interview material together, working closely to develop initial codes and themes. The lead author was also responsible for coding the observational data. A third researcher took on a more critical role, questioning assumptions and contributing to ongoing discussion during the analysis. Throughout this study, differences in interpretation were discussed until a shared understanding was reached. This collaborative process supported a more nuanced interpretation of the empirical material.

Reflexivity in analysis: Throughout the analytical process, the researcher's standpoint was considered as an active component in co-creating the meaning (Alvesson and Skoldberg, 2017). The researcher's knowledge and experience of project management provided both contextual understanding and the potential for bias, which were continuously documented in a reflexive journal. These reflections were not treated as empirical data but functioned as a tool for critical self-examination, supporting interpretations grounded in interviews and observations.

In line with reflexive thematic analysis, the researcher's position was treated as part of the knowledge production process, thereby strengthening analytical transparency and interpretative rigour.

3.4 Ethical considerations

The study followed the ethical standards of the Swedish Research Council (2017) and the Swedish Transport Administration, and focused on the ethical aspects of professional practice in the public sector. Participants received extensive written and verbal information about the purpose, procedure and data handling of the study, which is in line with Wiles et al. (2012). Informed consent to participate in the study was given voluntarily, and participants were also informed that they could discontinue their participation at any time without incurring any form of penalty. Written consent was obtained in accordance with the EU

General Data Protection Regulation (EU 2016 / 679) and stored separately from the research data.

To protect confidentiality, names and organizational identifiers were replaced with codes, and sensitive quotations were modified or anonymized, following the [British Sociological Association \(2017\)](#). Data were securely stored on a restricted university server and will be deleted after project completion, in line with ethical research guidelines ([Israel and Hay, 2006](#)).

Everyday research practice was guided by the concept of ethical mindfulness as outlined in the work of [Guillemin and Gillam \(2004\)](#). The researcher kept a reflective journal to note situations where power imbalance or uncertainty in interpretation become visible. This helped maintain awareness of how research was conducted and how decisions were made throughout the study.

4. Findings

The findings show how project managers enable learning through everyday managerial work in complex project environments. Rather than relying on separate training initiatives, learning is embedded in ongoing sensemaking. The analysis has identified five interrelated tensions (see [Figure 2](#)) that shape the practice field in which collective learning emerges in the complex projects studied. [Figure 2](#) provides a conceptual illustration of how workplace learning emerges in complex project environments through collective sensemaking around inherent tensions. The five tensions, illustrated by arrows, function as sensemaking triggers that invite dialogue, reflection, and shared interpretation in everyday project work.

In this study, tensions are understood as recurring and competing demands that cannot be permanently resolved but must be continuously navigated in practice. Some tensions appeared as explicit trade-offs between competing priorities, while others reflected differences in perspectives and interpretations that required ongoing dialogue and collective sensemaking, such as the second theme. The findings suggest that learning-oriented leadership in complex projects emerges when these tensions are used as sensemaking triggers. These tensions are not viewed as problems to eliminate. Instead, they represent inherent conditions in complex project work that project managers must continuously navigate and highlight, thereby creating conditions where collective sensemaking and workplace learning can fruitfully emerge.

The following sections present the five identified tensions in turn. Interview excerpts and observational examples are used to illustrate recurring patterns identified in the empirical material, rather than representing the full range of the data set.

4.1 Structure – adaptability: learning between structure and adaptability

Project managers described this tension, for example, by viewing planning as something that is necessary but not fixed. One project manager explained it as “working with a plan that must always be ready to change is necessary in complexity” (P3). Another participant pointed out: “If we plan too much, we lose the flexibility but if we do not plan at all, chaos takes over” (P8).

Observations further illustrated how this tension functions as a sensemaking trigger for learning. During a project review (Obs. 3, 10 March 2025), the manager asked the team to think about the lessons learned before changing the schedules – thus, what had initially been planned as a control meeting gradually turned into a shared learning session. Rather than focusing only on adjusting the schedule, the discussion shifted towards reflecting on how earlier planning decisions had shaped the current situation. Through this discussion, the team reconsidered priorities and developed a shared understanding of what was possible within the existing constraints.

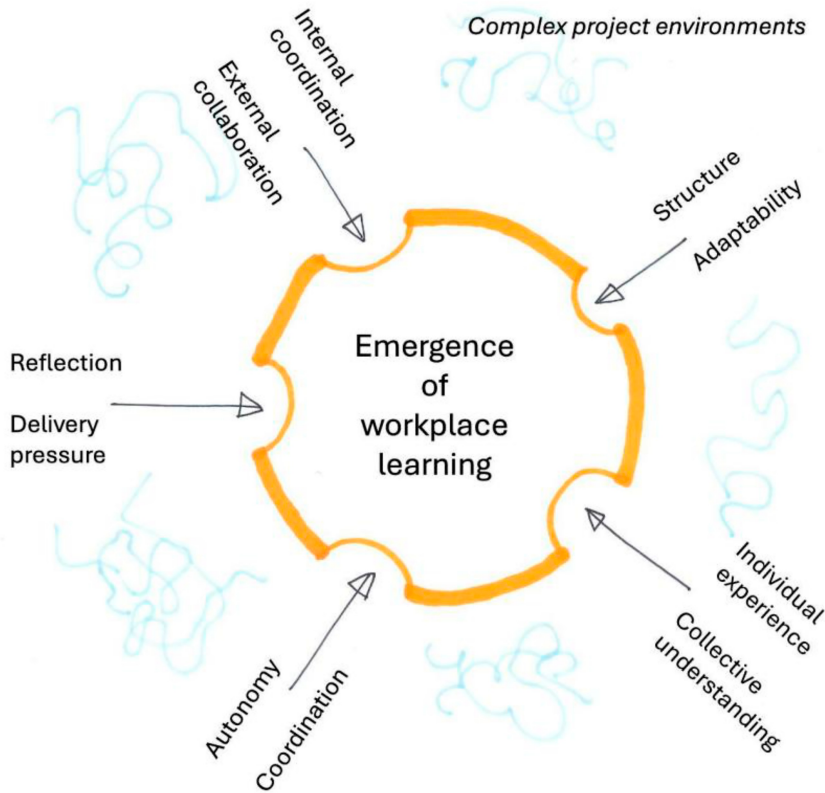


Figure 2. A conceptual diagram illustrating how workplace learning emerges in complex project environments through collective sensemaking around the five inherent tensions

Across both interviews and observations, plans did not appear as fixed. Instead, they were revisited repeatedly, often through moments of collective reflection. These situations enabled managers and team members to gradually align their understanding of constraints and possibilities. In this way, they navigated the tension between adapting to change while still maintaining continuity in the project work.

4.2 Individual experience – collective understanding: learning by transforming individual experiences into shared understanding

This tension was also visible in how individual experiences were brought into learning of the group. Several project managers described that learning should not stay at the individual level but needs to be shared. As one participant put it, “the learning of each individual has to be the development of the team” (P5). Another added: “If learning remains personal, the organization learns nothing” (P2).

An observation from a reflection workshop illustrated how the team worked with this tension as a sensemaking trigger in practice (Obs. 5, 12 February 2025). During the workshop, participants shared personal insights, which the project manager brought together

as collective lessons. In the researcher's notes, this was described as "individual stories gradually turning into a shared understanding". As different perspectives emerged in discussion, some misunderstandings became visible. Team members did not always make sense of situations in the same way, and individual experiences occasionally pointed to different understandings of ongoing project challenges. These differences were openly discussed within the team, helping participants gradually develop a more shared understanding of how to move forward.

Looking across interviews and observations, managers often created space for team members to speak openly about what had worked and what had not. When experiences were shared, they did not remain at the level of individual stories. Instead, they were discussed, compared and connected to ongoing work and current challenges. Over time, this contributed to a more shared understanding of how to approach ongoing tasks. Learning did not remain at the individual level but became part of how the team acted and worked together. In this sense, managers continuously navigated the tension between preserving diverse individual perspectives and developing a shared understanding that could guide collective action.

4.3 Autonomy – coordination: learning by navigating autonomy within structured frameworks

The third tension concerns how managers organize work in ways that combine structure with individual initiative. Several project managers talked about the importance of having some form of structure, while still leaving room for flexibility. One participant described this as "clear structures that create space for learning within boundaries" (P7). Another reflected: "If everything is fixed, people stop to think, if nothing is fixed, they get lost" (P10).

This tension could also be seen in the observations. For example, during a coordination meeting (Obs. 4, 18 March 2025), the manager introduced a clear agenda but at the same time invited the team to raise concerns and suggest alternative ways forward. Team members responded by questioning assumptions and suggesting adjustments. In the researcher's journal, this situation was noted as an example of how teams balanced structure and flexibility in practice. It also illustrated how such moments functioned as a sensemaking trigger that helped the team in handling uncertainty without losing direction.

Across both interviews and observations, structure and autonomy did not seem to function as opposites. Rather, they worked together in practice. Clear routines provided direction and a sense of stability, while more open moments in meetings allowed team members to speak up, raise concerns and rethink decisions. In these situations, learning emerged through navigating this tension actively in practice.

4.4 Reflection – delivery pressure: learning by creating space for reflection under delivery pressure

This tension concerns how managers try to make room for reflection while keeping up with delivery demands. Several project managers described how learning needs to take place alongside ongoing work, rather than being postponed until afterwards. As one manager put it: "We are always delivering, but if we never pause to think, we don't get better" (P6). Another added: "Reflection must truly be part of the workday; you cannot just add it afterwards" (P9).

In one observed weekly status meeting (Obs. 6, February 22nd, 2025), the project manager paused the technical discussion and asked the team: "What did we learn this week?" This shifted the conversation. Instead of focusing only on reporting progress, the team began to reflect on their experiences and what they had learned. In the researchers' journal, this moment was described as "learning in the flow of work".

Across the material, similar situations appeared and leaders foregrounded tensions as a sensemaking trigger when short pauses for reflection during meetings were built into routine coordination. These moments helped the team notice patterns, question assumptions, and adjust their way of working, even while delivery was still ongoing. Rather than treating reflection and delivery as separate, managers treated them as intertwined. In this way, learning became part of managing pressure, not something that competed with it.

4.5 Internal coordination – external collaboration: learning by facilitating dialogue across organizational boundaries

This tension relates to how managers actively invite dialogue across organizational boundaries to better understand complex projects and avoid blind spots in projects. Several participants emphasized the importance of remaining outward-looking. “We cannot remain within the organization and make assumptions about what our customers need; instead, we need to establish dialogue early in the process,” said one (P4), and another person reflected that “we learn the most when we collaborate with others” (P1).

At a joint workshop (Obs. 7, 15 February 2025), the project manager structured the session so that internal experts and external stakeholders could question each other’s assumptions, illustrating how this tension functioned as a sensemaking trigger. The researcher noted that “dialogue replaced defence, and participants started to think together”, as participants moved from defending their positions to co-creating them. New understandings of the project constraints and possibilities emerged through this shift. By opening the project to external perspectives, managers expanded the space for learning beyond the team. This helped the project adapt to complexity rather than react to it too late.

4.6 Summary of findings

Across the empirical data, project managers appeared to enable learning by using inherent tensions as “sensemaking triggers”. These tensions represent inherent conditions in complex project work that project managers continuously navigated, through dialogue, reflection and coordination. The findings also suggest that managers deliberately foregrounded these tensions in ways that created conditions where collective sensemaking and workplace learning can emerge. The five tensions identified in the analysis were linked to recurring leadership practices that enabled teams to engage in collective sensemaking in everyday project work. [Table 1](#) summarizes these practices.

5. Discussion

Rather than viewing workplace learning in projects primarily as a matter of formal learning structures or training initiatives, the findings of this study suggest that learning in complex project environments emerges through how leaders navigate and foreground the inherent tensions of everyday project work. In the projects studied, these tensions did not appear as obstacles to effective coordination but as collective sensemaking triggers for dialogue, reflection and collective interpretation of evolving project situations.

5.1 Leading for learning through navigating tensions in everyday project work

The findings suggest that learning in complex project environments is closely intertwined with how managers organize everyday work practices. Everyday coordination activities, such as meetings, planning and various forms of dialogue, often create opportunities for reflection and sharing knowledge. This is in line with earlier research suggesting that workplace learning emerges through participation in everyday work practices

Table 1. Leadership practices used to trigger collective sensemaking and learning around inherent tensions in complex project environments

Inherent tension	leadership practices used to trigger collective sensemaking and learning
Planning – adaptability	Leaders create space for teams to collectively reinterpret project plans in light of unfolding developments. Deviations from plans are framed as occasions for joint interpretation and learning rather than as failures of compliance
Individual experience – collective understanding	Leaders facilitate exchanges across roles and professional backgrounds, enabling individual experiences and interpretations to be articulated, contrasted, and gradually integrated into shared understandings of the project situation
Structure – autonomy	Leaders maintain organizational structures while also enable and allowing room for situational judgment. Through dialogue about how rules and procedures are applied in practice, teams negotiate how structures can guide action without becoming too restrictive
Reflection – delivery pressure	Leaders introduce moments for reflection within ongoing project work, encouraging teams to pause and make sense of what is happening. Even under delivery pressure. In this way, reflection becomes part of the work itself rather than something separated from it
Internal coordination – external collaboration	Leaders actively connect internal project members with external actors, making it possible to bring in different perspectives and constraints. These are then jointly interpreted and incorporated into how the project is understood and developed

(Ellström, 2001; Wenger, 1998). Similarly, Wallo *et al.* (2022) and Palmu *et al.* (2025) show that managers can promote learning by structuring daily work activities in ways that create opportunities for dialogue, reflection and shared problem-solving.

The findings also resonate with paradox research, which suggests that tensions are inherent in complex organizational settings (Smith and Lewis, 2011). In the present study, these tensions become visible in everyday coordination practices where project managers balance competing demands such as delivery and reflection or structure and autonomy. The tensions identified in the study should therefore not be understood as dilemmas to be solved, but as persistent organizing conditions in complex project environments that invite ongoing sensemaking. This study therefore contributes by showing how these tensions are navigated through small, situated acts of coordination and dialogue in daily managerial work. In this sense, leading for learning in complexity can be understood as the ongoing practice of organizing dialogue and reflection around the tensions that characterize everyday project work.

5.2 Learning through collective sensemaking in interaction

The findings also suggest that learning in project-based work develops through interaction in which individual experiences are interpreted and transformed into shared understanding. When project managers invite team members to reflect together, personal insights become resources for collective sensemaking. As Crevani *et al.* (2010) and Raelin (2016) suggest, leadership in complex settings develops through everyday interactions where meaning is continuously negotiated. In this study, this becomes visible when managers invited teams to reflect on tensions in their work, enabling participants to collectively make sense of emerging challenges.

From a workplace learning perspective (Billett, 2001; Ellström, 2001), the findings of this study point to how learning emerges through participation in shared activities. In project environments, meaning is often shaped through ongoing interaction in meetings, coordination and dialogue (Palmu *et al.*, 2025). In this sense, learning tends to take place informally as part of everyday project work, which is also noted by Wallo *et al.* (2022).

In this way, project leadership shapes not only the direction of the work, but also how people take part in it. By creating space for dialogue, trust and shared responsibility (Wijga *et al.*, 2025), project managers influence whether learning can take root. In this sense, learning becomes a relational process built through interaction within project-based organizations. This perspective aligns with the understanding of learning as an ongoing social process embedded in everyday work practices, interactions and collective sensemaking (Ellström, 2001; Wenger, 1998). In this way, interaction becomes the medium through which tensions are interpreted, and workplace learning emerges in everyday project work.

5.3 Theoretical contribution

This study contributes to workplace learning research by offering a practice-based account of how leading for learning unfolds in complex project environments. The study shows that leading for learning in complex projects is less about applying specific leadership behaviours and more about continuously navigating tensions that structure everyday managerial practice.

By detailing how learning is socially organized through interaction and shared regulation, in line with Palmu *et al.* (2025) and Wallo *et al.* (2024), the study extends understanding of learning-oriented leadership beyond abstract principles. The findings also resonate with recent studies highlighting how leaders enable learning by structuring conditions for interaction and reflection in everyday work.

More specifically, it shows how learning-oriented leadership is enacted through the everyday handling of tensions in project environments, such as balancing planning and emergence, reflection and delivery, and individual and collective learning. It further integrates workplace learning research with complexity perspectives by illustrating how learning is sustained through the practical handling of competing demands. Leading for learning therefore emerges not as a leadership style but as an ongoing practice of shaping conditions for reflection, coordination and shared sensemaking in everyday project work.

The findings also resonate with Weick's (1995) notion of sensemaking, which highlights how organizational actors collectively interpret ambiguous situations through interaction. In the projects studied, the tensions inherent in project work created situations that invited such collective interpretation. By identifying inherent tensions as such sensemaking triggers, the study extends sensemaking research by showing how everyday managerial practices organize situations where collective interpretation and workplace learning can emerge in ongoing work.

Taken together, the findings bring together three theoretical perspectives that help explain how learning takes place in complex project environments. First, research on workplace learning points to how learning emerges through participation in everyday work practices and social interaction (Billett, 2001; Ellström, 2001). Second, paradox research highlights how organizational work often involves ongoing tensions between competing demands (Smith and Lewis, 2011). Third, sensemaking theory emphasizes how actors continuously interpret and respond to evolving situations through interaction and dialogue (Weick, 1995).

The present study brings these perspectives together by showing how leaders foreground inherent tensions in complex projects to trigger collective sensemaking through which workplace learning emerges in everyday project coordination.

5.4 Practical implications

For practitioners working in complex project environments, the findings suggest that learning depends less on formal training or education and more on how everyday project work is structured. When project managers actively bring inherent tensions to the fore – such as balancing planning with adaptability or reflection with delivery – they create space for dialogue, reflection and collective sensemaking. Practices such as structuring meetings to include short reflective pauses, encouraging open dialogue, and connecting internal and external actors illustrate practical ways of enabling learning in complex project environments.

5.5 Limitations

This study was conducted within a single Swedish public-sector organization and involved a relatively small group of experienced project managers. The findings should therefore be understood as contextually situated insights into leading for learning in complex project environments. At the same time, the use of interviews, observations and reflective notes enabled a rich understanding of how leadership practices were enacted in everyday work and strengthened the analytical depth of the study. While the findings are not intended to be universally applicable, they may offer analytical relevance for similar project-based environments characterized by complexity, multiple stakeholders and competing demands.

6. Conclusions and future research

This study explores how project managers support workplace learning in complex, project-based public organizations. The findings indicate that learning is embedded in everyday managerial work, rather than treated as a separate activity. By navigating inherent tensions in project coordination, project managers create opportunities for dialogue, reflection and collective sensemaking through which learning can emerge.

The analysis identified five interrelated tensions that function as triggers for collective sense making and learning. Rather than being resolved, these tensions are actively foregrounded and navigated by project managers in ways that enable learning to emerge in everyday project work.

This study contributes to workplace learning research by showing how learning in complex project environments emerges through collective sensemaking around inherent tensions in everyday project work. It shifts attention from formal learning structures to the relational practices through which leaders organize opportunities for learning in ongoing project coordination.

Future research could further explore how workplace learning is co-created between internal and external actors in project-based environments, and how such cross-boundary interactions influence collective sensemaking over time.

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