

Investigating the Role of the Language Action Perspective in Improving Communication and Collaboration in Lean Construction Teams

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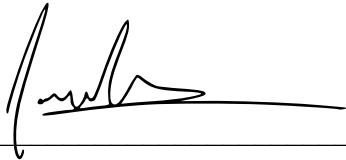
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Doctor of Philosophy

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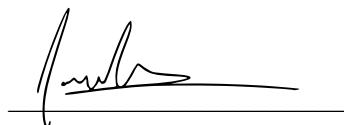
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A handwritten signature in black ink, appearing to read "John Doe".

Date: August 28, 2025

Declaration

I hereby declare that this dissertation has not been submitted in part or whole as paperwork for a degree at any other university. I hereby declare that this dissertation is entirely my work and that all parts and thoughts, which have been taken from other persons, are marked and identified by reference.

A handwritten signature in black ink, appearing to read "Jason Klous". The signature is fluid and includes a small flourish at the end.

Klous, Jason

Candidate

Abstract

Integrating the Language Action Perspective (LAP) with Lean Construction methodologies can significantly improve communication, collaboration, trust, and overall moods in construction project teams. Rooted in the idea that language creates new realities and actions rather than merely a means of information exchange, the LAP emphasises the use of speech acts as a mechanism for building trust, making and securing reliable promises, and aligning teams. By adopting a qualitative research design of action case study research, this study examines how a training intervention with construction teams on the LAP principles can impact communication dynamics, trust levels, and the reliability of promises. Two action case studies form the basis of the research, where focus group workshops introduced the LAP concepts, including speech acts, conditions of satisfaction (CoS), trust, listening, and moods. Pre- and post-workshop surveys, interviews, and direct observations were analysed using content analysis and mean scores of survey responses to evaluate changes in team behaviour and overall project communication.

The findings demonstrate that engaging construction project teams on the use of LAP through focus group workshops significantly enhanced communication clarity, fostered a culture of trust, and improved the reliability of team commitments. When used within lean construction projects, the LAP can facilitate more efficient workflows, collaborative team environments, and a greater level of trust. By shifting focus from managing activities to managing outcomes through reliable promises, the LAP is a critical foundation for improving lean project delivery. The originality of this study lies in bridging two previously disconnected domains—lean construction and the Language Action Perspective—thereby offering both a new theoretical lens and a practical framework for addressing long-standing communication challenges. This dual contribution extends lean construction theory by embedding language as a performative act at its core, and advances LAP scholarship by demonstrating its application in a new sectoral context. In doing so, the research not only provides empirical evidence of impact but also establishes a novel interdisciplinary foundation for enhancing collaboration and creating high-performing project teams.

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Dedication

This thesis is dedicated to my wife, Amy Klous. Your love, support, and patience made this possible. I am grateful for all your support and encouragement during this long and, at times, difficult journey. Your strength inspired me, and without you, I would never have started. I love you.

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List of Abbreviations

AEC	Architecture Engineering Construction
AWL	Action Workflow Loop
BIM	Building Information Modelling
CbM	Commitment-based Management
CoS	Conditions of Satisfaction
IBS	Industrialised Building Systems
IPD	Integrated Project Delivery
JIT	Just In Time
LAP	Language Action Perspective
LPS	The Last Planner System
PET	Project Execution Team
SAT	Speech Act Theory
SCM	Supply Chain Management
TQM	Total Quality Management
TVD	Target Value Design

Chapter 1: Introduction to the Research

1.1 Introduction

This research delves into the integration of the Language Action Perspective (LAP) as a transformative approach to improving communication and collaboration within project teams. Rooted in the performative nature of language, the LAP emphasises the power of speech acts like requests, promises, and declarations to create action and drive organisational change. The study draws upon qualitative methodologies, including case study design and action research methods, to investigate how training and capacity building on LAP amongst construction project teams can enhance team communication effectiveness. By examining real-world applications, it explores whether this approach can foster trust, improve the clarity of requests, ensure the reliability of promises, and elevate the effectiveness of team interactions in high-pressure construction environments. This introduction chapter provides a background to the study, the research questions, the aim and objectives and the methodology adopted, setting the stage for a comprehensive exploration of LAP's potential to improve team collaboration and project outcomes. The organisation of the chapters for the rest of the study is also presented.

1.2 Research Background

Communication in the construction industry is often poor due to factors that stem from the industry's inherent complexities, fragmentation, and historical practices (González et al., 2010). These challenges lead to misunderstandings, conflicts, and inefficiencies, significantly impacting project outcomes. One of the primary reasons for poor communication is the fragmented nature of the construction industry. The industry involves multiple stakeholders, including clients, contractors, subcontractors, and regulatory bodies, each with distinct roles and communication styles. Poor communication in the construction industry arises from its fragmented structure, the complexity of projects, and the historical neglect of communication practices. This fragmentation can create barriers to effective communication, as highlighted by those who note that ineffective communication among stakeholders is a significant factor in poor project performance (Ejohwomu et al., 2017). The decentralised structure of construction projects, combined with

geographical distribution, complicates communication processes and can lead to misunderstandings and conflicts, as noted by those who emphasise the importance of communication in managing the diverse responsibilities of various parties involved in construction projects (Tai et al., 2009).

Additionally, the complexity of construction projects contributes to communication challenges. Unforeseen circumstances, such as changes in project design or extreme weather conditions, can exacerbate communication issues and lead to stakeholder conflicts (Alshehri, 2021). The dynamic and unpredictable nature of construction environments requires effective communication to manage these changes, yet the industry often struggles to adapt. Moreover, the historical focus on construction's technical and operational aspects has overshadowed communication's importance. Previous research indicates that poor communication is often described as ineffective and deficient, which can lead to significant consequences such as cost overruns and project delays (Gamil and Rahman, 2018). Despite recognising the critical role of communication, the construction industry has not sufficiently prioritised research and development in this area, resulting in a lack of effective communication strategies and training programs. Addressing these challenges requires a concerted effort to prioritise effective communication strategies and foster collaboration among all stakeholders involved in construction projects. There has been a bias in existing research to examine communication on construction projects through the lens of technology (Zhao et al., 2015; Nascimento et al., 2018). This focus on technology has overlooked the importance of developing the underlying skills and practices needed to utilise technology to enhance communication.

Trust is a critical element in construction projects. The ability of teams to build and maintain trust in projects is crucial to a successful outcome (Zuppa, Olbina and Issa, 2016; Buvik and Tkalich, 2022). Much of the existing research has focused on trust regarding company-to-company relationships (Manu et al., 2015) and trust as necessary in commercial agreements (Zuppa, Olbina and Issa, 2016). But trust is fundamental to human relationships, and trusting each other is the foundation for creating a commitment-based approach to managing projects (Solomon and Flores, 2001; Draper, Howell and Macomber, 2006; Sull and Spinoza, 2007).

The LAP is a theoretical framework that emphasises the role of language as a fundamental tool for action and interaction among individuals (Winograd and Flores, 1986). Developed primarily by Fernando Flores and based on the philosophical works of J.L. Austin, John Searle, and Martin Heidegger in the context of organisational communication, the LAP is based on the theory that language is not merely a means of conveying information but is integral to the creation and performance of actions and the establishment of social relationships (Macomber and Howell, 2003). According to the LAP, conversations are seen as actions that create commitments and a shared understanding among participants, facilitating collaboration and coordination in various domains, including business processes and project management. The LAP is grounded in the idea that effective communication involves not only the exchange of information but also the negotiation of commitments. This perspective highlights the importance of speech acts like utterances that perform actions such as promising, requesting, or informing, and their role in shaping interactions and outcomes. The LAP encourages participants to engage in meaningful conversations that align actions with shared goals, enhancing cooperation and reducing misunderstandings (Macomber and Howell, 2003).

The feasibility and applicability of the LAP within construction project environments is supported by a robust theoretical foundation and increasing empirical interest in improving project communication dynamics. Rooted in speech act theory (Austin, 1959; Searle, 1969) and advanced by Winograd and Flores (1986), the LAP conceptualises language as a form of action rather than a neutral conduit of information. This performative view is particularly relevant to construction projects, which are characterised by complex inter-organisational structures, ambiguous authority boundaries, and the frequent breakdown of trust and coordination. Existing literature in lean construction highlights persistent challenges related to unreliable commitments, fragmented communication, and the absence of mutual understanding conditions that the LAP explicitly addresses through structured conversational practices such as requests, offers, and promises. Integrating the LAP into construction discourse thus offers a theoretically coherent and practically actionable model for shifting from task-based to commitment-based project management.

Some literature has emphasised the importance of the LAP for improving individual lean tools or specific pieces of the LAP in the lean construction field (Isatto, Azambuja, and Formoso, 2015;

Viana, Formoso, and Isatto, 2016; Salazar, Arroyo, and Alarcón, 2020). However, this focus on improving individual tools or using specific speech acts misses the opportunity to build the skills needed within a team using the LAP to effectively coordinate work across the project ecosystem.

1.3 Research Justification

Four factors drive this research: 1) the significance of language and communication in the lean construction industry, 2) the limited amount of research on the LAP in the lean construction industry, 3) the significance of the LAP on improving communication on lean construction projects and 4) the application of the LAP and the lean construction agenda to improve project outcomes.

1.3.1 The Significance of Language and Communication in the Lean Construction Industry

Language and communication play a significant role in the lean construction industry by emphasising the importance of communication as a fundamental component of collaborative work processes. In construction, where multiple stakeholders, including clients, contractors, and subcontractors, must coordinate their efforts, effective communication is crucial for ensuring that all parties are aligned and project objectives are met (Dave and Koskela, 2009; Hasan & Rasheed, 2019). One of the critical aspects that the LAP could bring to construction is its focus on the collaborative nature of knowledge management. The construction industry is increasingly recognising that its most valuable asset is the knowledge and experience of its workforce. Effective communication facilitates the sharing of tacit knowledge, which is essential for problem-solving and innovation in construction projects (Dave and Koskela, 2009). For instance, developing social relationships that enhance collaboration can improve project outcomes by fostering an environment where information flows freely among stakeholders (Dave and Koskela, 2009). This aligns with LAP's assertion that communication is an action that can create new realities. Additionally, the fragmented nature of the construction industry, characterised by diverse teams and complex project requirements, necessitates a robust communication framework. The LAP encourages establishing clear communication practices that create action, build trust, and create positive moods in project teams (Hasan and Rasheed, 2019).

The LAP puts forth the theory that language is not merely a tool for conveying information but is integral to the actions and interactions that shape project outcomes (Flores, 2016). Moreover, the LAP highlights the role of communication in mitigating conflicts that often arise in construction projects. Research indicates that many conflicts stem from poor communication and coordination among stakeholders, which can lead to misunderstandings and disputes (Alshehri, 2021). By applying the principles of LAP, the construction industry can better understand how its communication impacts relationships and influences project outcomes. This understanding can lead to implementing more effective communication strategies and training industry personnel in LAP principles that address the root causes of conflicts, thereby enhancing collaboration and reducing project delays (Alshehri, 2021; Hashemi, 2014). However, further research within the construction context will be needed to investigate the feasibility and applicability of the LAP for improving communication amongst construction project teams.

1.3.2 Limited Research on Language Action in the Lean Construction Industry

The limited research on the LAP within the construction field can be attributed to several interrelated factors, including the industry's inherent complexities, the fragmented nature of construction projects, and the historical focus on technical and managerial aspects over communication.

Firstly, the construction industry is characterised by its complexity and dynamic environments, which pose significant challenges for effective communication. As noted, the coordination problems in construction projects extend beyond mere exchanges among supply chain members; they also involve governing collective actions in unpredictable settings (Formoso & Isatto, 2011). This complexity often focuses on operational and technical issues, sidelining the importance of communication and LAP research. The LAP could be used to govern collective action in lean construction projects by treating language as the primary mechanism for coordination and accountability. The LAP enables project teams to manage commitments through structured conversations rather than relying solely on hierarchical control (Macomber and Howell, 2003). This aligns with lean construction's emphasis on collaboration, flow, and reliable handoffs. By making communication observable and improvable, the LAP offers a

practical and theoretical framework for organising collective action in complex, interdependent project environments (Formoso & Isatto, 2011).

Secondly, the fragmented nature of the construction industry contributes to the limited exploration of the LAP. The sector involves multiple stakeholders, including clients, contractors, and subcontractors, each with distinct communication styles and objectives. This fragmentation can lead to communication breakdowns, as highlighted by those who emphasise that ineffective communication among stakeholders is a significant factor in poor project performance (Ejohwomu et al., 2017). The emphasis on addressing operational challenges often overshadows the need for a deeper understanding of communication processes, resulting in a lack of focused research on LAP. Moreover, the construction industry's historical context has prioritised technical and managerial approaches over communication studies. As Gamil points out, poor communication is a critical issue in construction, leading to cost overruns and project failures (Gamil & Rahman, 2018). However, despite recognising the importance of communication, the industry has not sufficiently explored the theoretical frameworks, such as the LAP, that could provide insights into improving communication practices.

Additionally, integrating technology in construction, such as Building Information Modelling (BIM) and other digital tools (Zhao et al., 2015; He, Tim and Selçuk, 2022; Zhan et al., 2022) has shifted the focus toward technical solutions rather than addressing the underlying communication issues. While these technologies offer potential improvements in collaboration and information sharing, they do not inherently resolve the complexities of human communication that the LAP seeks to address (Hashemi, 2014; Hasan and Rasheed, 2019). The reliance on technology may inadvertently contribute to neglecting the LAP research in favour of more tangible, technical advancements. Therefore, research is needed to address the knowledge gap regarding the language aspects of communication in the construction industry. This will contribute significantly to the existing body of research.

1.3.3 The Significance of the LAP on Improving Communication on Lean Construction Projects

The LAP is crucial to the success of construction projects for several reasons, primarily revolving around enhancing communication, fostering collaboration, and improving project outcomes. The construction industry is inherently complex, involving multiple stakeholders with diverse roles, necessitating effective communication to ensure that all parties are aligned and working towards common goals. Collaboration is a critical aspect of lean construction projects, and projects with a high level of collaboration produce better experiences and outcomes (Edmondson, 2008; He, Tim and Selçuk, 2022). However, teams are typically poorly equipped to collaborate effectively within projects because they often lack the skills to communicate effectively, build trust, and manage moods, which are all critical fundamental skills to collaborate well (Howell and Macomber, 2006; Manu et al., 2015; Long and Arroyo, 2018).

One of the critical contributions of the LAP is its emphasis on the importance of communication in facilitating collaboration among project stakeholders. Highlight that boundary actions—interactions that occur at the interfaces between different project participants—can significantly improve cooperation and communication within construction projects (Gustavsson and Gohary, 2012). By creating social arenas for dialogue and interaction, the LAP encourages sharing ideas and innovations, which can lead to improved project practices and performance. This aligns with the notion that effective communication involves exchanging information and engaging in meaningful interactions that drive project success.

Furthermore, the LAP could potentially help address coordination challenges in complex construction environments. The coordination problem in construction is not limited to managing exchanges among supply chain members but also involves governing collective actions (Formoso and Isatto, 2011). The LAP provides a framework for understanding how language and communication can facilitate this governance, allowing teams to manage the uncertainties inherent in construction projects adaptively. The LAP can help mitigate conflicts and enhance decision-making processes by fostering a shared understanding among stakeholders.

1.3.4 The Application of the Language Action Perspective and the Lean Construction Agenda to Improve Project Outcomes

One of the main objectives of the lean construction agenda is to improve both the experience of delivering projects and their outcomes (Howell and Ballard, 1998; Howell, 1999; Slivon et al., 2010). However, the main focus in the implementation of lean construction practices relied heavily on lean construction tools to modify the behaviours needed to successfully build a collaborative environment on projects (Rooke et al., 2018; Howell, 1999; Fauchier and Alves, 2013; Salam, Killen and Forsythe, 2024). However, we use the LAP to modify how human beings on projects have conversations in which they coordinate action, build trust, and produce positive moods. In that case, we have a better opportunity to create the proper foundation for the lean tools to stand on. This foundational skill-building around commitment-based communication on projects will equip teams with the right skills to collaborate well with the lean construction methodology (Macomber and Howell, 2003; Draper, Howell and Macomber, 2006; Howell and Macomber, 2006; Herrera et al., 2020). There has been limited research into using the LAP to improve lean construction projects beyond lean tools and methods.

1.4 Research Questions

RQ1: How does the Language Action Perspective (LAP) influence communication practices, specifically the clarity of requests, reliability of promises, and coordination of commitments within construction project teams?

RQ2: How does applying the LAP contribute to building trust and improving collaborative performance in lean construction project environments?

RQ3: How can the LAP be used to produce better overall communication within project teams?

1.5 Research Aim and Objectives

The Aim of this study is to investigate the influence of the LAP on advancing the lean construction agenda by improving communication during construction projects.

The specific objectives are:

1. To review the LAP perspective and its influence on communication in project teams.

2. To review interrelationships between the LAP and lean construction agenda, and identify any existing research gaps.
3. To evaluate the relationship between the LAP and trust within project teams and empirically investigate its influence on the successful coordination of commitments.
4. To evaluate the potential contributions of the LAP to advancing the lean construction agenda and assess the effectiveness of applying the LAP as an approach for improving communication in lean construction teams.
5. To develop, evaluate, and propose a framework for deploying the LAP to improve communication amongst construction project teams.

1.6 Scope of Research

This research focuses on two projects in the United States of America. It is limited to two case studies conducted around teaching project teams in each case study the main principles of the LAP. The research focuses on how a deeper understanding of the LAP's core concepts can influence communication effectiveness and trust in projects.

1.7 Gaps in Knowledge Explored and Addressed

Chapters Two and Three demonstrate that despite the growing body of research supporting lean construction as a methodology for improving efficiency and reducing waste, its implementation continues to face persistent challenges, particularly in the areas of trust, communication, and cross-functional coordination. Chapter Three will also examine the existing literature, which focuses on refining specific lean tools and methods, such as the LPS or TVD, but often overlooks the broader social and conversational dynamics that underpin their successful application.

The LAP, which views language as a form of action central to coordinating work and building trust, presents a promising yet underutilised framework for addressing these challenges. While the LAP has been explored in other domains for its ability to enhance communication and accountability, its application in existing literature around lean construction has primarily been limited to improving isolated lean tools and practices. There is a notable absence of research that uses the LAP to examine or improve the overall performance of project teams, particularly in terms of team culture, leadership dynamics, and long-term collaboration.

This study responds to that gap by shifting the focus from tool-specific optimisation to team-level transformation. Rather than using the LAP solely to fine-tune lean methods, the research investigates how foundational communication practices such as making effective requests, negotiating clear commitments, and managing moods can improve the relational environment within which lean construction teams operate.

1.8 Research Methodology

The research design adopted for this study was a combination of action research methods and case study design research, following a qualitative strategy of inquiry. Case studies were chosen to offer an in-depth exploration of specific instances around communication within their real-life projects and in the context of an active project team; this enabled the research to capture data around actual project experiences (Huot, 2018). Action research methods promote a cycle of reflection and action that can lead to meaningful change within project teams (Reedy and King, 2017). A case study design with action research methods was chosen because it emphasises a collaborative approach with the team being researched. This combination of action research methods and case study design research was also selected because it provided a robust methodological approach to engaging with construction project teams on the LAP, driving organisational change and generating practical solutions to complex issues often present in the design and construction world, whilst at the same time generating new knowledge. Qualitative data was collected through interviews and observations, and quantitative data was collected through pre- and post-workshop surveys. Content analysis was utilised to identify patterns and themes from the qualitative data collected from the interviews and observations. Whilst mean scores were computed for the survey data. Content analysis was used to ensure the findings were grounded in participants' real-world experiences in the action case study projects. The researcher and participants worked together to identify problems within the project and explore how new concepts around communication could improve the situation.

1.9 Structure and Organisation of the Thesis

This thesis is structured in nine chapters, as illustrated in Figure 1.1.

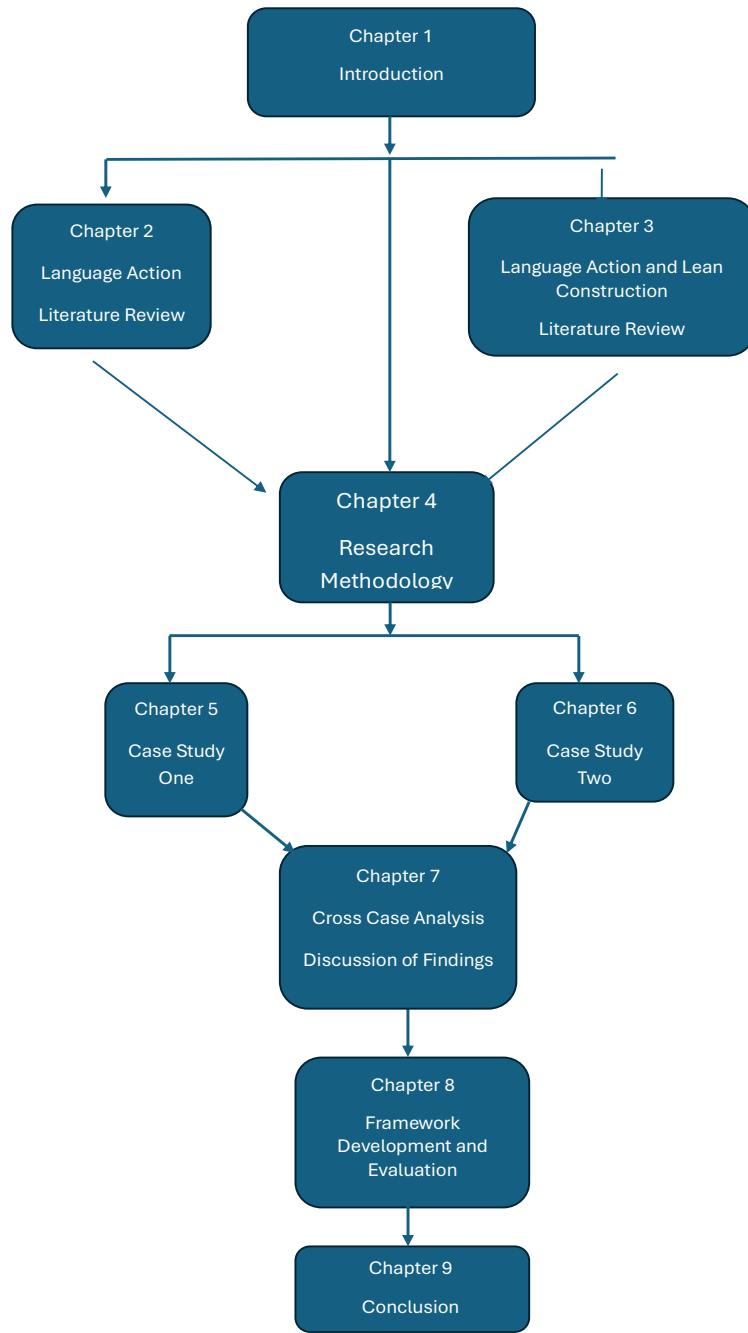


Figure 1.1: Structure of the thesis (author's own)

The following is a summary of the chapter contents:

Chapter 1: Introduction

This chapter presents the background to the thesis and justifies the research based on existing knowledge gaps in the field. This chapter also presents the research questions, aim, objectives, scope and snapshot of the research design. Finally, this chapter outlines the structure of the thesis.

Chapter 2: Language Action Perspective Literature Review

This chapter is the first of two to explain the use of the LAP in other construction-related fields. It explores how the LAP has improved projects and industries in various fields. This chapter explores the history and development of the LAP, from its philosophical beginnings to applying the LAP principles in business and society. It examines a broad field of existing research on using the LAP to improve non-lean construction teams and projects. This chapter contributes to research objectives one and two of the study.

Chapter 3: Language Action Perspective in Lean Construction Literature Review

This chapter explores the use of the LAPs in the lean construction field. In this chapter, the overall aims of lean construction are examined, as well as the potential benefits to the construction industry lean provides. The existing literature is reviewed to see how lean construction and the LAP have impacted safety, collaboration, the reliability of commitments, trust and leadership. It examines how the LAP has been used to develop many lean tools, such as the LPS and other lean tools methods currently used in the field. This chapter also discusses the literature on using the LAP to improve specific lean tools and their adoption by teams within lean construction projects. This chapter contributes towards research objective one, two and three of the study.

Chapter 4: Research Methodology

This chapter discusses and justifies the research design and methodology adopted for the study. The methods of data collection and analysis are also presented, in addition to strategies that were implemented to ensure the reliability and validity of the research. Strategies that were used to

adhere to ethical requirements are also outlined. This chapter contributes towards research objectives two and three of the study.

Chapter 5: Action Case Study One

This chapter presents the findings of the first case study investigation. It begins with an outline of the case study background before discussing findings from themes that emerged from the research questions. This chapter contributes towards research objectives one, two and three of the study.

Chapter 6: Action Case Study Two

This chapter discusses the findings from the second case study and is structured like Chapter Five. This chapter contributes towards research objectives one, two and three of the study.

Chapter 7: Cross Case Analysis and Discussion of Findings

Chapter Seven presents a cross-case analysis and discussion of findings, drawing together the results from the two case studies. The analysis highlights both the similarities and differences in how the LAP influenced trust, communication, clarity of requests, and reliability of promises across the project teams. These findings are interpreted through the lens of existing literature, providing a comparative understanding of the dynamics observed in each case. By situating the case study results within broader theoretical and practical contexts, this chapter establishes the study's contribution to knowledge and contributes toward research objectives one through four.

Chapter 8: Framework Development and Evaluation

Chapter Eight develops and evaluates a framework derived from the findings of the cross-case analysis. This framework integrates the principles of the LAP with lean construction practices to address the challenges of trust, communication, requests, and reliable commitments in project teams. Drawing from both empirical evidence and theoretical insights, the framework provides a structured approach for enhancing team performance and collaboration in construction projects. The evaluation of the framework considers its applicability, strengths, and limitations, offering guidance for practitioners while also contributing to the academic understanding of commitment-based project management. This chapter contributes toward research objectives three and four.

Chapter 9: Conclusion

This chapter presents the research conclusion by summarising the various steps to achieve the research objectives. The study's contributions to theory, methodology, and practice and their practical implications are highlighted. The study limitations and consequent recommendations for further research are finally outlined.

1.10 Summary

This introductory chapter presents the research background and justification for the case studies, which are based on the gaps in current research and knowledge in the LAP and lean construction fields. The chapter also discusses the research questions, aim and objective, and research design before outlining the organisational structure of the thesis. In Chapter Two, the first literature review on the LAP will be presented.

Chapter Two: Language Action Perspective

2.1 Introduction

In this chapter, the LAP is explored to develop a conceptual framework that focuses on how language can be used as a tool for coordinating actions and fostering communication within organisations and teams. Originating from the work of scholars like J.L. Austin, John Searle, and Fernando Flores, the LAP emphasises the performative nature of language, where speaking and communication do not merely describe reality but create new realities. Language and conversations create action, manage commitments, and shape social realities. This literature review delves into how the LAP applies to various industries, particularly construction and project management, where effective communication is paramount to success. The chapter also examines the critical elements of the LAP, including speech acts, conditions of satisfaction (CoS), trust, and team dynamics, and how these influence the performance of high-functioning teams. Through a thorough review of scholarly sources, this chapter aims to demonstrate how the LAP can be leveraged to enhance collaboration, improve team communication, and foster a culture of accountability and trust in project environments. This chapter contributes towards objectives one and two of the study.

2.2 What is the Language Action Perspective

The LAP is a concept that explores the use of language to perform actions or convey intentions. It has implications in various fields, including linguistics, psychology, and cognitive science (Sull and Spinosa, 2007). The LAP is a multidisciplinary concept that examines the dynamic interplay between language and human action, exploring how communication shapes, influences, and organises social reality. Rooted in the broader domain of pragmatics, this area of research transcends the traditional view of language as a static system of symbols. Instead, it focuses on language as a performative act with the power to bring about real-world effects (Flores, 2013). Drawing from insights in linguistics, philosophy, sociology, communication studies, and cognitive science, the LAP seeks to unravel the intricate mechanisms by which language conveys information, constructs social identities, influences decision-making, and orchestrates interactions within various social contexts. (Sull and Spinosa, 2007).

At its core, the LAP builds on the foundational theory of speech acts, advanced initially by philosopher J.L. Austin and later expanded upon by John Searle. The theory posits that language is not solely a medium for describing reality but also functions to accomplish actions and bring about specific consequences (Searle, 1969). Research in this field investigates the diverse array of speech acts, including promises, requests, assertions, and apologies, to understand how speakers use language strategically to achieve their communicative goals, manage interpersonal relationships, and create social norms and structures (McCaffree, 2018).

Fernando Flores is a prominent figure in the LAP field and has significantly contributed to understanding how language is used to perform actions. His work, particularly in collaboration with Terry Winograd, has focused on the role of language in shaping social interactions and organisational dynamics (Suchman, 1993). Flores and Winograd introduced the LAP, which emphasises the performative nature of language and its role in coordinating actions within organisations (Suchman, 1993). One key aspect of Flores' work is the idea that language is not simply a tool for conveying information but a means of enacting and coordinating actions.

According to Flores, language is a form of action that shapes our understanding of the world and influences our behaviour (Suchman, 1993). This perspective challenges traditional views of language as a purely symbolic system and highlights its performative and transformative nature. Flores' work has also explored the relationship between the LAP and organisational power dynamics. He argues that language is a powerful tool for shaping social reality and exerting influence over others (Suchman, 1993). Through speech acts, individuals can influence the actions and behaviours of others, thereby influencing relationships and outcomes. Moreover, the LAP research extends beyond individual interactions, encompassing the study of institutional and organisational communication. By investigating how language shapes and reinforces power structures, decision-making processes, and the construction of collective identities, scholars in this field contribute to understanding social institutions, leadership dynamics, and communication practices within organisations (Solomon and Flores, 2001).

The LAP's significance lies in its ability to illuminate the intricate connections between language and social reality. It offers valuable insights into the complexities of human communication,

social organisation, and the negotiation of meaning. This interdisciplinary field enriches our comprehension of language as a transformative tool that goes beyond conveying information and plays a fundamental role in shaping human agency, behaviour, and the fabric of society itself (Slivon et al., 2010).

2.3 Historical Overview of the Language Action Perspective

The history of the LAP is rooted in exploring language's multifaceted role as a means of communication, expression, and social interaction (Winograd and Flores, 1986). Linguists and philosophers have long been interested in how language shapes human cognition, culture, and society. Early inquiries into the LAP can be traced back to ancient philosophers such as Plato and Aristotle, who grappled with the nature of language and its relationship to thought. The study of pragmatics, which examines how language is used in context and how meaning is conveyed beyond literal interpretation, emerged in the 20th century as a significant development in linguistic theory (Austin, Urmson and Sbisà, 1975; Searle, 1969). The field of pragmatics paved the way for exploring the performative nature of language, where speech acts are seen not merely as descriptive tools but as actions that have real-world consequences. The works of philosophers like J.L. Austin and John Searle in the mid-20th century further advanced the concept of the LAP by introducing the theory of speech acts. Today, the study of the LAP continues to evolve, integrating insights from linguistics, philosophy, sociology, and communication studies to deepen our understanding of language's profound impact on shaping human interactions and social structures (Austin, Urmson and Sbisà, 1975; Searle, 1969; Lash, 2015).

J.L. Austin, a prominent philosopher of language, made significant contributions to understanding performativity and speech acts, which have profound implications for business and various disciplines. His work, particularly his lectures at Harvard in 1955, laid the foundation for the concept of performativity, which has been the subject of extensive debates across various disciplines (Wickert and Schaefer, 2015). Austin introduced the concept of speech acts and emphasised that an utterance can create a new reality, and language is not limited to describing things (Austin, Urmson and Sbisà, 1975). His exploration of speech acts, performative sentences, and performativity has influenced diverse fields, including critical management studies, refugee studies, literary analysis, and political science (Özgür, 2022). His

distinction between happy and unhappy statements and his emphasis on the performative nature of language have been instrumental in shaping the understanding of directive counselling, choice behaviour, and political dissent (Mavrommatis, 2015). Furthermore, his philosophical insights have influenced the study of literature, geography, and historical methods, demonstrating the pervasive impact of his work across disciplines (Barry, 2015). Therefore, Austin's contributions to understanding language action and performativity have transcended disciplinary boundaries, shaping scholarly discourse and practical applications in various domains, including business and organisational studies (Lash, 2015).

Another major contributor to the development of the LAP was John Searle, a distinguished philosopher known for his significant contributions to the philosophy of mind, language, and social ontology. Searle was a student of J.L. Austin's at Oxford and went on to be a philosopher of mind and language at UC Berkeley for over five decades (McCaffree, 2018). Searle's work built on Austin's early work and continued to define speech acts further. It has also been pivotal in popularising the concept of performativity (Lash, 2015). His exploration of intentionality and the intentionality-relative features of the world has been a subject of extensive philosophical inquiry (Gouvea, 2016). Searle's writings have also sparked debates on institutional facts and social ontology, contributing to the broader interpretation of the LAP as a social phenomenon (Bauwens, 2018). Furthermore, Searle's philosophical insights have influenced interdisciplinary studies, including sociology, epistemology, and political science, demonstrating the LAP's pervasive impact across various domains and industries (Rust, 2021). Overall, John Searle's contributions to philosophy have shaped scholarly discourse and practical applications in diverse fields, making him a highly influential figure in contemporary philosophy (Lash, 2015).

The history of the LAP also owes significant contributions to the work of Fernando Flores, a Chilean philosopher and former politician. In the 1980s, Flores collaborated with John Searle to expand on the theory of speech acts, further developing the concept of the importance of language in how work gets done in teams and the business environment. This research (Flores, 1982) delved into the notion of language as a form of action, highlighting how language not only describes reality but also constitutes it in business communication and processes. He emphasised

that language could create and transform social realities, making it a potent force in shaping individual behaviour and collective action patterns.

Flores worked with Terry Winograd to bring the LAP into computer software design. They used the LAP to describe how humans interacted with computers as a series of requests and promises (Winograd and Flores, 1986). Flores invented the concept of "conversations for action" and, with it, proposed a new paradigm for designing computer systems to better align with human communication patterns and enable more effective collaboration (Winograd and Flores, 1986). Although rooted in computer systems, the idea that conversation creates action would become the basis for a new approach to business management and process mapping known as commitment-based management (Sull and Spinoza, 2007).

Flores's interdisciplinary approach, which combined insights from linguistics, philosophy, and cognitive science, has profoundly impacted the study of the LAP. His work has inspired scholars and researchers to explore how language shapes human agency, social systems, and organisational dynamics, making him a pivotal figure in advancing our understanding of the role of language in human affairs (Flores, 2020).

2.4 Speech Acts and Conditions of Satisfaction (CoS)

Austin identified two classes of speech utterances: constatives and performatives (see table 2.1). These utterances laid the foundation for understanding illocutionary acts, which are acts performed in saying things. These illocutionary acts were an early precursor to the development of the speech acts that were developed by Flores (see Table 2.3) as part of the LAP (Austin, Urmson, and Sbisà, 1975).

Table 2.1: Austin's classification of utterances (Austin, 1959)

Utterance	Definition
Constatives	Statements that can describe a situation as true or false.
Performatives	Perform an action by being spoken in the right situation. These do not describe or report but instead create action.

Speech acts, as originally proposed by Austin (Austin, 1959), are actions performed through performative utterances (see table 2.1) involving elocutionary, illocutionary, and perlocutionary acts (see table 2.2). John Searle, a prominent figure in the field of speech act theory (SAT), has made significant contributions to the understanding of illocutionary acts and their classification. He introduced a taxonomy of illocutionary acts, categorising them into different types such as assertive, directive, commissive, expressive, and declarative acts (Searle, 1969). As seen in Figure 2.1 these classifications provide a framework for understanding the diverse functions of speech acts in communication, encompassing acts that commit the speaker to the truth of a proposition, acts intended to get the hearer to do something, acts that commit the speaker to a future course of action, acts expressing the speaker's attitudes and emotions, and acts that bring about a change in the external reality (Searle, 1969). Searle's work has been foundational in shaping the understanding of how language is used to perform actions and convey meaning, providing a comprehensive framework for analysing the pragmatic and functional aspects of language use in various communicative settings (Lash, 2015).

Table 2.2: Definition of Austin's speech act classifications (Austin, 1959)

Speech Act	Definition
Locutionary Act	The act of saying or producing something meaningful
Illocutionary	Saying something is itself a form of doing something.
Perlocutionary	The effect or outcome that your utterance has on the listener is how it makes them think, feel, or act.

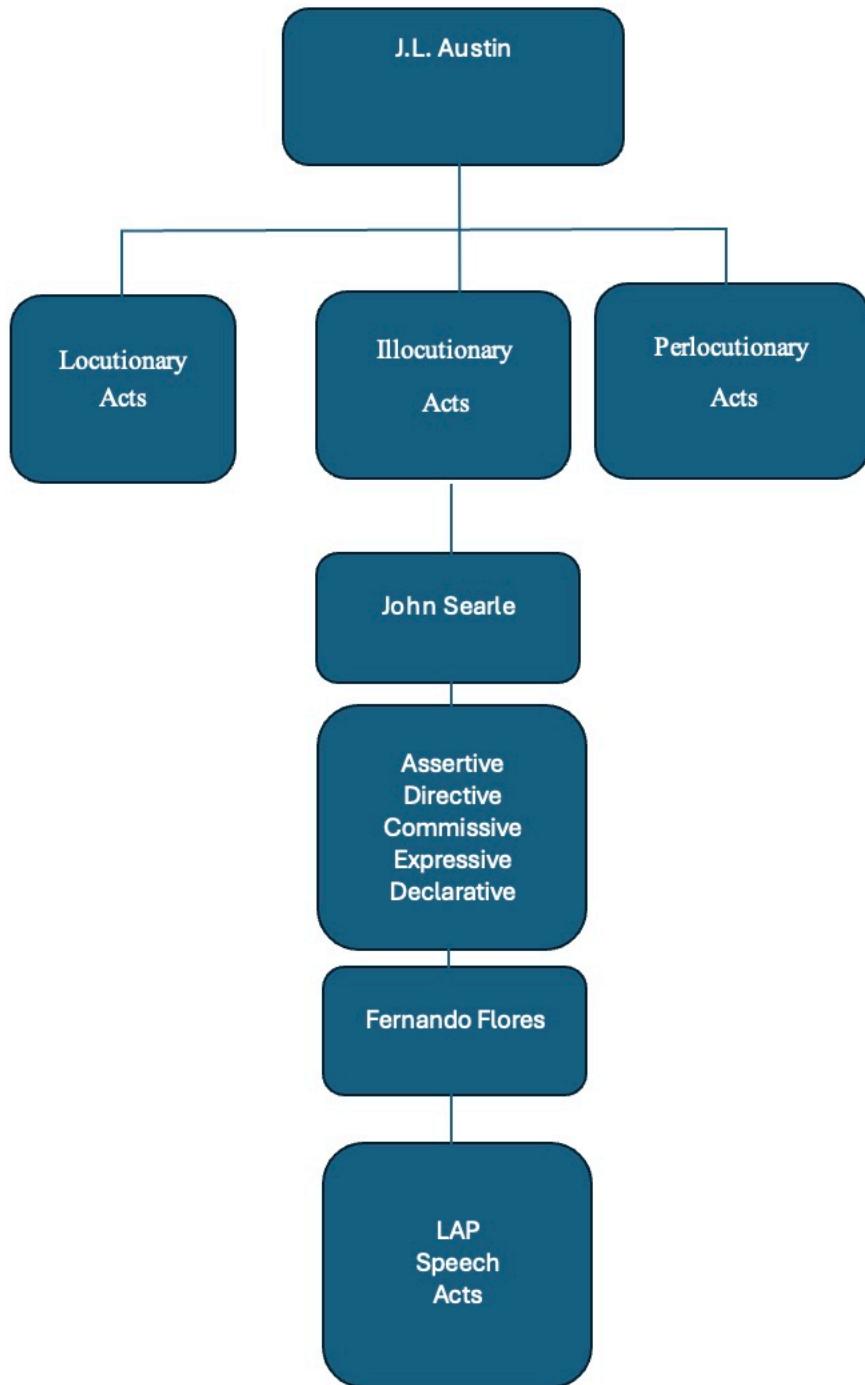


Figure 2.1: Evolution of the LAP speech Acts

Speech acts that are part of the LAP, as developed by Flores from the work of Searle and Austin in Figure 2.1 and as shown in Table 2.3, are essential in facilitating effective communication by enabling individuals to convey intentions, express emotions, and influence the actions of others

(Suriani, 2022). Speakers can coordinate actions and commitments through illocutionary acts, such as directives and commissives, thus shaping the course of interactions and transactions (Bahing, Emzir and Rafli, 2018). The speech acts in Table 2.3 became the foundational elements of commitment-based management, and the conversations for action business processes developed by Fernando Flores (Sull and Spinoza, 2007).

Table 2.3: Elements of speech acts (Flores, 2013)

Speech Acts	Action	Requirements	Example
Assessments	Assessments open or close a space for action to occur or some new future to be brought about	Assessments are automatic and represent our judgements, opinions and interpretations	"It is cold in this room."
Assertion	The speaker uses an assertion to provide grounding for an assessment	The speaker can provide evidence of the assertion	"The thermostat reads 72 degrees."
Declare	The speaker opens a new world of possibility for action	The person making the deceleration has the authority from the community to make the deceleration	A CEO declares, "We will cut our time to market for new products by 50% next year."
Request	A speaker asked a listener, who is a potential performer, to take an action to address a concern	The necessary elements of a request are present, sufficient for a commitment to be made	"Can you drive me to the airport tomorrow in time for my flight?"
Offer	A speaker, or performer, offer, or conditionally promises, to take care of something that the listener is concerned about	The necessary elements of an offer are present, sufficient for the offer to be accepted	"I can provide you with all the marketing data before the meeting tomorrow."
Promise	A commitment to take care of something that the speaker is concerned about	Same as an offer	"I will deliver the supplies to you tomorrow."

Additionally, speech acts aid in interpreting communicative intentions, allowing for the successful exchange of information and the negotiation of agreements (Nicolle, 2022). The pragmatic analysis of speech acts reveals their significance as the smallest unit of language communication, emphasising their role in achieving clarity and precision in conveying meaning (Prihodko, 2018). Furthermore, the study of speech acts in various communicative contexts, such as presidential speeches and class interactions, underscores their importance in shaping communicative functions and achieving specific communicative goals (Cresti, 2020). Therefore,

the speech acts in Table 2.3 serve as a fundamental tool in communication, enabling individuals to coordinate actions, influence decision-making, and achieve effective interaction and collaboration in diverse contexts, including business communication. Speech acts are crucial in business communication because they convey explicit information and implicit intentions and influence the interlocutor (Smeltzer, 1998). In the context of corporate standards, professionals, such as flight attendants, utilise speech acts to demonstrate professional qualities and provide necessary services, thereby contributing to maintaining a positive corporate image (Hrushcheva, 2020).

Performative speech acts in business communication to convey information and initiate necessary actions, highlighting their role in driving business processes and transactions (Ana et al., 2020). As a pragmatic theory, speech act theory emphasises that words convey meaning and perform actions, shaping business interactions and negotiations (H. Saleh, 2019). Moreover, top corporate communications officials are responsible for building the company's image, interacting with stakeholders, and achieving business objectives, underscoring the practical application of speech in achieving organisational aims (Tsymbalenko et al., 2020).

Additionally, indirect speech acts in business announcements reveal businesses' intentions, contributing to a positive corporate image and fostering solidarity, particularly in challenging and dynamic coordination situations (Wongthai, 2022). Therefore, a comprehensive understanding of speech acts is essential for achieving clarity, precision, and effectiveness in business communication, ultimately contributing to successful business interactions, stakeholder engagement, and organisational success. The CoS in the LAP refers to the specific criteria or requirements that must be fulfilled for an individual or a group to feel satisfied or fulfilled in language-based interactions.

These conditions are integral to understanding and assessing satisfaction levels in communicative exchanges and can serve as a guide for enhancing overall satisfaction and well-being in various domains. In the LAP, CoS are essential for evaluating the effectiveness of language actions, such as requests, promises, and assertions, and ensuring that the intended outcomes are achieved. These conditions can encompass factors such as clarity of

communication, alignment with shared goals, and fulfilment of expectations, all of which contribute to the overall satisfaction and success of language-based interactions within the LAP framework (Flores, 2013). Therefore, understanding and addressing the CoS is crucial for fostering effective communication and achieving desired outcomes in various contexts.

The CoS are closely connected to speech acts, as they form the basis for evaluating the effectiveness and success of communicative interactions. CoS represent the embodied nature of language comprehension, indicating that the motor system plays a role in understanding speech acts by making evident what mutual success looks like in a transaction on a human basis (Fischer and Zwaan, 2008).

For effective communication to occur, it is critical that felicity conditions in speech acts are fulfilled, underscoring the significance of meeting specific criteria for successful communicative actions (Hadiati, 2019). The CoS are integral to the successful performance of speech acts, as they guide and evaluate the effectiveness of communicative interactions. Given the interconnectedness of these concepts, it is evident that the CoS play a crucial role in the successful performance of speech acts, as they guide and evaluate the effectiveness of communicative interactions. Therefore, understanding and addressing the CoS is essential for fostering effective communication and achieving desired outcomes in various contexts (Visser, 2017).

The CoS are intricately connected to speech acts, as they form the basis for evaluating the effectiveness and success of communicative interactions. The work emphasises the social nature of language and its grounding in the experience of action, highlighting the interconnectedness of language, action, and social cognition (Gallese, 2008). Additionally, speech acts' perlocutionary goals and consequences indicate the importance of achieving specific outcomes in communicative exchanges (Walton, 2014). Furthermore, this emphasises the cooperative nature of information agents, shedding light on the role of language and action in initiating necessary transactions (Weigand, Verharen and Dignum, 1998). The CoS are integral to the successful performance of speech acts, as they guide and evaluate the effectiveness of communicative

interactions. Therefore, understanding and addressing the CoS is essential for fostering effective communication and achieving desired outcomes in various contexts.

CoS are crucial in business communication as they serve as the benchmarks for evaluating the effectiveness and success of communicative interactions. Speech acts underscores the impact of employee satisfaction on business outcomes, highlighting the significance of meeting specific conditions for successful business performance (Harter, Schmidt and Hayes, 2002). The role of speech acts in communication strategy in improving customer satisfaction underscores the importance of meeting specific conditions for successful customer interactions. CoS are integral to successful business communication, as they guide and evaluate the effectiveness of communicative interactions, ultimately impacting business outcomes and relationships (Flores, 2013).

2.5 Commitment-based Management and Action Workflow Loop (AWL)

Flores introduced the concept of commitment-based management, developing a framework to manage promises and outcomes instead of activities in the business and work domains (Medina-Mores et al., 1992). This framework has been instrumental in understanding and managing organisational commitment, which is crucial for achieving strategic objectives and enhancing employee engagement.

Commitment management is closely intertwined with organisational culture, as it binds individuals to the organisation's values and goals. The commitment-based approach has significantly contributed to the understanding and implementation of commitment-based management practices in organisations, ultimately influencing employee engagement, organisational culture, and strategic outcomes (Winograd and Flores, 1986).

Commitment-based management is a critical approach emphasising the significance of fostering and managing organisational commitment to achieve strategic objectives and enhance employee engagement. The management of commitment is closely intertwined with corporate culture, as it is a commitment that binds individuals to the organisation's values and goals (Singh, 2007).

Human resource management practices are pivotal in influencing employees' commitment, impacting organisational performance and retention (Hashim, 2010). High-commitment human resource management practices are commonly utilised to enhance organisational commitment and performance, particularly in small and medium-sized enterprises (Ling and Ampongstira, 2021). However, managers often face a control-commitment dilemma, highlighting the complexities of balancing control mechanisms with fostering commitment within organisations (Bijlsma-Frankema and Koopman, 2004). Moreover, commitment-based management extends beyond employee engagement and retention. It also influences customer loyalty and complaint management, underscoring its multifaceted impact on organisational success (Fullerton, 2003).

Additionally, commitment-based management has been linked to talent management strategies, work engagement, and risk management in various organisational contexts, further emphasising its broad and pervasive influence on organisational dynamics (Jin, Zhang, and Yang, 2012). Therefore, commitment-based management is a multifaceted approach that encompasses multiple aspects of organisational functioning, including human resource management, customer relations, and strategic decision-making, ultimately contributing to organisational success and sustainability.

The AWL is a key piece of commitment-based management. The AWL is a fundamental transaction in business processes, representing a communicative pattern consisting of consecutive transactions aimed at reaching an agreement about the execution of an action and the result of that execution (Flores, 2013). This loop, depicted as a cycle of unidirectional actions, is crucial in fulfilling predefined goals, such as customer satisfaction. It is an essential component in business process modelling, as it ensures that communication loops are complete and closed, contributing to the legitimacy checking in communicative workflow design. Furthermore, the AWL is integral to goal-driven conversations and the negotiation and enactment of contracts within business networks, emphasising its significance in facilitating effective communication and agreement within organisational contexts (Flores, 2013).

The AWL in Figure 2.2 is closely connected to commitment-based management, facilitating effective communication, negotiation, and agreement within organisational contexts. As a

communicative pattern, the AWL plays a crucial role in reaching agreements about the execution of actions and the results of that execution, which is integral to commitment-based management. The AWL's role in goal-driven conversations, negotiation, and enactment of contracts within business networks aligns with the principles of commitment-based management, which emphasises fostering and managing organisational commitment to achieve strategic objectives and enhance employee engagement (Bhatnagar, 2007).

The AWL's contribution to legitimacy checking in communicative workflow design and its role in facilitating effective communication and agreement within organisational contexts. This aligns with the objectives of commitment-based management, which aim to bind individuals to the organisation's values and goals (Flores, 2013).

Therefore, the AWL is a foundational element in business processes, supporting the coordination of activities and achieving predefined objectives, which are central to commitment-based management (Singh, 2007). Additionally, the AWL's role in business process modelling and its connection to information systems models further underscores its significance in supporting commitment-based management practices within organisations (de Moor and Weigand, 2005).



Figure 2.2: Action workflow loop (Flores, 2013)

The CoS play a crucial role in the action workflow loop seen in Figure 2.2, serving as benchmarks for evaluating the effectiveness and success of communicative interactions. CoS are critical in business relationships and are vital to fostering successful partnerships (Flores, 2013).

Additionally, the felicity conditions of speech acts underscore the significance of meeting specific criteria for successful communicative actions (Searle, 1969).

2.6 The Need for a Language Action Perspective

The LAP plays a crucial role in project settings, as it performs actions, conveys intentions, and coordinates activities within project teams. The LAP allows stakeholders to communicate their ideas, negotiate agreements, and align their actions toward a shared strategic direction. Using language effectively, project teams can articulate their vision, set goals, and mobilise resources to achieve strategic objectives (Sull and Spinosa, 2007).

Language activity plays a significant role in the co-construction of knowledge and the successful implementation of project tasks (Acar and Kayaoglu, 2020). Effective communication and language use are crucial for teams to judge the adequacy of available information, choose appropriate strategies, and establish a supportive project infrastructure (Pich and De Meyer, 2002). The LAP facilitates decision-making, understanding of interpersonal relationships, and team efficacy (Braun et al., 2013). It also influences team learning, knowledge collaboration, and job satisfaction (Braun et al., 2013). Using language in project teams can enhance learning, promote competency development, and strengthen the connection between team members (Braun et al., 2013). Moreover, the LAP creates a collaborative culture, fosters effective team leadership, and influences team performance (Krancher, Dibbern and Meyer, 2018).

Furthermore, the LAP is essential for effective leadership and employee engagement within project teams. Research has shown that the language used within an organisation can influence individuals' sense-making of leadership and conversational repertoire (Jepson, 2010). Language shapes the boundaries of communication and affects how leaders and employees interact, collaborate, and make decisions.

Effective use of the LAP can foster a shared understanding of a team's goals, enhance team member motivation, and facilitate effective teamwork. The LAP, as proposed by Fernando Flores, emphasises the performative nature of language and its role in coordinating actions within organisations (Shishkov, Dietz and Liu, 2006). This perspective highlights the importance

of language as a tool for enacting and shaping social reality. By understanding the power of the LAP, project teams can leverage it to create a positive organisational culture, enhance employee satisfaction, and improve overall performance. The LAP also plays a crucial role in project team interactions and negotiations. Effective communication with other team members is essential for building relationships, understanding their needs, and delivering value.

The LAP enables businesses to convey their value proposition, address customer concerns, and build trust. In negotiations, the LAP allows parties to express their interests, negotiate terms, and reach mutually beneficial agreements (Sull and Spinosa, 2007).

Effective communication is crucial for the success of project teams, as it facilitates collaboration, coordination, and knowledge sharing among team members (Cleary, Owen and Koskela, 2008). The LAP plays a significant role in project team communication by shaping interactions, clarifying expectations, and fostering a shared understanding of goals and tasks (Winograd and Flores, 1986). The LAP theory, as developed by Flores, emphasises the role of language in shaping social reality and facilitating effective communication and coordination within organisations (Edmondson, 1999). The LAP improves psychological safety in work teams and positively impacts learning behaviour and team effectiveness (Edmondson, 1999). Psychological safety, closely related to the LAP, refers to the shared belief that team members can speak up, take risks, and express their ideas without fear of negative consequences (Edmondson, 1999). This fosters open and honest communication, enabling team members to engage in constructive dialogue and learn from each other's perspectives.

Effective team communication is essential for overcoming challenges and achieving project goals and plays a critical role in leadership, communication, and conflict management training in project teams (Edmondson and Nembhard, 2009). They highlight the importance of effective communication in overcoming challenges and realising team benefits, such as project management skills, broad perspectives, and expanded social networks (Edmondson and Nembhard, 2009). The LAP facilitates effective communication within project teams, enabling team members to express their ideas, provide feedback, and resolve conflicts.

Technological advancements also influence the use of the LAP in project team communication. LAP principles can improve how social media-enabled communication awareness enhances project team performance (Krancher, Dibbern and Meyer, 2018). Communication awareness features, such as displaying all internal communications in one place, can improve communication effectiveness and efficiency during action episodes in project teams (Krancher, Dibbern and Meyer, 2018). The LAP and communication awareness tools enable team members to stay informed, coordinate their actions, and make timely decisions. The LAP includes speech acts, trust, psychological safety, moods and listening (Flores, 2013).

2.7 Language Action Perspective and High-Performing Teams

A high-performing team is a group of individuals who consistently meet or exceed expectations, achieve exceptional results, and demonstrate superior performance compared to other teams in similar contexts and conditions (Mathieu et al., 2008). High-performing teams are purposeful, social, human-oriented, technical, and systematic in nature (Vries, K.C. and Visser, 2021). They exhibit characteristics such as clear objectives, effective leadership, defined focus, alignment, interaction with external entities, knowledge and skills, individual needs, measures of performance, and group culture (Vries, K.C. and Visser, 2021).

Effective communication and the LAP are critical components of high-performing teams. The LAP refers to using language to coordinate and synchronise team interactions (Vries, K.C. and Visser, 2021). Effective language promotes open communication, trust, mutual respect, and collaboration within the team (Vries, K.C. and Visser, 2021). It enables team members to exchange information, clarify expectations, make decisions collectively, and learn from each other's perspectives and experiences.

Furthermore, high-performing teams exhibit effective teamwork behaviours, such as trust, cooperation, collaboration, and mutual support (Pei et al., 2020). Effective language action facilitates these behaviours by promoting transparent and respectful communication, active listening, and conflict resolution (Pei et al., 2020). It enables team members to build strong relationships, establish shared understanding, and work together towards common goals (Pei et al., 2020). In addition, high-performing teams demonstrate effective leadership, such as setting

clear expectations, providing support and guidance, empowering team members, and fostering a positive team culture. (Qureshi and Dhaliwal, 2016)

Effective language action is crucial in leadership communication, enabling leaders to articulate their vision, motivate team members, and facilitate effective decision-making and problem-solving (Qureshi and Dhaliwal, 2016). Overall, the connection between the LAP and high-performing teams is evident. Effective language action promotes open communication, psychological safety, teamwork behaviours, and effective leadership, all of which contribute to high-performing teams' exceptional performance and success. Understanding and leveraging the connection between the LAP and high-performing teams can help organisations cultivate and sustain a culture of excellence and achievement.

The LAP contributes to team learning and adaptability, which are critical factors in high-performing teams (Edmondson, 2002). Effective language action promotes reflection, insight, and action for change, enabling teams to engage in radical and incremental learning, adapt to changing environments, and produce high-quality outcomes (Edmondson, 2002). The LAP in team communication refers to using language to coordinate and synchronise the content and process of team interactions (Clark, 1991). It involves coordinating information, beliefs, assumptions, and actions among team members to communicate effectively and collaborate (Clark, 1991).

Team reflexivity about communication is another aspect of the LAP that can improve team performance. Reflexivity involves critical awareness of how communication influences team dynamics, relationships, and outcomes (Hedmnan-Phillips and Barge, 2016). By reflecting on their communication patterns and processes, teams can identify areas for improvement, enhance coordination, and adapt their communication strategies to meet their goals better (Hedmnan-Phillips and Barge, 2016).

Furthermore, team size, task type, and cultural diversity (Nikolaeve and Synekop, 2020) influence language action in team communication. Larger teams may require more explicit coordination and communication to ensure effective collaboration. At the same time, task-

specific language and terminology may need to be clarified and understood by all team members (Nikolaeve and Synekop, 2020). All of these have implications for designing a LAP-based communication strategy specific to a team's needs and conditions.

2.8 Language Action Perspective and Psychological Safety

Psychological safety refers to the shared belief within a team that individuals can express themselves, take interpersonal risks, and share their thoughts and ideas without fear of negative consequences (Edmondson, 1999). It is a critical aspect of team dynamics as it creates an environment of trust, openness, and mutual respect. It enables team members to feel comfortable and safe in expressing their opinions, asking questions, and making mistakes (Kahn, 1990). It encourages constructive feedback and open dialogue, allowing teams to address challenges and make informed decisions (Kahn, 1990).

Psychological safety also reduces the fear of failure, enabling team members to take calculated risks and explore new ideas, increasing creativity and problem-solving capabilities (Edmondson, 2008). Effective communication and the LAP are critical factors in fostering psychological safety within project teams. Language action that promotes active listening, empathy, and non-judgmental responses creates an atmosphere of psychological safety, signalling that team members' contributions are valued and respected (Kahn, 1990).

Research has shown that psychological safety positively influences team learning, knowledge creation, and performance in project teams (Cauwelier, 2019). It facilitates information sharing, learning behaviours, and engagement among team members, leading to higher satisfaction and commitment levels (Cauwelier, 2019). Psychological safety also enables teams to manage conflicts effectively, leverage diverse perspectives, and adapt to changing circumstances, enhancing their ability to navigate complex projects (Cauwelier, 2019). Psychological safety is critical in supporting project teams, enabling them to collaborate, learn, and achieve their goals effectively (Buvik and Tkalich, 2022).

The LAP is crucial in supporting psychological safety by promoting effective communication and creating a climate of inclusivity and respect within the team. When team members engage in

the LAP, which encourages active listening, empathy, and nonjudgmental responses, it fosters psychological safety by signalling that their contributions are valued and respected (Kahn, 1990). Effective language action also involves providing constructive feedback, encouraging diverse perspectives, and promoting collaboration, all of which contribute to a psychologically safe environment (Kahn, 1990).

Effective communication enables team members to engage in constructive dialogue, share diverse perspectives, and learn from each other's experiences (Edmondson and Lei, 2014). The LAP also contributes to developing high-quality relationships, which are essential for psychological safety (Carmeli and Gittell, 2009). By promoting inclusive and respectful communication, the LAP also helps to build trust and mutual support among team members, creating a foundation for psychological safety (Edmondson, 2002).

2.9 Language Action Perspective and Trust in Teams

Trust is a psychological state that determines the acceptance of positive expectations regarding the intentions and behaviours of other parties and is crucial in project teams (Manu et al., 2015). Trust fosters effective communication and collaboration among team members (Edmondson, 1999). Trust in project teams refers to the belief and confidence that team members have in each other's reliability, competence, and integrity within the context of project work (Cheng et al., 2021). It involves relying on and depending on team members' actions, decisions, and contributions (Rousseau et al., 2012).

Trust in project teams is crucial for effective collaboration, communication, and coordination, as it fosters a positive team climate and enhances cooperation (Rousseau et al., 2012). Trust enables team members to feel comfortable sharing information, taking risks, and relying on each other's expertise, which leads to improved team performance and project outcomes (Mayer, Davis and Schoorman, 1995). When team members trust each other, they are more likely to share information, ideas, and concerns openly, leading to better decision-making and problem-solving (Rousseau et al., 2012).

Trust also plays a role in managing conflicts, facilitating knowledge sharing, and promoting effective decision-making within project teams (McAllister, 1995). Building and maintaining trust in project teams requires open communication, transparency, and consistent demonstration of trustworthiness by team members (McAllister, 1995). Trust in project teams is influenced by factors such as interpersonal relationships, shared goals, and past experiences of reliability and dependability (Dumitru and Mittelstadt, 2020).

Trust also promotes cooperation and teamwork, as team members feel comfortable relying on each other and working towards shared goals (Rousseau *et al.*, 2012). Trust enhances project performance by facilitating knowledge sharing and learning (Mayer, Davis and Schoorman, 1995), reducing conflicts, improving coordination, and enabling smoother project execution (McAllister, 1995). It contributes to a positive project climate and team satisfaction (Agbejule, Rapo and Saarikoski, 2021).

Conversations are crucial in building trust in various contexts (Mayer, Davis and Schoorman, 1995). Effective communication and dialogue are essential for establishing understanding, credibility, and reliability and fostering trust in interpersonal relationships (Mayer, Davis and Schoorman, 1995). Conversations provide an opportunity to build relationships, create cohesion, and develop a sense of community, all contributing to trust (McAllister, 1995). Open and transparent communication in conversations enhances credibility and fosters trust (Mayer, Davis and Schoorman, 1995). Ongoing trust is nurtured through dialogue, allowing continued interaction and collaboration (Mayer, Davis and Schoorman, 1995). Conversations also bridge knowledge gaps, facilitate learning, and improve collaboration, increasing participant trust (Egea, 2006).

Trust-building conversations involve active listening, empathy, and the exchange of personal preferences, all of which contribute to relationship development and trust (Higashinaka, Dohsaka and Isozaki, 2008). Trust in the context of the LAP can be examined through different domains in Table 2.4. When people report distrust, they are expressing assessments of trust or mistrust in distinct domains.

Table 2.4: Domains of trust (Solomon and Flores, 2001)

Domain	Description
Competence	A person is capable in a particular domain and builds the assessment by recurrently performing to those standards.
Reliability	A person is capable of reliable and timely performance and builds the assessment by recurrent and rigorous management of promises.
Sincerity	A person is serious when making a commitment and does not make a promise that s/he does not intend to fulfil.
Engagement	A person is committed to the future well-being of customers and possibilities in the collaboration. And the person will go above and beyond when called for to demonstrate that care.

When team members trust each other, they experience a sense of psychological safety, which promotes a supportive and collaborative work environment (Agbejule, Rapo and Saarikoski, 2021). This, in turn, leads to higher levels of job satisfaction, commitment, and engagement among team members (Farid, 2021).

2.10 Language Action Perspective and Moods

Moods refer to the emotional states or dispositions that individuals experience and express. They are subjective and can fluctuate throughout the day or over extended periods. Moods differ from emotions, as they are typically less intense and longer-lasting. Moods can influence one's overall outlook, perception, and behaviour, shaping how individuals interpret and respond to various situations. They can be influenced by internal factors such as thoughts, beliefs, and physiological states, as well as external factors such as environmental conditions and social interactions.

Moods can significantly impact individuals' well-being, relationships, and overall functioning (Flores, 2016).

Martin Heidegger's philosophical ideas have profoundly influenced the understanding of moods. Heidegger's concept of mood, or "Befindlichkeit," is central to his philosophy and is intricately connected to his exploration of human existence and the nature of being. Heidegger's phenomenological approach emphasises the significance of moods as a fundamental aspect of human experience, shaping our understanding of the world and our interactions with moods (McKenzie, 2008). Heidegger's view of moods as constitutive of human existence sheds light on

the profound influence of his philosophy on the understanding of mood and affectivity (Boss, 2015). Moods are constitutive of what it means 'to be' human, and moods affect how humans interact (McKenzie, 2008).

Emotions are typically intense, brief, and specific reactions to specific events or stimuli (Ekman, 1992). Distinct physiological responses and facial expressions often characterise them (Ekman, 1992). Emotions are considered to have a biological basis and are believed to be universal across cultures (Ekman, 1992).

In contrast, moods are more general and long-lasting states of affective experience (Watson and Tellegen, 1985). Moods are less intense than emotions and can persist for hours, days, or even longer (Watson and Tellegen, 1985). They are not necessarily tied to specific events or stimuli and can be influenced by various internal and external factors (Watson and Tellegen, 1985). Moods are often described along two dimensions: positive affect and negative affect (Watson and Tellegen, 1985). While emotions are more focused and reactive, moods are broader and can influence one's overall outlook and behaviour over an extended period (Russell, 2003).

On the other hand, feelings are states of subjective experience that arise in response to specific events or stimuli (Russell, 2003). Feelings are often associated with emotions, which are intense, brief, and specific reactions to particular events or stimuli (Ekman, 1992). Feelings can be attributed to a cause and are part of the broader experience of core affect, which influences perception, cognition, and behaviour (Russell, 2003).

Leaders' positive moods could influence team performance directly, and speech functions in mood types can impact team interactions. The influence of speech acts on team moods suggests that individuals' moods are influenced by interactions with team members who act as 'mood carriers' for the team (Flores, 2016). Moods can have a significant influence on team performance. Positive moods among team members and leaders have been associated with improved team performance (Chi, Chung and Tsai, 2011). Positive moods can enhance team cooperation, coordination, and positive perceptions of task performance (Tang and Naumann,

2016). They can also contribute to increased team effort, persistence, and creativity (Totterdell, 2000).

On the other hand, negative moods have been found to negatively impact team processes and performance (Jordan, Lawrence and Troth, 2006). Negative moods can lead to decreased prosocial behaviour, lower implementation efficiency, and a stronger focus on relationship dynamics than task performance (Grawitch et al., 2003). They also influence team members' moods, affecting group affective tone and subsequent team performance (Sy, Côté and Saavedra, 2005). The influence of moods on team performance highlights the importance of managing and fostering positive moods within teams to enhance collaboration, productivity, and overall success.

Effective linguistic action can contribute to positive moods and team performance (Long and Arroyo, 2018). Conversely, the speech or moods of individuals and the environments in which they operate can impact communication effectiveness and team performance (Long and Arroyo, 2018). There is a connection between moods and the LAP, as moods can influence language processing, comprehension, and communication. Understanding the interplay between moods and the LAP can provide insights into how emotions and linguistic factors interact in various contexts. Mood can significantly impact cognitive skills and performance, including listening abilities. Additionally, there is an automatic transfer of mood between individuals, suggesting that mood can influence recognition performance (Neumann and Strack, 2000).

2.11 Language Action Perspective and Listening

Listening refers to receiving and comprehending spoken language or auditory information. It plays a crucial role in the field of communication and language learning (Gilakjani and Ahmadi, 2011). Effective listening involves actively engaging with the speaker, processing and interpreting the information and constructing meaning by interpreting what was heard (Gilakjani and Ahmadi, 2011). It requires attention, focus, and extracting relevant information from the auditory input (Gilakjani and Ahmadi, 2011). Listening is a complex skill that various factors, including metacognitive awareness, motivation, and listening strategies, can influence (Bozorgian, 2014). It is a fundamental language skill essential for effective communication and

language acquisition (Gilakjani and Ahmadi, 2011). Effective listening skills are necessary for understanding and responding to the language used in communication, enabling individuals to engage in meaningful language action (Zhu, Li and Jankowicz-Pytel, 2020).

The LAP and listening are connected in their interdependence for effective communication. To engage successfully in language action, individuals must actively listen to the message's others convey (Zhu, Li and Jankowicz-Pytel, 2020). Effective listening involves actively processing and interpreting the information received, constructing meaning, and responding appropriately. The LAP and listening are intertwined in coordinating content and processing information during communication (Clark, 1991). Speech acts are closely connected to listening as they form the basis of communicative interactions and influence the comprehension and interpretation of verbal messages. Performative listening is critical to effective communication and is essential to fulfilling duties and creating relationships (Srader, 2015).

The role of the LAP in understanding how utterances can be used to achieve actions indicates the influence of speech acts on communicative exchanges and listening. Furthermore, the role of speech acts in pragmatics is that one learns the utterances or utterances of a person against their interlocutor, underscoring the interconnectedness of speech acts, language comprehension and listening. Speech acts are intricately connected to listening, as they shape the nature of communicative exchanges and influence the understanding and interpretation of verbal messages. Therefore, understanding speech acts is essential for comprehending their influence on listening and communicative interactions (Hanna and Richards, 2019).

2.12 Towards a Broader Perspective on Language Action

From the foregoing discussions, the foundation of the LAP reflects the narrower views on it, comprising speech acts, CoS, and AWLs, which are the performative aspects of speech. However, the context within which speech occurs should arguably be considered as an integral part of the LAP because it influences the performative aspects of language, but also, at the same time, can be an outcome, as shown in Figure 2.3.

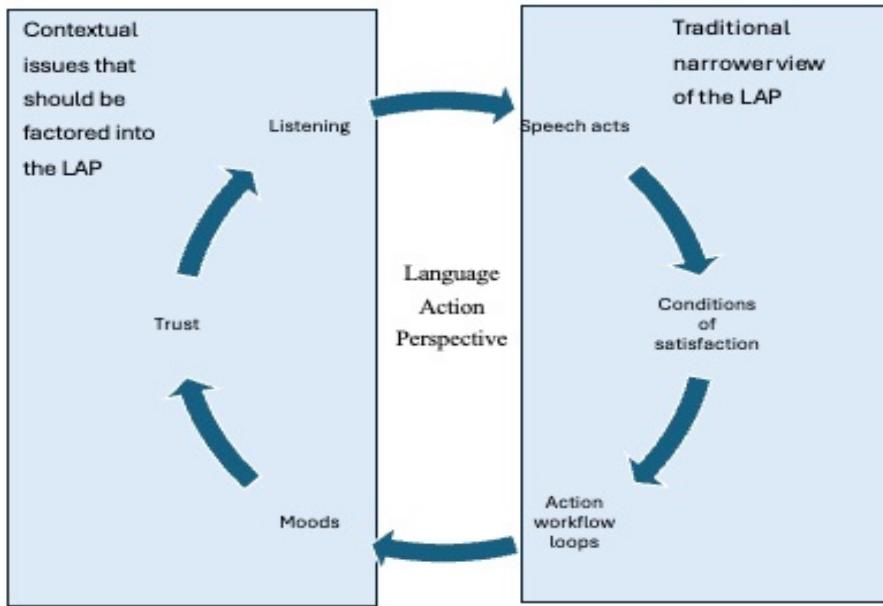


Figure 2.3: Broader conceptual view on the LAP for this study (Source: author's own)

Figure 2.2 presents a closed-loop model illustrating the dynamic and interdependent relationship between language, mood, trust, and commitment as it is currently represented in the literature. While the diagram may appear to suggest a starting point, the loop has no fixed beginning or end. Instead, it conveys the continuous and cyclical nature of interactions between each of the LAP elements and their influences and how each aspect is influenced by the others.

Within this model, mood serves as a pervasive background condition that shapes how individuals listen, interpret, and respond in conversations (Flores, 2013).

The aim of Figure 2.2 is to offer a conceptual framework for the current understanding in existing literature about how communication functions as coordinated action within teams, and the elements that are not present in the existing literature.

Figure 2.2 also demonstrates how conversations in the LAP context happen with moods in the background. Those moods shape how we speak, how we hold our bodies, and how we listen (Flores, 2016). Trust influences our conversations in that it influences how open we are to other people's ideas, and trust shapes how we listen to each other in conversations. When mistrust

exists, it can severely limit our ability to coordinate effectively with others (Solomon and Flores, 2001).

2.13 Summary

In summary, the importance of the LAP in project teams is evident in the existing literature, as demonstrated by the research on the importance of communication, trust, listening and moods in the business world. The LAP emphasises the performative nature of language and its role in coordinating actions within organisations. This perspective highlights the importance of language as a tool for enacting and shaping social reality. By understanding the power of the LAP, project teams can leverage it to create a positive organisational culture, enhance employee satisfaction, and improve overall performance. The LAP also plays a crucial role in project team interactions and negotiations. Effective communication with other team members is essential for building relationships, understanding their needs, and delivering value. Navigating moods within project teams is also crucial, as moods can impact learning, decision-making, and social interactions. Recognising the LAP's significance in project teams can improve communication, collaboration, and project outcomes. The next chapter discusses the LAP and its links to advancing the lean construction agenda.

Chapter Three: Lean Construction Agenda and Language Action Perspective

3.1 Introduction

This chapter explores the integration of the LAP with the lean construction agenda, examining how communication and language impact the effectiveness of lean principles in construction projects. The chapter begins by providing an overview of lean construction, a methodology aimed at eliminating waste, improving productivity, and enhancing project outcomes. It then delves into the theoretical foundation of the LAP, focusing on how language, through actions such as promises, requests, and declarations, serves as a tool for coordinating efforts and driving project success in the lean construction field. The chapter reviews the potential synergies between these two frameworks, emphasising the importance of effective communication in fostering collaboration, trust, and accountability in construction teams. By integrating LAP into lean construction, the chapter demonstrates how improving the quality of communication can address common challenges in construction projects. This chapter contributes to research objective one and two of the study.

3.2 The Lean Construction Agenda

The lean construction agenda emerged as a response to the inefficiencies and waste prevalent in traditional construction practices. The history of lean construction can be traced back to the 1990s when lean manufacturing gained popularity in the automotive industry (Howell, 1999). The principles of lean manufacturing, which focus on eliminating waste, improving efficiency, and maximising value, were adapted and applied to the construction industry. The Lean Construction Institute (LCI) in the United States and the International Group for Lean Construction (IGLC) significantly promoted lean construction by conducting research and developing best practices (Howell and Ballard, 1998).

In the early 2000s, the Construction Industry Institute published a report titled "Implementation of Lean Principles in the Construction Industry," which outlined the fundamental principles and practices of lean construction. This report was a foundation for further research and implementation of lean construction in the industry (Babalola, Ibem and Ezema, 2019). Since

then, lean construction has gained recognition and acceptance as a methodology for improving project delivery and performance. Various organisations, including the LCI and IGLC, have been established to promote and advance lean construction practices.

Lean construction is a methodology that aims to improve the efficiency and effectiveness of construction projects by eliminating waste, improving productivity, and enhancing project performance (Salem et al., 2006). It is an adaptation of the principles and practices of lean manufacturing to the construction industry (Salem et al., 2006). Lean construction techniques have gained popularity due to their potential to impact a project's bottom line (Salem *et al.*, 2006). These techniques have been studied and evaluated in various construction projects to assess their impact on project performance (Salem et al., 2006). The evaluation of specific lean construction elements, such as the Last Planner System (LPS), increased visualisation, huddle meetings, first-run studies, 5 S's, and fail-safe for quality, has been proposed to quantify the results of lean implementations (Salem et al., 2006). Lean construction shares common elements with lean manufacturing despite the differences in assembly environments and processes (Salem et al., 2006). However, implementing lean construction in the construction industry faces challenges due to differences in the construction context and the need for a comprehensive framework tailored to the industry (Jørgensen and Emmitt, 2008).

Additionally, lean construction has been viewed as an effective management approach for reducing the occurrence of non-value activities, such as wasting resources and safety-related accidents (Li, Fang, and Wu, 2020). The benefits of lean construction extend to various aspects of project management, including productivity, satisfaction, and value delivery, particularly in the context of the new normalcy brought about by the COVID-19 pandemic (Parameswaran and Ranadewa, 2021).

The concepts, principles, and methods of lean production have been reviewed and analysed for their applicability in the field of construction (Koskela, 1997). Lean production, which is a generalisation of partial approaches such as Just-in-Time (JIT), Total Quality Management (TQM), and time-based competition, has been successfully implemented in manufacturing and has the potential to improve construction practice and research (Koskela, 1997). Implementing

lean construction practices requires a clear understanding of the different lean practices and their associated benefits (Babalola, Ibem and Ezema, 2019). However, there is a need for a clear and agreed-upon definition of lean production to avoid semantic confusion and ensure consistent understanding and measurement of lean practices (Shah and Ward, 2007).

The implementation of lean construction techniques has been studied in different contexts, including the UK, Saudi Arabia, South Africa, the Gaza Strip, Iraq, and the UAE (Ogunbiyi, Oladapo and Goulding, 2014; Maradzano, Dondofema and Matope, 2019; Sarhan et al., 2020; Bakry, 2022; Nayyef and Khaled, 2022). These studies have highlighted the potential benefits of lean construction and the need for tailored frameworks and strategies to overcome barriers and ensure successful implementation (Sarhan et al., 2020; Bakry, 2022). Integrating lean construction with green principles has also been explored to maximise economic benefits, address quality, reduce waste, and minimise negative environmental impacts (El-sawalhi, Jaber and Shukri, 2018).

3.3 Benefits of Advancing the Lean Construction Agenda

Lean construction is a methodology that aims to improve construction project performance by eliminating waste, improving productivity, and enhancing project management (Howell, 1999). It is an adaptation of lean manufacturing principles to the construction industry. Implementing lean construction techniques has shown potential benefits such as shorter construction periods, increased productivity, improved client satisfaction, and improved project control. However, implementing lean construction faces challenges due to differences in the construction context and the need for tailored frameworks and strategies. Further research is needed to develop comprehensive frameworks and measurement tools for lean construction and to explore its integration with sustainable construction practices (Howell and Ballard, 1998).

As seen in Table 3.1, lean construction projects offer numerous benefits that improve project outcomes and success. Implementing lean construction techniques has several advantages, including improved project sustainability and value stream mapping (Ogunbiyi, Oladapo and Goulding, 2014). Lean construction minimises the direct cost of effective project delivery management and assists construction managers in making informed project decisions at all levels

of the project. Furthermore, the lean construction approach has positively impacted the quality, safety, and environmental aspects of construction projects (Bajjou and Chafi, 2017).

Implementing lean construction practices has also been associated with improved safety systems, reduced occurrence of non-value activities, and enhanced safety management in construction projects (Li, Fang and Wu, 2020).

Table 3.1: Benefits of lean construction literature review

Benefit	Description	Supporting Literature
Waste Reduction	Reduces non-value activities and material waste through coordination and efficient practices.	Howell (1999); Ogunbiyi, Oladapo and Goulding (2014); Ahmed and Sobuz (2020); Li, Fang and Wu (2020)
Productivity and Efficiency	Enhances workforce productivity and project performance; minimises rework and delays.	Howell (1999); Ahmed and Sobuz (2020); Prayuda et al. (2021)
Project Duration	Shortens construction periods and increases the predictability of project delivery.	Prayuda et al. (2021); Howell (1999)
Project Sustainability	Aligns with sustainable practices by eliminating waste, supporting continuous improvement, and enhancing environmental performance.	Ogunbiyi, Oladapo and Goulding (2014); Bajjou and Chafi (2017)
Quality and Safety	Improves quality with fewer defects and enhances on-site safety practices through systematic planning.	Bajjou and Chafi (2017); Li, Fang and Wu (2020); Prayuda et al. (2021)
Client Satisfaction	Leads to improved client relations and stakeholder engagement through better delivery outcomes.	Prayuda et al. (2021); Memon and Akhund (2018)
Communication and Collaboration	Promotes effective coordination, trust-building, and informed decision-making through integrated team structures and workflows.	Ahmed and Sobuz (2020); Ogunbiyi, Oladapo and Goulding (2014)
Cost and Value Management	Minimises direct costs of delivery management and maximises value for money through better decision-making tools and value stream mapping.	Ogunbiyi, Oladapo and Goulding (2014)
Integration with Technology	Facilitates digital integration, such as BIM, improving communication, real-time updates, and coordination across disciplines.	Ahmed and Sobuz (2020)
Continuous Improvement and Innovation	Fosters a culture of ongoing learning, problem-solving, and adaptability to emerging challenges, including those related to sustainability and new work environments.	Flores (2016); Li et al. (2012); Ogunbiyi, Oladapo and Goulding (2014)
Supply Chain and Safety Management	Improves the safety and reliability of supply chains by reducing waste and	Ahmed and Sobuz (2020); Li, Fang and Wu (2020)

	managing risk through collaborative networks.	
Project Duration	Shortens construction periods and increases the predictability of project delivery.	Prayuda et al. (2021); Howell (1999)

Implementing lean construction principles has been shown to have various benefits, including shorter construction periods, productivity gains, improved client satisfaction, greater predictability, improved health and safety, improved design, and improved quality with fewer defects (Prayuda et al., 2021). Lean construction can also contribute to sustainable construction by addressing waste reduction, continuous improvement, increased value for money, and improved communication (Ogunbiyi, Oladapo and Goulding, 2014).

Lean construction enhances workforce productivity, promotes effective coordination and communication, and minimises reworks and zero value-adding activities (Ahmed and Sobuz, 2020). Implementing lean construction principles in the construction industry can reduce waste, improve project performance, and create value (Ahmed and Sobuz, 2020). Additionally, lean construction improves sustainable development challenges, creates continuous improvement, eliminates waste, and improves project and supply chain safety management (Ogunbiyi, Oladapo, and Goulding, 2014).

Furthermore, lean construction allows for effective collaboration with advanced technologies and significantly improves schedule, quality, safety, and productivity in construction projects (Ahmed and Sobuz, 2020).

Despite the benefits that can be derived from the implementation of lean construction, some challenges also persist regarding successful implementation, which can limit the extent of benefits realised.

3.4 Challenges to Lean Construction Implementation

As seen in Table 3.2, the existing literature highlights that implementing lean construction in the construction industry faces many challenges. A lack of awareness, a lack of skills and training, resistance to change, and fragmented communication between project participants are the key

challenges to implementing lean construction (Ahmed and Sobuz, 2020). To overcome these challenges, management commitment, resource and waste management, and effective communication and relationships among stakeholders are crucial (Ahmed and Sobuz, 2020). Integrating the LAP and lean construction can lead to more efficient and effective construction processes, improving project outcomes.

Table 3.2: Challenges of lean construction literature review

Challenge	Description	Supporting Literature
Lack of Awareness and Skills	Many teams lack sufficient understanding of lean principles and have limited training, hindering their ability to implement lean practices effectively.	Ahmed and Sobuz (2020)
Resistance to Change	Teams accustomed to traditional planning methods often resist adopting lean due to comfort with established routines and a reluctance to alter familiar workflows.	Ahmed and Sobuz (2020)
Fragmented Communication	Construction involves diverse stakeholders working in silos, often with conflicting priorities, which obstructs transparent communication and collaborative decision-making.	Ahmed and Sobuz (2020); Howell and Macomber (2006)
Project Uniqueness and Variability	Each construction project is unique and subject to changing site conditions, making it harder to standardise or repeat lean processes.	Ahmed and Sobuz (2020)
Incompatible Contract Models	Traditional contract types, such as fixed-price contracts, discourage collaboration and shared risk, unlike IPD contracts preferred in lean settings.	Howell and Ballard (1998)
Leadership Commitment	Successful lean adoption requires strong leadership and continuous advocacy to embed lean values and practices into the organisation's culture.	Howell and Macomber (2006)
Short-Term Focus of Stakeholders	Stakeholders often prioritise immediate deadlines and profits over long-term process improvements, making it difficult to foster a lean mindset.	Ahmed and Sobuz (2020)

Construction teams, particularly those working on large projects, are often used to traditional work methods. Introducing lean methods, which require collaboration, transparency, and an openness to a new way of working, can be met with resistance from those comfortable with established processes because of their history with a more traditional way of planning and working (Ahmed and Sobuz, 2020). Construction projects involve various stakeholders (owners, contractors, subcontractors, suppliers), often working in silos and with competing interests between making a profit and collaboration. This fragmentation makes it harder to implement lean practices that depend on communicating transparently and building trust within teams (Howell and Macomber, 2006).

Unlike a manufacturing plant, where processes are repeatable, construction projects are often unique. They have highly variable workflows and environmental challenges (weather, site conditions), which can make it harder to standardise and optimise processes. Teams are often comprised of people from different companies who must invent new processes and ways of working. These practices need to be developed in a collaborative conversation (Ahmed and Sobuz, 2020).

Traditional construction contracts, like fixed-price lump sum contracts, do not always encourage collaboration or risk-sharing. By contrast, lean construction often works better with Integrated Project Delivery (IPD) contracts, where stakeholders share risks and rewards. For teams to take on the shared risk necessary for an IPD project, a high level of trust must exist within the team (Howell and Ballard, 1998).

Implementing lean construction requires leadership and total commitment from the organisation's top. Without buy-in from leadership, embedding lean principles deeply into a project or organisation's culture is difficult. Leaders must consistently champion lean construction to overcome resistance and keep the team aligned. Leadership happens most effectively in a commitment-based approach where leaders have strong relationships with their teams (Howell and Macomber, 2006).

Adopting a lean delivery system requires a long-term view. However, many construction stakeholders are focused on immediate project deadlines and profitability. Convincing stakeholders to adopt a mindset focused on long-term efficiency gains and process improvement can take time and effort. This is a challenge that is overcome in an environment of trust and by being able to imagine a different future (Ahmed and Sobuz, 2020).

3.5 Potential Links Between Lean Construction and Language Action Perspective

To better understand how the LAP can support the implementation of lean construction, Table 3.3 summarises the core LAP concepts and illustrates their relevance and practical applicability within construction project environments. This synthesis bridges theoretical insights from Chapter Two with the communication challenges commonly encountered on project teams, setting the stage for the integration of LAP in the case study analyses that follow.

Table 3.3: Relevance of the LAP to lean construction (Flores, 2013)

LAP Concept	Description	Relevance to Construction Projects	Practical Applicability
Speech Acts	Language functions such as requests, promises, declarations, and assessments.	Enables precise coordination of work, clarifies intent, and reduces ambiguity across stakeholders.	Improves communication clarity, reduces confusion, and helps identify communication gaps.
AWL	A visual language-based representation of a transaction.	Provides a visual structure for how coordination acts are performed.	Helpful in identifying breakdowns, follow-through on responsibilities, and team alignment.
CoS	Criteria that define when a request or promise is successfully fulfilled.	Helps establish shared expectations between people and disciplines.	Reduces misalignment and disputes over deliverables.
Trust Domains	Domains of trust: sincerity, competence, reliability, and care.	Offers a framework to diagnose and repair trust breakdowns between team members and organisations.	Enhances cross-functional collaboration and stakeholder engagement.

Moods	Background emotional states that influence how language is interpreted.	Affects team culture, openness to new ideas, and willingness to engage in transparent communication.	Guides leaders in shaping team culture, handling resistance, and fostering psychological safety.
Listening	Understanding that each person listens from their own history and perspective.	Reduces conflict caused by differing interpretations and supports deeper mutual understanding.	Enhances alignment during design development and cross-disciplinary meetings.

As summarised in Table 3.3, the advantages of lean construction over standard construction delivery methods can be reinforced by integrating the LAP into lean implementation and deployment. These critical advantages of lean construction compared to traditional methods are discussed further in relation to the lean techniques for their deployment, identifying any links to language and communication and the LAP.

3.5.1 Enhanced Collaboration

Lean construction significantly improves collaboration, innovation, delivery control, and quality within projects, fostering a more integrated and collaborative project environment. Collaboration within lean construction happens in the conversation (Kraakenes, Tadayon and Johansen, 2019).

Collaboration in lean construction is the intentional practice of coordinating action through trust-based conversations, where team members share assessments, negotiate commitments, and align on a common future using speech acts such as requests, offers, and promises within a psychologically safe environment (Mallinso, et al., 2016). This is different from coordination, which focuses on aligning tasks and managing dependencies to ensure work proceeds efficiently. While coordination is about executing planned actions, collaboration is about co-creating solutions through richer conversations, often using speech acts like requests and promises to move from possibility to action (Aldea and Draghici, 2012).

Teams that can engage in conversation for possibility are able to effectively explore possibilities that may not be apparent in a typical conversation. One of the key values the LAP brings into

these conversations is understanding how our own history shapes our listening and our ability to listen to new ideas. The LAP can also help teams move into action at the right moment in collaboration by moving into the conversation for action, which happens by using the correct speech act. In this case, making a request or offer within the team to move from possibility to action (Flores, 2013).

3.5.2 Improved Efficiency

Lean construction tools like the LPS and Target Value Design (TVD) can improve the efficiency of planning and project delivery, reducing project duration and variability. This efficiency is achieved through better conversations (Erol, Dikmen and Birgonul, 2017). Using the LAP, teams can have more efficient conversations by understanding the distinctions between our assessments and assertions. Conversations are often bogged down by people arguing that their assessments are the truth instead of trying to see people's assessments from their point of view. The ability to listen to assessments as assessments can free up conversations and make them more effective (Flores, 2013).

3.5.3 Increased Safety

Construction workers feel safer psychologically in lean construction projects compared to traditional projects, indicating a positive impact on safety and risk mitigation. Psychological safety is built on a foundation of workers in a system feeling empowered to speak up and share their concerns (Demirkesen, Sadikoglu and Jayamanne, 2021). Lean construction makes projects safer through various mechanisms focusing on waste reduction, improved planning, and enhanced safety practices. By applying lean tools such as kaizen, lean construction positively affects environmental, social, and economic performance by reducing material waste, safety hazards, and production hours (Sarhan et al., 2018). Lean practices can enhance productivity, achieve sustainable built environments, and improve safety performance in construction projects (Babalola, Ibem and Ezema, 2019).

Psychological safety, the shared belief that a workplace is safe for interpersonal risk-taking, has garnered significant attention in organisational research and the lean construction industry. Psychological safety and learning behaviour in work teams, emphasising the importance of

psychological safety in fostering team learning and coaching, is critical to creating a safe work environment on projects (Edmondson, 1999). Psychological safety plays a significant role in promoting employee well-being and organisational performance. In an environment where workers are not afraid to speak up, unsafe conditions are recognised before they become a potential hazard to workers. This would seem even more pre-emptive than the industry standard of recording a “near-miss” (Newman, Donohue and Eva, 2017). Evidence across the industry suggests that unsafe psychological states among construction workers are standard and that, considering safety climate and intimate relationships, the construction industry is uniquely positioned to use psychological safety to improve the overall environment for workers (Yuan et al., 2022).

Reliable promising, a concept rooted in high reliability organising, has been a subject of growing interest in the context of project safety. The application of reliability targets for configuring safety requirements in power and energy systems has improved safety metrics. The study emphasised the importance of reliable promises in ensuring the safety and reliability of critical components, such as reactor vessels, within the power systems (Takaya et al., 2011). In a study (Kurisaka et al., 2011), the authors focused on deriving reliability targets for structures and components in power and energy systems. The findings highlighted the critical role of reliable promises in mitigating dynamic and static failures and human errors to ensure the safety and reliability of power system components. This also indicates the potential of focusing on reliable promises to improve the safety culture of lean construction projects.

In a study by Yi & Langford (2006), they investigated scheduling-based risk estimation and safety planning for construction projects. The study emphasised the role of reliable promising in integrating safety planning with project scheduling, highlighting the importance of proactive safety measures in construction project management. These studies demonstrate the critical role of reliable promising in ensuring safety in various project settings, particularly in power and energy systems and construction projects. Reliable promising plays a vital role in mitigating failure risks, ensuring the safety and reliability of critical components, and integrating safety planning with project management.

3.5.4 Customer Satisfaction

Lean construction practices are associated with increased customer satisfaction, highlighting the benefits of lean methods in meeting client needs and expectations (Memon and Akhund, 2018). Customers realise satisfaction in conversations and share more profound assessments about what CoS are necessary for a successful project outcome. Moods are critical to customer satisfaction because they are always in the background. When we learn to shape moods, we can create the right conditions in the background to create a successful project (Flores, 2016). In addition, teams that focus on taking care of an owner's concerns instead of just delivering on values can create a culture of care in project teams (Flores, 2020).

3.5.5 Waste Reduction

The construction industry generates significant waste, including materials, debris, and by-products from construction, renovation, and demolition activities. Coordination waste, which results from poor communication and collaboration among project stakeholders, contributes to inefficiencies, delays, and material wastage (Mousli and El-Sayegh, 2016).

Coordination waste in the construction industry refers to inefficiencies and delays resulting from poor coordination and communication among project stakeholders. The impact of poor coordination and control on waste generation during construction leads to a massive amount of additional money spent on labour and materials (Loosemore, Lingard and Teo, 2002). The wrong choice of construction methods and reworks can contribute to coordination waste, leading to delays, rework, and material wastage (Ajayi et al., 2017). Similarly, poor coordination is also a significant contributor to variations, change orders, and rework, resulting in a high volume of construction debris. This underscores the critical impact of coordination waste on construction projects and the need for effective coordination and communication practices to minimise waste and enhance project performance (Ajayi et al., 2017). Lean construction focuses on pursuing excellence in production processes, leading to fewer resources and reduced waste in construction environments (Costella et al., 2018).

Coordination waste in construction projects can be significantly reduced through effective communication practices. For example, Domingo (2015) confirmed that collaborative

procurement methods have the potential to reduce overall construction waste generation through better communication and coordination. Similarly, Zhao et al., (2015) identified Building Information Modelling (BIM) aided coordination as a valuable tool for reducing conflicts between disciplines, minimising rework, and enhancing communication and integration, ultimately reducing waste in construction projects. These findings underscore the critical role of communication in reducing coordination waste and improving overall project performance.

3.5.6 Adaptability and Innovation

Innovation happens in conversations with others, and lean construction methods offer adaptability and innovation. They provide solutions to implementation challenges and promote continuous improvement (Li et al., 2012). A team adapts by learning and exploring possibilities together. A team must create the right expansive moods to adapt and innovate to new ideas to create an environment where learning can happen. (Flores, 2016)

3.5.7 Commitment Levels

The range of lean implementation levels and the commitment of workers support the conclusion that lean implementation is enhanced when commitments are reliable and explicit (Angelis et al., 2011). The network of commitments in lean construction encompasses various aspects of project management, collaboration, and trust among team members. A network of commitments is built through a series of commitment-based conversations. In conversations focused on making and securing reliable promises, teams must adapt commitment language. Using terms like maybe, I'll try, or that should work needs to be replaced by explicit promises that are negotiated based on clear requests (Howell and Macomber, 2006)

Table 3.4 was developed through a qualitative analysis of key lean construction practices and their potential alignment with the LAP framework. The table reflects a conceptual mapping of how foundational lean tools such as the LPS, TVD, and IPD can be enhanced when paired with specific elements of the LAP.

The table was constructed by first identifying commonly used lean construction practices documented in the literature. Then categorising them based on the primary area of improvement

they target. Relevant elements from the LAP framework were aligned with each lean tool to highlight how communication-based interventions could enhance lean practices.

Table 3.4: Integrating the LAP with lean construction (Author's Own)

Lean Techniques/Tools/Processes	Area of improvement targeted	The potential influence of the LAP	Potential KPI's
Last Planner System	Enhanced Collaboration	Speech acts, Action Workflow Loop	Increase in PPC and fewer communication variances
Target Value Delivery	Improved Collaboration	Conversations for Possibility and Action	More cross-functional conversations
Integrated Project Delivery (IPD)	Increase Trust	Moods, Trust and Speech Acts	Expansive moods reported in mood check-ins
Team Retrospectives	Rapid Learning	Conversations for Possibility and Action	An increase in the sharing of assessments
Make-Ready Planning and Flow	More open conversations around possibilities and creating shared understanding	Speech Acts and Action Workflow Loop	Increased ID of constraints
Visual Management	Shared understanding of key metrics	Speech acts	More reliable promises around VM conversations
Lean Leadership	More inclusive leadership	Moods, Trust and Speech Acts	More conversations for action produced in meetings
5S	Innovation	Speech Acts and Trust	Increase in sharing assessments for improvement
Psychological Safety	Reduce the fear of speaking up	Trust, Moods, and Action Workflow Loop	More open sharing of assessments between team members

3.5.8 Customisation and Value

Lean design management appears valid for implementation in the architecture, engineering, and construction (AEC) sector. Still, it must be customised according to the project context to achieve the desired value for all stakeholders. This highlights the need for commitment to customising lean practices. Lean design happens in conversations exploring possibilities and assessing design alternatives and approaches (El. Reifi and Emmitt, 2013).

3.5.9 Lean Strategizing

Lean construction has unintended consequences for organisations, and the research reveals how it transforms during its journey. This emphasises the need for commitment to navigate the

unintended consequences of lean construction. Navigation happens in conversations within the team and requires an openness to new contingencies and what they might reveal about other paths to follow (Sage, Dainty and Brookes, 2012).

3.5.10 Management Commitment

An innovative climate, combined with internal and external pressures to improve, is a critical driver of management commitment to lean, highlighting the importance of commitment in driving lean improvements. Leaders commit to their teams by making declarations about what is possible and carefully managing their and the team's promises (Boyle, Scherrer-Rathje and Stuart, 2011).

3.5.11 Trust and Collaboration

Specific lean tools can facilitate higher interactions because they encourage the management of commitment and trust among team members, emphasising the crucial role of commitment and trust in lean construction practices. For example, the LPS is based on the network of commitments and the management of those commitments as part of executing the work (Herrera et al., 2020).

3.5.12 Real-Time Planning

Lean production control systems, such as the LPS, focus on the commitment plan and reporting, emphasising the importance of commitment in real-time planning and monitoring of construction projects (Dallasega, Rauch, and Frosolini, 2018).

3.5.13 Integration and Influence

The integration of lean design and design management thinking influenced the development of a conceptual design management model, emphasising the influence of commitment in integrating lean principles. Language- and commitment-based management is critical to a successful lean implementation (Kestle, Potangaroa and Storey, 2011).

3.5.14 Human Capacity Building

Lack of commitment from top management is highlighted as a significant barrier to lean implementation, underscoring the significance of commitment in fostering lean construction practices (Sandagomika and Sandanayake, 2021).

3.5.15 Project Lean Leadership

Leadership is crucial in lean construction projects because it significantly impacts project success and performance. Effective leadership behaviour is a vital variable that influences the success of project management (Limsila and Ogunlana, 2008). In sustainable construction projects, leadership is significant in influencing organisational activities, including sustainability and its implementation in construction management (Opoku, Cruickshank and Ahmed, 2015). Lean construction aims to improve construction processes and develop innovative and sustainable construction. Leadership is essential in implementing lean principles, enhancing communication and collaboration, and promoting a culture of continuous improvement (Saini, Arif and Kulonda, 2018).

Furthermore, leadership is essential at all levels of construction administration, from field supervision to company management, and is crucial for ensuring the success of construction projects (Senam et al., 2014). Lean construction requires adequate management and leadership support to entrench lean construction techniques into the culture of the construction organisation (Nwaki, Eze and Awodele, 2021). Additionally, requirements for lean leadership need to be defined to create and support an efficient way of working and to support cultural change on construction sites (Walter et al., 2020). Therefore, leadership is fundamental in lean construction projects, influencing project success, sustainability, and the overall culture of construction organisations.

Lean construction calls for a different kind of leadership skill. It requires a shift from managing activities and motivating workers to leadership based on listening, openness, and eliciting commitments from team members (Howell and Macomber, 2006). Using the LAP as a leadership model results in a shift from motivation being an external influence on the workers to an internal

influence based on the desire to fulfil your commitments to your co-workers (Howell and Macomber, 2006).

Leadership and promises are intertwined, impacting leaders and their effectiveness.

Transformational leadership, characterised by motivating and influencing employees to exceed expectations, involves the leader making promises of a vision for the future and motivating their teams to achieve it (Leite and Rua, 2022). Leadership traits, including the fulfilment of promises, have a particular impact during times of change, influencing employees' adoption of organisational values (Wallace, de Chernatony and Buil, 2011). In the context of sustainability and corporate social responsibility, brand-specific transformational leadership involves the leader deeply articulating the sustainable brand vision and acting as a role model for the sustainable corporate brand promise (Joyce Stuart, 2013). Effective leadership practices, including fulfilling promises, are imperative for educational systems striving to close achievement and opportunity gaps, emphasising the sustainable impact of leadership practices on student achievement (Anita and Julia, 2015).

Furthermore, ethical leadership influences employee innovation, and studying the impact of boundary conditions of leadership would further refine the understanding of how ethical leadership affects employee innovation (Pasricha and Rao, 2018). Leadership strategy, including fulfilling promises, is a promising policy tool for achieving desired organisational outcomes, including firm resilience and profitability (Ahmed, 2022). Entrepreneurial leadership positively impacts essential psychological needs satisfaction, highlighting the role of promises in fulfilling the needs of employees (Shafie and Mohd Isa, 2023). Authentic leadership, which involves fulfilling promises and building trust, influences employee trust in the manager, impacting organisational relationships (Alkaabi and Wong, 2020). Leadership development contributes to an organisation's social capital, offering a new avenue to understand how leadership development impacts organisational performance, including fulfilling promises (Bilhuber, Galli and Müller-Stewens, 2012).

Sustainability has become a key priority for health sector organisations, and leadership in this area is essential at all levels. This highlights the importance of promises in sustainable healthcare

leadership (Berniak-Woźny and Rataj, 2023). Therefore, promises impact leadership and leaders across various domains, influencing organisational values, employee motivation, innovation, and sustainability.

For leadership to be effective in a commitment-based project approach, the workers making commitments must be allowed to say no. If workers are not empowered to say no, they cannot be trusted to make reliable commitments. The ability to say no to a request brings dignity and professionalism to the planning and execution of the work. (Howell and Macomber, 2006). Further, an effective leader creates new opportunities for workers to have a better future. A future in which work is more reliable and promises are rigorously managed to produce a better environment in which to work (Howell and Macomber, 2006).

Successful project teams are built on a foundation of trust, and trust in teams happens through the recurrence of making and delivering on promises and sharing concerns (Howell and Macomber, 2006). Sharing concerns and securing and keeping promises happen in conversations with others. In those conversations, we use speech acts to share our assessments, make requests and offers, negotiate and make promises, and take responsibility for our shared future.

Leaders use trust in various ways to influence follower attitudes, behaviours, and organisational outcomes. Trust in leadership has been identified as a crucial element in the effectiveness of leaders, impacting follower attitudes and behaviours (Avolio et al., 2004). Communication and trust are vital in unlocking the relationship between leadership and team performance and creativity, indicating the pivotal role of trust in enhancing team dynamics and performance (Boies, Fiset and Gill, 2015). Trust in the leaders has been positively related to safety compliance and has mediated the positive relationship between ethical leadership and safety compliance, highlighting the impact of trust on safety-related behaviours (Enwereuzor, Adeyemi and Onyishi, 2020). Furthermore, when leaders use self-deprecating humour, they improve members' trust and satisfaction with their leaders, influencing followers' willingness to achieve team goals and performance (Mei-Jun Huang, 2022). Trust in the leader is also a significant

mediator between transformational leadership and knowledge-sharing processes, indicating its role in facilitating knowledge exchange and collaboration (Le and Lei, 2018).

Additionally, trust in leaders partially mediates between servant leadership and organisational commitment, emphasising its role in fostering organisational commitment (Goh and Low, 2013). Trust in the leader has been found to influence innovative work behaviour positively and significantly moderate the relationship between perceived leader-member exchange quality and employees' creative work behaviour, highlighting its role in promoting innovation (Taştan and Davoudi, 2015). Moreover, trust in leaders has been shown to mediate in predicting creativity, indicating its influence on fostering a creative work environment (Jaiswal and Dhar, 2017). These findings collectively demonstrate the multifaceted impact of trust in leadership, influencing follower attitudes, behaviours, and organisational outcomes across various domains.

3.5.16 Risk Mitigation and Make-Ready

Risk mitigation in lean construction involves the application of strategies to identify, assess, and address potential risks in construction projects, aligning with lean construction principles to minimise waste and optimise project performance by making work ready and producing flow (Ebbs and Pasqure, 2018). The interaction of lean construction and BIM has been recognised as a means to reduce errors, mitigate issues that might increase cost or risk, and improve accountability in construction projects (Zhan et al., 2022).

Furthermore, adopting lean construction has been proposed as a method to mitigate risks associated with fast-track implementation through careful planning (Pishdad-Bozorgi and Kumar, 2020). The integration of lean and agile project management concepts has been suggested as a hybrid approach to address the negative attributes of traditional project management, indicating the potential for risk mitigation by incorporating lean principles (Ekanayake, Fadhl and Bin, 2018).

Moreover, lean construction has been identified as an innovative approach that presents opportunities for risk reduction, such as fewer housing defects, reduced energy use and waste, and eliminated environmental and safety risks (Spišáková and Kozlovská, 2013). Exploring

synergies between BIM and lean for visual construction management, such as the Digital Obeya Room, also indicates the potential for risk mitigation through enhanced visualisation and management practices (Nascimento et al., 2018). Therefore, risk mitigation in lean construction involves leveraging lean principles, BIM integration, careful planning, and innovative approaches to minimise risks and enhance project outcomes by making work ready and producing flow (Ebbs, et al. 2024).

Communication plays a pivotal role in improving construction risk mitigation by facilitating the exchange of information, fostering collaboration, and enhancing decision-making processes. Effective communication within construction projects enables stakeholders to promptly identify and address potential risks, thereby minimising their impact on project outcomes. This improves the flow of work by making the work ready for the workers who will be doing the tasks (Ebbs and Pasquie, 2018). Emphasises that good communication practices can serve as a checklist of good practices, helping project managers improve the effectiveness of project control, which is essential for risk mitigation (Olawale and Sun, 2010). Good risk management, facilitated by effective communication, offers the opportunity to increase efficiency and profitability in the construction industry (Idris et al., 2022). Communication is crucial in implementing risk mitigation strategies in Industrialised Building System (IBS) construction, such as standardisation, BIM integration, and training, which are essential for improving financial strategies and mitigating risks (Jamalluddin et al., 2022).

Additionally, effective communication is vital for disseminating information about seismic retrofitting strategies, which, as highlighted, is a critical aspect of earthquake risk mitigation and urban resilience (Ferreira et al., 2016). Increasing public awareness about earthquake disaster mitigation through effective communication is essential for community adaptation and resilience in disaster-prone areas (Asman et al., 2020). Therefore, the literature underscores the significance of communication in construction risk mitigation, emphasising its role in promoting efficiency, profitability, and resilience in construction projects.

Leaders use promises to mitigate risk on construction projects by establishing clear commitments and assurances to stakeholders, thereby reducing uncertainty and enhancing project control. The

fulfilment of promises by leaders can serve as a checklist of good practice, helping project managers improve the effectiveness of project control, which is essential for risk mitigation (Olawale and Sun, 2010). Additionally, implementing risk mitigation measures proposed in construction projects involves making promises to address potential risks, thereby enhancing project resilience and success (Hwang et al., 2017). Furthermore, establishing valid and efficient risk mitigation proposals involves making promises to tackle risks in construction projects, promoting financial strategies, and mitigating risk (Jamalluddin et al., 2022). Authentic leadership styles, empowerment, and active engagement with contractors, which involve making promises, have significantly mitigated rework in civil engineering projects, emphasising the role of promises in risk reduction (Idris et al., 2022). Therefore, leaders use promises to reduce risk on construction projects by making commitments, establishing efficient risk mitigation measures, and fostering a culture of accountability and assurance, ultimately contributing to improved project outcomes and performance.

3.5.17 Supply Chain Management

Supply chain management (SCM) involves a complex network of suppliers, designers, general contractors, and trade contractors who are critical to producing project components (Azambuja et al., 2006). The traditional way to view the SCM process is as a series of inputs and outputs (Azambuja et al., 2006). However, let's consider the SCM system as a series of workflow loops in which fulfilled promises equal the effective coordination of the work breakdowns in the SCM. These loops can be seen as incomplete.

Supply chain management in the construction industry encompasses coordinating and integrating various processes, stakeholders, and resources involved in construction projects. It involves effectively managing material flow, information exchange, and financial transactions throughout the construction supply chain. This includes addressing intertwined organisational challenges and offering management strategies to overcome potential barriers at any stage of the construction (Cataldo, 2018). The construction supply chain involves a combination of processes starting from demand and design and ending in construction, involving stakeholders such as clients/owners, designers, contractors, subcontractors, and suppliers (Shiji, Kodi and Arun, 2021).

The supply chain structure of a construction project is determined based on its main components, including delivery methods, operational elements, and functions (Putranesia *et al.*, 2023).

Furthermore, the construction supply chain typically consists of numerous participants and is complex, requiring effective coordination and management (Cheng *et al.*, 2010). Implementing material procurement supply chain management is crucial for improving project performance within the construction industry (Pahinggis and Sucita, 2022). Overall, construction supply chain management is vital in ensuring the efficient flow of material, information, and financial resources from upstream to downstream, ultimately contributing to the success of construction projects (Sholeh, Wibowo and Handayani, 2020). Effective communication and making and keeping promises are crucial in improving construction supply chains. With its intricate network of stakeholders and complex processes, the construction industry would benefit from focusing on the LAP in supply chain improvement.

Communication is crucial in the construction industry's supply chain management. Effective communication fosters collaboration, teamwork, and integration among various stakeholders, suppliers, contractors, and clients. It enables the seamless exchange of information, real-time data, and operational insights, thereby enhancing the overall efficiency and responsiveness of the supply chain (Christopher and Lee, 2004). Good communication skills are essential for supply chain managers to connect with other businesses, suppliers, and customers, facilitating negotiation and relationship building (Guo, 2021). Furthermore, communication and information technology have positively impacted supply chain management practices, competitive advantage, and firm performance (Ni *et al.*, 2022).

Effective communication is crucial in global supply chains to mitigate risks, enhance confidence, and promote coordination and monitoring (Seethamraju, 2009). The application of technology to supply chain management activities has been shown to enhance trust and cooperation between upstream and downstream nodes, thereby promoting the digital transformation of the supply chain. Communication across the supply chain can increase risk exposure and make it easier to manage problems early. Therefore, communication plays a vital role in facilitating the flow of

information, decision-making, and coordination within the construction supply chain, ultimately contributing to improved performance and operational effectiveness (Seethamraju, 2009).

Building strong supplier relationships relies on clear, consistent communication and promises to uphold agreements. Trust is established when promises are made and kept, ensuring suppliers understand project requirements and fostering a collaborative and reliable supply chain (Azambuja et al., 2006). The coordination of action is the coordination of commitments; when we fulfil our commitments, we build trust (Flores, 1982).

3.5.18 Visual Management

The LAP supports visual management by emphasizing the role of language as action, mainly through commitments, requests, and promises that drive work forward. The LAP helps translate verbal commitments into visible workflows by making communication explicit and trackable. When integrated into visual management systems, such as task boards or planning tools, the LAP clarifies who is responsible for what, by when, and under what conditions. This improves team alignment and accountability, as visual cues reflect the state of commitments in real-time. In doing so, the LAP enhances the effectiveness of visual management by embedding intention, responsibility, and progress into the visible flow of work, ultimately fostering more reliable and transparent project execution (Winograd and Flores, 1986).

3.6 How Does the Language Action Perspective Advance Lean Implementation and Improve Construction Projects?

Design and construction projects are human endeavours; humans coordinate their actions through language. Further, humans are historical beings, and we have a past, and we live in the present with a concern for the future (Macomber and Howell, 2003). Improving the success of projects is rooted in improving how humans work together. Projects create new worlds and change the world that we live in, and those new worlds are created in conversations (Macomber and Howell, 2003). Today, the premise of lean construction's focus is on the management and coordination of activities, like work tasks information, which reflects an operational focus, but it often fails to account for the generative power of managing commitments where outcomes emerge not from task control, but from coordinated, trust-based action. Still, by using the LAP to

deliver projects, we focus on managing outcomes, not activities. We manage outcomes by securing reliable promises from those responsible for coordinating and delivering the work (Macomber and Howell, 2003). By using a commitment-based approach, the focus of project management shifts toward securing reliable promises and managing those commitments through systems like the LPS (Macomber and Howell, 2003).

In a commitment-based approach using the LAP, we focus on coordinating action, making responsible assessments, disclosing new ideas and possibilities in conversation, building and repairing trust within project teams, and managing moods (Macomber and Howell, 2003).

Humans are disclosive by nature. When teams are trained in the LAP and a commitment-based approach to management, the disclosive nature of humans can be harnessed to open up new possibilities and innovation to how work is conceived, planned and executed (Macomber and Howell, 2003). When projects are conceived as a disclosive world, we recognise that our concerns around risk, opportunities for improvement, how we sequence activities, and what we value are all assessments based on our historicity (Macomber and Howell, 2003). When we adopt a LAP approach to management, the very nature of thinking changes from something in our brain to the idea that thinking is a conversation one has with oneself. When we shift to this new way of thinking, we adopt a new style in which our history shapes our thinking and how we stand on that history to assess what is possible and not possible in projects (Macomber and Howell, 2003). Lean construction provides the framework and tools for a successful project, and the LAP supports these tools by giving the humans on the project a better way to coordinate.

To deepen the understanding of how the LAP can complement and enhance lean construction practices, Table 3.5 presents intersections between key lean construction principles and core LAP concepts.

Table 3.5: Intersections between lean construction and language action

Lean Construction Practice	Corresponding LAP Concept	Relevant Citations	Explanation of Intersection
Enhanced Collaboration	Speech Acts, Conversations for Possibility	Kraakenes, Tadayon and Johansen (2019); Mallinso et al. (2016); Flores (2013)	Collaboration is achieved through trust-based conversations using requests, offers, and promises to move from possibilities to coordinated action.
Improved Efficiency	Assessments vs. Assertions, Listening	Erol, Dikmen and Birgonul (2017); Flores (2013)	Efficient project delivery is supported by understanding the distinction between assertions and assessments, enabling better communication and planning.
Psychological Safety	Moods, Trust, Action Workflow Loop	Demirkesen, Sadikoglu and Jayamanne (2021); Edmondson (1999); Flores (2016)	Psychological safety is enhanced through trust, open dialogue, and the use of mood awareness to foster safe team communication environments.
Customer Satisfaction	Moods, Conversations for Action	Memon and Akhund (2018); Flores (2016, 2020)	Customer needs are addressed not just technically but emotionally, by shaping moods and creating a culture of care within project teams.
Waste Reduction	Speech Acts, Visual Management	Mousli and El-Sayegh (2016); Ajayi et al. (2017); Winograd and Flores (1986)	Reducing coordination waste requires clear communication and reliable promises to avoid rework, supported by visual tools tied to commitments.
Adaptability and Innovation	Moods, Conversations for Possibility	Li et al. (2012); Flores (2016)	Innovation emerges in open-ended conversations where expansive moods foster exploration of new solutions and adaptive thinking.
Commitment Management	Reliable Promises, Network of Commitments	Howell and Macomber (2006); Angelis et al. (2011)	Lean implementation depends on reliable, explicit promises made in structured conversations, shifting from vague intent to negotiated commitment.
Risk Mitigation and Flow Planning	Promises, Communication, Visual Management	Ebbs and Pasqure (2018); Olawale and	Risk is mitigated when communication clarifies

		Sun (2010); Zhan et al. (2022)	future commitments, and flow is ensured by making work ready through reliable conversations.
Supply Chain Integration	Workflow Loops, Promises, Trust	Azambuja et al. (2006); Seethamraju (2009); Flores (1982)	Supply chain effectiveness improves through managed commitments and trust among entities, viewed as a system of workflow loops and mutual reliance.
Visual Management	Speech Acts, Commitments, Responsibility Clarity	Winograd and Flores (1986); Tezel and Aziz (2017); Daniel and Pasqure (2019)	LAP enhances visual tools by making visible the underlying speech acts and improving alignment and accountability.
Lean Leadership	Declarations, Moods, Listening, Promises	Howell and Macomber (2006); Leite and Rua (2022); Wallace et al. (2011); Alkaabi and Wong (2020)	Effective leadership in lean is less about command and more about declarations of future possibilities, listening, and managing promises.
Team Learning and Retrospectives	Conversations for Action, Trust, Assessments	Flores (2013); Demirkesen, Sadikoglu and Jayamanne (2021)	Retrospectives are spaces for learning where LAP tools help teams express assessments, reflect on actions, and build shared understanding.

The LAP can support lean construction by facilitating effective communication, collaboration, and knowledge sharing among project stakeholders. The LAP endorses using visual management as a lean technique that utilises the LAP to enhance communication and improve project performance (Tezel and Aziz, 2017; Daniel and Pasqure, 2019). Visual management involves using visual aids, such as charts, diagrams, and signs, to convey information and make it easily understandable to all project participants. It provides a common language and visual cues that enable effective communication and understanding of project goals, progress, and requirements (Tezel and Aziz, 2017). Using visual management techniques with the LAP principles, project teams can quickly identify and address issues, make informed decisions, and coordinate their activities more efficiently (Daniel and Pasqure, 2019).

The LAP and visual management can support lean construction by promoting transparency, accountability, and continuous improvement. It allows project stakeholders to have a shared understanding of project objectives, progress, and performance metrics (Tezel and Aziz, 2017). Using the LAP principles allows for a richer conversation. It promotes a more profound understanding that will enable teams to identify waste, bottlenecks, and opportunities for improvement, leading to a more efficient and effective project delivery (Daniel and Pasqure, 2019).

Furthermore, visual management enhances communication on construction sites and improves health and safety practices (Daniel and Pasqure, 2019). Using visual cues and standardised visual aids, project teams can effectively communicate safety protocols, hazards, and emergency procedures, reducing the risk of accidents and injuries. (Daniel and Pasqure, 2019). In visual management, the LAP can contribute to the health and well-being of internal and external stakeholders by providing teams with a way to discuss visual tools in a way that provides clarity and commitment toward goals. Teams that rely solely on visual objects and do not develop a communication strategy for those visual tools will not benefit from visual management. Visual management facilitates conversations; it does not replace them (Daniel and Pasqure, 2019).

However, implementing the LAP in the form of visual management can create challenges and may need further research in the construction industry. These challenges include resistance to change, poor communication skills, missing linguistic skills for coordinating action, a lack of awareness and understanding of lean techniques, and the need for cultural and organisational transformation (Ahmed and Sobuz, 2020). Overcoming these challenges requires effective leadership, training, and communication strategies to ensure all project participants understand and embrace the benefits of visual management and other lean techniques (Ahmed and Sobuz, 2020).

The LAP can enhance communication on a lean project. The LAP techniques, such as active listening, asking clarifying questions, and using a commitment-based approach to management, promote effective communication within lean construction projects (Eriksson, 2010). By actively engaging in the communication process, seeking clarification when needed, and securing

promises, project participants can ensure that messages are accurately understood, reducing misunderstandings and improving overall communication effectiveness.

The LAP can support collaborative decision-making on lean construction projects. Lean construction emphasises collaboration and teamwork among project participants. LAP techniques, such as reflective questioning and dialogue, facilitate open and constructive communication, enabling project teams to engage in collaborative decision-making (Eriksson, 2010). This promotes a sense of ownership, commitment, and shared responsibility among stakeholders, leading to better project outcomes.

The LAP can also support a culture of continuous improvement and provide the linguistic framework for improving conversations. Using LAP techniques, project participants can engage in reflective discussions, provide feedback, and identify areas for improvement (Eriksson, 2010). This promotes a culture of learning, innovation, and continuous improvement within the project team, increasing efficiency and quality.

LAP techniques can help resolve conflicts and disagreements that may arise during lean construction projects. By promoting open and honest dialogue, active listening, and respectful communication, the LAP enables project participants to address conflicts constructively, find mutually beneficial solutions, and maintain positive working relationships (Eriksson, 2010).

The LAP can be crucial in coordinating work by structuring and facilitating organisational communication. A LAP based approach emphasises the role of information systems in supporting communication within an organisation by structuring and coordinating the actions performed by the organisation's agents. This view highlights the importance of language in guiding and aligning the actions of individuals towards common goals (Johannesson, 2009).

Labour coordination is a complex process that involves various elements such as communication, task management, and explicit planning (Gardner and Levy, 2010). The AWL can help organisations streamline interactions, reduce non-actionable conversations, and efficiently manage actions (Suchman, 1993). Research has shown that the coordination of

conversations and actions is crucial at the beginning of activities (Gardner and Levy, 2010). Furthermore, studies have established a connection between language and action areas of the brain, indicating the potential for gesture and language to facilitate coordinated labour (Kelly, Manning and Rodak, 2008). The features of workflow distribution in workplaces and the creation of interoperable workflows with closed loops contribute to the efficient coordination of labour processes (Grigoriev et al., 2021).

3.7 Summary

This chapter focused on the intersection of lean construction and the LAP, exploring how integrating effective communication practices can enhance the application of lean principles in construction projects. Effective communication remains central to all the benefits that the lean construction agenda seeks during projects.

The literature review suggests that integrating the LAP with lean construction could enhance communication and leadership effectiveness and facilitate the adoption and successful implementation of lean construction principles. This integration can potentially improve project performance, address inefficiencies, and contribute to a more sustainable and collaborative construction industry. However, despite the potential benefits the LAP can contribute to advancing the lean construction agenda, these need to be tested empirically. The next chapter will discuss and justify the research methodology used to collect and analyse data on the potential for the LAP to improve communication effectiveness in construction project teams and how this can contribute towards advancing the lean construction agenda.

Chapter Four: Research Methodology

4.1 Introduction

Chapter Three reviewed the literature on applying the LAP in various industries. The chapter concluded that the LAP, combined with lean construction methodologies, has positively impacted team performance in the construction and design industry. The review of the existing literature around the LAP and lean construction led to the proposition of the research questions in Chapter One. This chapter discusses the approach and process followed in the empirical phase of this research. It discusses the selection of the research methods used to collect and analyse data, including the justification for these choices. The ethical considerations that were followed throughout this research have also been discussed. The design of the research methodology and its ethical considerations ensure a coherent link between theoretical inquiry and practice-based exploration, thereby integrating all four research objectives within a unified methodological framework. This chapter contributes to research objective three and four of the study.

4.2 Research Methodology

The research methodology for this study employs a qualitative approach, combining multiple case studies and action research to explore the impact of the LAP on communication and team dynamics in construction projects. The study focuses on understanding how LAP principles, particularly speech acts, requests, and promises, influence trust, communication quality, and the reliability of commitments within project teams, and can improve overall communication within project teams. The case study method was chosen to allow for an in-depth analysis of real-world project environments. At the same time, the action research component enabled the researcher to actively engage with participants through workshops designed to test the effectiveness of LAP training. Data collection methods included interviews, direct observations, and surveys, which provided a comprehensive view of participants' experiences before and after the intervention. Content analysis was employed to identify patterns and trends in the qualitative data, ensuring the findings were grounded in participants' real-world experiences. This mixed approach provided valuable insights into how communication improvements can foster better collaboration and performance in construction project teams.

4.3 Philosophical Assumptions

In academic research, philosophical considerations are crucial in shaping the direction and methodology of scholarly inquiry. Philosophical perspectives influence the fundamental assumptions, theoretical frameworks, and ethical concerns that underpin research endeavours. While some argue that logical and philosophical considerations are irrelevant in empirical science (Furedy, 1988), others highlight the importance of integrating philosophical insights into academic research (Letheby and Mattu, 2021). Philosophical engagement is a means to enrich the depth and breadth of scholarly investigations, offering unique perspectives on issues such as ethics, epistemology, and metaphysics.

4.3.1 Methodological Assumptions

Methodological assumptions in academic research are fundamental beliefs that guide researchers in selecting research methods, designing studies, and interpreting results. These assumptions are closely linked to epistemological and ontological considerations and influence the research process. Scholars have emphasised the importance of comprehending and articulating methodological assumptions to uphold the rigour and validity of research endeavours (Lamont and Swidler, 2014).

In decolonising research paradigms, scholars have stressed the importance of recognising and critically evaluating the axiological, ontological, and epistemological assumptions underlying various research approaches (Held, 2019). Researchers can strive for more inclusive and culturally sensitive research practices by reflexively analysing these assumptions.

Methodological assumptions are not fixed but evolve, shaped by researchers' life histories, academic experiences, and social contexts (Clark, 2022). This dynamic aspect of methodological assumptions highlights researchers' need to reflect on and refine their research approaches continuously.

Methodological assumptions in academic research transcend individual studies to encompass broader disciplinary contexts. For example, in educational technology research, scholars have

underscored the significance of enhancing methodological capacity to diversify and improve the quality of research methods utilised in the field (Bulfin et al., 2014).

4.3.2 Epistemology Assumptions

Epistemology, a branch of philosophy, concerns the nature, sources, and validity of knowledge acquisition. It explores the development of epistemological beliefs and their impact on learning and teaching activities (Qomar, Hidayati and Nafi'uddin, 2022). An intervention can induce epistemological doubt in scientific controversies, changing students' epistemological beliefs and argumentation skills (Hofer and Pintrich, 1997)

Epistemological assumptions in academic research are fundamental beliefs that influence researchers' perspectives on knowledge, truth, and the nature of inquiry. These assumptions guide the selection of research methods, data analysis, and the overall research process.

Understanding and articulating epistemological assumptions is critical to ensuring the validity and reliability of research outcomes (Fuller et al., 2013).

Epistemological beliefs are dynamic and can vary across disciplines and cultural contexts. A researcher's beliefs about knowledge and learning can impact their academic performance and learning processes (Aslan and Şimşek, 2021). Epistemological assumptions are particularly critical in qualitative research, where researchers often adopt interpretive and constructionist perspectives. Qualitative research is commonly associated with interpretivism, focusing on understanding subjective experiences and social phenomena. In contrast, quantitative research typically aligns with positivism, emphasising objectivity and empirical observation. These epistemological assumptions are integral to shaping research paradigms and methodologies.

Stating the epistemological assumptions underpinning research is critical to ensure methodological rigour and coherence (Fuller et al., 2013).

In this study, the researchers' epistemology blends interpretivism and constructivism. The researcher believes knowledge is created through experience and conversations. The researcher was not seeking general rules and laws but to deeply understand how participants interpret their realities in project environments, especially before and after the workshops. Through interviews, observation, and reflective dialogue, the researcher co-created knowledge with participants and did not extract it from them.

4.3.3 Ontological Assumptions

Ontological assumptions in academic research refer to the fundamental beliefs about the nature of reality and existence that underlie scholarly investigations. These assumptions significantly shape researchers' perspectives on what can be understood and studied within their respective fields. Comprehending and articulating ontological assumptions ensures coherence and rigour in research endeavours. (Johnson and Onwuegbuzie, 2004)

The consideration of ontological assumptions is particularly crucial in interdisciplinary studies, such as the research in this thesis around the philosophy of language and lean construction, where the attempt is made to understand the relationship between two fields from an ontological perspective across different cultures and disciplines (Goodall et al., 2022). By acknowledging and addressing ontological assumptions, researchers can promote collaboration and advance knowledge in intricate and multifaceted areas of study.

Furthermore, ontological assumptions are closely linked to methodological pluralism (Slife and Reber, 2021). Embracing a context-specific ontology enables the navigation into the complexities of research contexts, as seen in the psychology of religion, where naturalistic ontological assumptions influence the comprehension of specific phenomena (Slife and Reber, 2021) Moreover, ontological considerations extend to the realm of social sciences, where debates regarding the ontology of social objects and facts remain contentious (Strohmaier, 2021) Engaging with ontological inquiries allows researchers in the social sciences to deepen their comprehension of social phenomena's nature and enhance the theoretical underpinnings of their research.

In this study, the researcher has adopted a blended interpretive and constructivist ontology. The researcher sees reality not as fixed or objective but as socially constructed through language, interaction, and relationships. In the context of project teams, domains like trust or commitment are not 'out there' to be discovered; they are co-created through conversation. This aligns strongly with the LAP, which sees language as performative and world-shaping.

4.3.4 Axiological Assumptions

Axiological considerations refer to the philosophical study of values and how they influence the research process. Axiology plays a significant role in guiding researchers in determining what is valuable, ethical, and worth pursuing within their studies. It involves reflecting on the values that underlie research questions, methodologies, and interpretations of findings (Monrouxe and Ajjawi, 2020).

In this study, this research is grounded in participation and transformation. The researcher wasn't just observing but was facilitating. The workshops were designed to help teams build trust and communicate better. The researcher values research that contributes something meaningful and practical, not just academically. My role was reflexive, and I acknowledged my professional experience as part of the inquiry process.

4.4 Research Approach

Research approaches in academic studies encompass various methodologies and techniques to investigate research questions and gather data. The primary research approaches commonly employed in educational research include quantitative, qualitative, and mixed methods approaches.

Quantitative research involves collecting and analysing numerical data to quantify phenomena, test hypotheses, and generalise findings. This approach emphasises objectivity, replicability, and statistical analysis to draw conclusions (Taherdoost, 2022). It is commonly used in business, economics, and psychology to measure variables and relationships. Qualitative research, on the other hand, focuses on exploring experiences, perceptions, and meanings through non-numerical data collection methods such as interviews, observations, and content analysis. This approach aims to understand complex social phenomena and is often used in education, sociology, and anthropology (Castellan, 2010).

Mixed methods research combines elements of both quantitative and qualitative approaches to provide a comprehensive understanding of research questions. The research used mixed methods to integrate numerical data analysis with qualitative data collection to gain deeper insights into

the research topic (Taherdoost, 2022). This approach is valuable in fields where a combination of quantitative and qualitative data is needed to address research questions effectively.

4.4.1 Quantitative Research

Quantitative research is a methodological approach in academic research that involves collecting and analysing numerical data to understand phenomena, relationships, or patterns. This type of research relies on quantifiable evidence and statistical methods to draw conclusions and make inferences.

Quantitative research aims to measure variables, test hypotheses, and generalise findings to a larger population (Xiao et al., 2021). It is distinguished by its emphasis on objectivity, replicability, and statistical analysis. Researchers using quantitative methods often employ surveys, experiments, or observational studies to gather data that can be quantified and analysed using statistical techniques. This approach allows researchers to identify trends, correlations, and associations within the data (Levine et al., 2017). Quantitative methods are commonly used to assess the effectiveness of interventions, measure achievements, or explore relationships between variables (Bryman, 2016).

4.4.2 Qualitative Research

Qualitative research is an approach in academic research that focuses on exploring experiences, perceptions, and meanings through non-numerical data collection methods such as interviews, observations, and content analysis. This method aims to understand complex social phenomena in-depth and is characterised by its less structured, more open-ended, and flexible nature than quantitative research (Lekan, Collins and Hayajneh, 2021). Qualitative research allows researchers to delve into the nuances of human behaviour, beliefs, and interactions, providing rich and detailed insights into the studied phenomena (Aspers and Corte, 2019).

In qualitative research, researchers engage in an iterative process. They aim to improve understanding within the scientific community by making new significant distinctions and getting closer to the phenomenon under study (Aspers and Corte, 2019). This iterative nature of

qualitative research allows for exploring diverse perspectives, emerging unexpected findings, and generating new knowledge (Meyrick, 2006).

Qualitative research is precious in sociology, anthropology, and psychology, where understanding human experiences and social dynamics is essential. By employing qualitative methods, researchers can capture the complexity and contextuality of phenomena, offering a holistic view of the subject of study (Callary et al., 2023). This approach enables researchers to uncover underlying meanings, patterns, and relationships that quantitative methods may not reveal.

4.4.3 Mixed Research

Mixed methods research integrates quantitative and qualitative methodologies to understand a research question or phenomenon comprehensively. This approach combines quantitative and qualitative data collection, analysis, and interpretation within a single study or related projects (Bailey, 2022). By merging quantitative and qualitative methods, mixed methods research aims to leverage the respective advantages of each approach to enhance the depth and breadth of understanding.

Mixed methods research allows researchers to triangulate findings, validate results, and gain a more holistic perspective on the research topic. By integrating diverse data sources and analytical techniques, researchers can address research questions from multiple angles, leading to a more robust and nuanced interpretation of the data (Turistica, 2021). This approach is particularly valuable in complex phenomena requiring a multifaceted investigation. Researchers using mixed methods may employ various research designs, such as sequential explanatory, sequential exploratory, convergent, or embedded designs, to effectively combine quantitative and qualitative data (Fetters and Molina-Azorin, 2017). Each design offers a structured framework for integrating different data types and methods coherently and systematically.

4.4.4 Justification of Qualitative Research

A qualitative research approach is justified for several reasons. Firstly, qualitative research provides tools to better understand individuals' experiences, feelings, and thoughts (Yazıcı and

Fidan, 2020). This approach allows researchers to delve into the nuances of human behaviour, perceptions, and interactions, offering rich and detailed insights into the studied phenomena.

This is critical in this research because we are exploring the human interactions and responses to the LAP training modules.

Secondly, qualitative research is valuable when the research focuses on the "how question" or aims to explore processes, meanings, and contexts (Sarma, 2017). It is applicable in this research as it focuses on how a deeper understanding of the LAP can create more trust and reliable project commitments. This method is particularly suitable for investigating complex social phenomena where understanding the underlying reasons and motivations is essential.

Additionally, qualitative research is crucial for establishing norms, values, and belief systems within organisations that cannot be easily measured quantitatively (Huragu and Chuma, 2019). In this research, we examine how the LAP workshops can shift the cultural elements of trust and reliable promise by creating a new norm for how teams engage in conversations around speech acts, moods, and listening.

Researchers can uncover the underlying cultural aspects that influence organisational performance and dynamics using qualitative methods. Overall, qualitative research is justified for its ability to provide in-depth insights, explore complex phenomena, and uncover underlying meanings and motivations that quantitative methods alone may not capture effectively. In this research, we are investigating the social complexity of how language can modify our way of being on projects to shift toward a commitment-based approach that focuses on managing outcomes, not activities.

4.5 Qualitative Research Designs

Qualitative research designs encompass a variety of methodologies used to explore and understand complex phenomena. These methods include phenomenology, which focuses on uncovering the essence of individuals' lived experiences and perceptions; grounded theory, which develops a theory based on empirical data; ethnography, which studies people and cultures in their natural settings; case studies, providing an in-depth exploration of single or few cases,

narrative analysis, emphasising storytelling and embedded meanings, content analysis, systematically analysing textual data for patterns and themes, and discourse analysis, examining language use and meaning construction in social interactions. These qualitative approaches offer researchers diverse tools to delve into the intricacies of human experiences, behaviours, and social contexts, providing rich insights and nuanced understandings of the phenomena under investigation (Bryman, 2016).

4.5.1 Grounded Theory Research

Grounded theory research is a qualitative research methodology that aims to develop theory by finding patterns, themes, and categories based on empirical data collected directly from the research participants. This approach is characterised by its inductive nature, where theories emerge from the data rather than being imposed deductively (Kristiana et al., 2019). Grounded theory is particularly suited for exploring complex social phenomena, as it allows researchers to develop theories grounded in the data and reflective of the participants' perspectives and experiences (Martins et al., 2012).

One of the critical principles of grounded theory is theoretical sampling, where data collection and analysis co-occur to refine and develop emerging theories (Walker and Myrick, 2006). This iterative process involves constant comparison of data to identify similarities and differences, leading to the generation of concepts and categories that form the basis of the emerging theory (Cagnetta and Cicognani, 1999). Grounded theory research emphasises the importance of remaining open to new insights and allowing the data to guide theoretical development (Pulla, 2016).

Moreover, grounded theory research is known for its flexibility and adaptability, allowing researchers to explore diverse research questions and contexts. By incorporating reflexivity and relationality, researchers can enhance the rigour and credibility of their grounded theory studies (Hall and Callery, 2001). This methodological approach enables researchers to deeply understand the phenomena under investigation and generate a theory firmly rooted in empirical data (Baker, Wuest and Stern, 1992).

4.5.2 Phenomenology Research

Phenomenology research is a qualitative methodology that explores and understands individuals' lived experiences and perceptions. This approach seeks to uncover the essence of phenomena as they are subjectively experienced by individuals, emphasising the importance of capturing the unique perspectives and meanings attributed to those experiences (Paley, 2017). Phenomenology research is often used to understand individuals' subjective experiences, which is essential for developing insights and theories (Rapport and Wainwright, 2006).

One of the critical aspects of phenomenology research is its emphasis on bracketing, which involves setting aside preconceptions and biases to approach the phenomenon with fresh eyes and an open mind (Binnie et al., 2021). By suspending judgment and focusing on the essence of the lived experience, researchers can gain a deeper understanding of the phenomenon under investigation (Suddaby, 2011).

Phenomenology research aims to uncover the underlying structures and meanings of experiences, allowing for a rich and detailed exploration of human consciousness and perception (Tuohy et al., 2012).

Phenomenology research often involves in-depth interviews, observations, and reflective practices to capture the essence of participants' experiences (Burns and Peacock, 2019). Researchers using phenomenology strive to uncover the underlying meanings, patterns, and relationships that shape individuals' experiences, leading to rich and nuanced interpretations (Baker, Wuest and Stern, 1992). By immersing themselves in the participants' world and exploring the intricacies of their experiences, researchers can generate insights that contribute to a deeper understanding of human phenomena (Fendt et al., 2014).

4.5.3 Case Study Research

A case study as a research methodology involves the in-depth and systematic examination of a specific instance or phenomenon within its real-life context (Yin, 2018). The case study methodology is beneficial for examining intricate issues, behaviours, or processes within their natural settings, providing rich and detailed insights into the research topic (Yin, 2018). Case study research is widely utilised in various disciplines, including management science, nursing

research, and social sciences, due to its ability to capture the complexities and nuances of real-world situations (Yin, 2018).

It allows researchers to study complex phenomena within their contexts, making it particularly useful for studying phenomena in a team setting to examine social interactions between team members. Case studies involve intensively studying single or multiple cases to understand the subject matter comprehensively. This research selected the Case study methodology to examine specific teams within specific projects. Case study research has been viewed as a qualitative research methodology, and it is considered flexible, using a mix of qualitative and quantitative evidence (Yin, 2018). In this research, the methodology relied primarily on qualitative methods, including interviews and observations, but also included a small sample size survey to measure key research questions before and after the case study workshops. The methodology of case study research is multifaceted and can be undertaken using various stances, approaches, and methods, including qualitative and quantitative methods. It can investigate one or multiple cases (Yin, 2018). Two case studies were conducted in this research, and a cross-case analysis of the cases was performed.

Moreover, the case study methodology has been introduced as a critical, reflexive approach to case study research, where the case is constructed through a dynamic interaction with participants, and knowledge is produced through examining the case study findings (Yin, 2018). This research used case studies to investigate how training participants in the fundamental elements of the LAP could improve the following areas.

Qualitative research designs offer a range of methodologies to explore and understand complex phenomena. Researchers can choose between single-case and multiple-case approaches when considering case study designs. Single-case studies are valuable for richly describing the existence of a phenomenon, while multiple-case studies typically provide a stronger foundation for theory building. Single-case designs are essential for explaining cause-and-effect relationships and can be crucial in evidence-based practices. On the other hand, multiple case studies allow for comparisons across cases, generating in-depth, multi-faceted understandings of complex issues in real-life contexts (Yin, 2018).

4.5.4 Ethnography Research

Ethnography is a qualitative research methodology involving observations, interviews, and documentary data to produce detailed and comprehensive accounts of different social phenomena. Ethnography aims to provide an in-depth understanding of individuals lived experiences and perceptions within their natural settings. Researchers engage in immersive fieldwork to explore cultural practices, social interactions, and the meanings attributed to these experiences. Ethnography allows researchers to capture the essence of social phenomena by critically accounting for the researcher's self-location, interests, assumptions, and life experiences that shape their relationships with study participants and the research process itself. This approach is valuable for studying complex social issues, cultural practices, and healthcare delivery, offering insights into the intricacies of human behaviour and social contexts. Ethnographic research provides a rich and nuanced understanding of the phenomena studied, contributing to advancing knowledge in various fields (Bryman, 2016).

4.5.5 Action Research

Action research is a methodology that has gained increasing importance in various fields, including management, health research, nursing, education, and social endeavours. It is characterised by its participatory nature, aiming to produce knowledge and bring about practical change. Action research is not a single method but a flexible approach that can be adapted to different contexts and research questions (McNiff and Whitehead, 2011).

Action research is particularly valued for its ability to bridge the theory-practice gap, directly influencing and improving practice without the mediation of theory (McNiff and Whitehead, 2011). Participatory action research was selected for this research in part because the workshops were based on practices developed in the industry around training project teams in the LAP.

This methodology is deeply rooted in collaboration and participation, involving stakeholders and participants in the research process. It is a responsive research practice, reflecting on alternative forms of knowledge co-production through methods and participatory approaches (McNiff and Whitehead, 2011). Furthermore, action research is considered a methodology for

theory development, leading to deep conceptualisations about what can happen in practice and the reasons for this, thus contributing to the development of new theories and concepts (McNiff and Whitehead, 2011).

In this research, the workshops were collaborative, and the researcher observed participants participating in the exercises that were part of the modules. The conversations inside the modules were generative and produced new realities for the team around commitments and trust.

Despite its practical orientation, action research is full of scientific merit. It is placed within the framework of new paradigm research, addressing questions concerning its scientific value and idealistic significance in various fields such as nursing, management, and education (McNiff and Whitehead, 2011). Moreover, action research is increasingly recognised as a methodology that utilises qualitative research methods, focusing on the perspectives of participants and social actors and often taking the form of case studies of specific situations helpful to practitioners (McNiff and Whitehead, 2011). The participants' perspectives were a critical part of the workshop experience as participants began engaging in deeper conversations, and new opportunities opened to explore complex issues around trust and commitment that had not been discussed openly.

Action research is a research methodology that involves a collaborative and iterative problem-solving process within a specific context, often conducted by individuals within the organisation or community being studied. Initially defined as a method to apply social science theories in practice and test their practical effectiveness, action research emphasises the application of research findings to drive organisational change and improvement (McNiff and Whitehead, 2011).

While valuable for producing practical insights and real-time learning, action research presents several challenges. Chief among them is the difficulty of maintaining researcher neutrality while actively participating in the intervention, which can blur the line between observation and influence. Additionally, action research requires flexibility and responsiveness to evolving group dynamics, making standardisation and replication difficult. The emotionally charged nature of topics like trust and commitment can also surface resistance or defensiveness among

participants, requiring careful facilitation and ethical sensitivity. Despite these challenges, the immersive nature of action research provided a depth of understanding that would have been difficult to achieve through detached methods (McNiff and Whitehead, 2011).

In this study, these challenges were managed through transparent communication of the researcher's dual role and creating a psychologically safe environment that encouraged honest reflection without fear of judgment.

4.6 Justification of Chosen Research Design

This research is designed as a qualitative case study that incorporates action research methods to explore the impact of the LAP on trust, communication, and team coordination in lean construction projects. The case study approach allows for an in-depth, contextual analysis of two real-world project teams. In addition, action research methods enable the researcher to engage participants in the workshops, applying and reflecting on LAP principles. This approach ensures that the study captures both the lived experiences of project teams and the effects of intentional, language-based interventions (Yin, 2018).

While qualitative case studies aim to understand complex social phenomena within bounded contexts through interviews, observations, and document review, action research methods allow the researcher to be involved in the research as an active participant. In this study, the workshops functioned as the primary vehicle for action research, allowing participants to engage with LAP concepts in a workshop setting (Yin, 2018).

Combining action research methods with multiple case studies can be justified for several reasons. Action research involves a collaborative approach to problem-solving and continuous improvement, making it well-suited for addressing practical issues in real-world settings (Mckay and Marshall, 2001). By integrating action research methods with multiple case studies, researchers can comprehensively understand complex phenomena by examining them across different contexts and situations (Dubois and Gadde, 2017). This combination allows for exploring diverse perspectives, variations, and commonalities within and across cases, enhancing the depth and richness of the research findings (Lee, Baskerville and Pries-Heje, 2015).

Using multiple case studies in conjunction with action research also enables researchers to test and refine interventions or solutions in various settings, leading to more robust and generalisable outcomes (McNiff and Whitehead, 2011). By employing this hybrid approach, researchers can leverage the strengths of both methodologies to drive meaningful change, generate new knowledge, and contribute to the advancement of practice and theory in their respective fields (Ma et al., 2018).

Action research methods are associated with reflective practice, emphasising the iterative nature of problem-solving and change within specific contexts. This aligns with the view that action research allows for the practical application and testing of theories in real-world settings, making it a valuable methodology for driving organisational improvement. This was applicable in this research as the aim was to change teams' ability to build trust and make reliable commitments (McNiff and Whitehead, 2011).

Action research methods and case studies provide robust methodological rigour and quality assurance frameworks. These methodologies allow researchers to engage with stakeholders, address practical challenges, and generate knowledge that can lead to tangible improvements (McNiff and Whitehead, 2011). Case studies can be used with an action research methods framework to address real project issues and demonstrate this methodology's practical application in real-world contexts. (Yin, 2018).

A qualitative strategy was chosen over a mixed methods approach to enable a deeper exploration of participants' experiences, perceptions, and meanings in relation to the research topic. Given the study's exploratory nature, the emphasis was on understanding the complexity and nuance of human behaviour and social contexts related to team communication, which is best captured through rich, descriptive data. A mixed methods approach was deemed unnecessary, as the addition of quantitative measures would not have significantly enhanced the interpretive goals of the research and could have diluted the depth of qualitative insight (Bryman, 2016).

Overall, the combination of action research and case studies provides a robust methodological approach to engaging with stakeholders, driving organisational change, and generating practical

solutions to complex issues often present in the design and construction world. Because this research was focused on the human experience of doing project work, these research methodologies produced the most effective data to evaluate the effectiveness of the focus group workshops in achieving the research goals.

4.6.1 Design of the Case Study Aspect

Multiple case studies are justified in research for several reasons to address the research questions in Table 4.1. First, they allow for comparing findings across different cases, providing a broader understanding of the phenomenon under investigation (Yin, 2018). By examining multiple cases, researchers can identify patterns, similarities, and differences that may not be apparent in a single case study, leading to more robust and generalisable conclusions.

Additionally, multiple case studies enable researchers to test the validity and reliability of their findings across different contexts, enhancing the credibility and trustworthiness of the research outcomes (Yin, 2018). Moreover, employing multiple case studies can help researchers identify common themes, variations, and unique aspects within and across cases, contributing to a more nuanced and detailed analysis of the research topic (Yin, 2018).

Overall, using multiple case studies in research provides a holistic and in-depth exploration of complex phenomena, offering valuable insights and contributing to the advancement of knowledge in various fields.

Table 4.1: Research questions

Research Questions	Method of Data Collection
How does the Language Action Perspective (LAP) influence communication practices, specifically the clarity of requests, reliability of promises, and coordination of commitments within construction project teams?	Observations, Interviews and Survey
How does applying the LAP contribute to building trust and improving collaborative performance in lean construction project environments?	Observations, Interviews and Survey
How can the LAP be used to produce better overall communication within project teams?	Observations, Interviews and Survey

4.6.2 Case Study Selection Criteria

When selecting the construction and design teams for this case study research, several selection criteria were considered to ensure the relevance and effectiveness of the teams selected. The first criterion was to choose diverse teams that included owners, contractors, designers and trade contractors to capture a range of communication behaviours and dynamics (Reza H. et al., 2017).

The second criterion was to choose teams based on their potential to provide insights into effective communication strategies, challenges, and outcomes within construction project teams (Reza H. et al., 2017). This was achieved by selecting teams that had been working together for a few months so they could more easily recognise the value of continuing to work on trust and communication. It was also essential to select teams that had been working together for at least a few months to ensure that observable patterns of communication, trust, and collaboration had begun to form, to ensure that the findings from the workshops accurately assessed the impact of the LAP on team communication dynamics. Teams in the early stages of forming relationships often lack the established dynamics necessary for evaluating the effect of interventions like the LAP workshops. By selecting teams with some shared history, the researcher could more accurately assess the influence of the intervention on existing behaviours rather than attributing natural team formation processes to the effects of the training. This also ensured that participants had enough contextual knowledge of each other and the project to engage meaningfully with concepts like commitments, speech acts, and trust domains (Reza H. et al., 2017).

The third criterion was the availability of team members and the feasibility of conducting in-depth observations and interviews within the project team (Reza H. et al., 2017).

Furthermore, the selection of cases should cover various construction project types, sizes, and locations to enable comparisons and generalisations across different scenarios (Reza H. et al., 2017). For these case studies, we selected a healthcare project that was about six months into the design process and had six months of design left, in addition to a multi-year construction timeline. The other case was a pharmaceutical project that was about eight months into the design process and was entering the final design phase as construction activities began.

4.6.3 Design of the Action Research Aspect

Action research methods are valuable for investigating complex issues in real-world settings, such as organisational change, patient care teams, and inclusive education. It allows researchers to actively engage with stakeholders and address practical challenges (McNiff and Whitehead, 2011).

The case studies used in this research were conducted on real projects that were already deep into the design and construction phases. Action research is characterised by its focus on development and change in social situations, aiming to bring about improvements directly through reflective processes and interventions (McNiff and Whitehead, 2011). The participants' workshop was designed to produce a new understanding of a holistic communication model. It included a brief history of the LAP discovered in the literature review.

Participants learned the fundamentals of the speech acts as developed by John Searle and J.L. Austin. The exercise included exploring the speech acts in real conversations. These exercises were based on Flores's work and on work connected to his that was explored in Chapter Two.

The workshops aimed to test whether training participants embedded in the LAP, as shown in Table 4.2, would produce a positive shift in the level of trust in the project, improve the reliability of commitments made, produce clearer requests, and improve the effectiveness of meetings. The workshop was designed around the following themes from the literature reviewed in Chapter Two.

Table 4.2: Workshop topics and links to the literature

Module	Workshop Topic	Literature Background	Literature Review Section Referenced
Module One	Introduction to the LAP	Based on the history of the LAP and the historical use of the LAP in lean construction	Section 2.2 and 2.3
Module Two	Speech Acts	Based on the work of John Searle and Fernando Flores	Section 2.4
Module Three	Moods and Emotions	Developed around the ideas of Martin Heidegger and Fernando Flores	Section 2.10
Module Four	Team Assessment Exercise	Exercise developed by Fernando Flores to teach teams how to give positive and assessments for improvement to each other.	Section 2.5

Module Five	Listening	Based on the literature reviewed, this was developed to test how an understanding of the speech acts can improve our ability to listen. Also, the work of Heidegger to establish that our historicity is the foundation for effective listening	Section 2.11
Module Six	Trust	Exploring how conversations can produce a higher level of trust within teams. Trust is built, maintained and repaired in conversations with others.	Section 2.9

The workshop was 12 hours long and designed to be delivered in either six 2-hour workshops or one one-hour workshop lasting 1 ½ days. When delivering the workshop in six 2-hour sessions, it was challenging to keep a team of people together for six separate sessions and create a workshop schedule that accounted for conflicts among the participants. Organising the workshops around holidays, sick days, and other project commitments was challenging. Finding a consistent space for all six sessions was also difficult to provide a consistent environment for the workshops. However, the time between the workshops gave the participants time to reflect on the workshop topics and exercises.

When delivering the workshops in the twelve-hour format, they were conducted over 1 ½ days. Although giving up 1 ½ days on a project was challenging, keeping that group together for the workshop proved far more accessible. The participants appeared to have moments of mental and physical exhaustion due to the intensity of the workshops. Furthermore, some participants seemed anxious about being disconnected from the project for 1 ½ days straight. The researcher had to be more disciplined in keeping participants off their phones and computers and allowing for extended breaks so participants could check in and make phone calls.

4.7 Methods of Data Collection

Qualitative data collection methods such as surveys, direct observations, and interviews are crucial for gathering comprehensive data for research purposes. Interviews are versatile and extensively used across various disciplines for data collection. They are frequently employed in qualitative research due to their effectiveness in eliciting participant responses and behaviours (Bryman, 2016).

Direct observations are another valuable qualitative data collection method involving observing and documenting behaviours, interactions, and phenomena in their natural settings. Observations and interviews are commonly used techniques in qualitative research. They provide researchers

with firsthand insights into the behaviours and characteristics of subjects under study. Observations are beneficial for studying social interactions, behaviours, and contexts (Bryman, 2016).

Surveys are structured data collection tools that gather information from a sample of participants through standardised questionnaires or forms. They efficiently collect data on participants' attitudes, opinions, and experiences before or after a workshop (Bryman, 2016).

Multiple safeguards were implemented to reduce the risk of researcher bias during data collection and analysis. A structured observation template was used to capture behaviours consistently (see Appendix 1.1) and consistent communication patterns across sessions, minimising interpretive drift. Semi-structured interviews with an interview template (see Appendix 1.2 and 1.3) ensured that participants could share their perspectives freely while allowing the researcher to compare responses across cases. Data triangulation was employed by cross-referencing themes that emerged from interviews, observations, and pre-/post-workshop surveys to validate findings and enhance credibility. Additionally, reflexive journaling was used to monitor the researcher's assumptions and interpretations, fostering critical self-awareness throughout the study. These strategies collectively strengthened the trustworthiness and validity of the research outcomes (Bryman, 2016).

4.7.1 Interviews

Interviews allow researchers to delve deeply into participants' experiences, thoughts, and perspectives (Rossetto, 2014). They enable researchers to establish rapport, explore complex issues, and generate rich, detailed data that can lead to a profound understanding of the research topic. The role of interviews in qualitative research is diverse and essential for various aspects of the research process. Interviews are a valuable method for collecting data, allowing researchers to delve into participants' perspectives, experiences, and behaviours (DiCicco-Bloom and Crabtree, 2006). Through interviews, researchers can gain insights into individuals' lived experiences, beliefs, values, and motivations and understand the complexities of human interactions (DiCicco-Bloom and Crabtree, 2006).

Interviews allow researchers to establish rapport with participants, fostering an environment conducive to open and honest dialogue (McGrath, Palmgren and Liljedahl, 2019). This interpersonal connection builds trust and encourages participants to authentically share their thoughts and feelings, resulting in detailed and rich data that can significantly contribute to research findings (McGrath, Palmgren and Liljedahl, 2019).

The interviews conducted before the focus group workshop allowed the participants to see the researcher as a human being. This built a level of trust, producing a more open environment in the workshops. Additionally, interviews enable researchers to explore specific topics in-depth, ask follow-up questions, and clarify responses, facilitating a comprehensive examination of the research subject (Gill et al., 2008). Engaging in qualitative interviews allows researchers to capture nuanced information, explore diverse perspectives, and generate detailed data that enhances understanding of the research phenomenon (Gill et al., 2008).

Structured, semi-structured, and unstructured interviews are commonly used in research and clinical settings. Structured interviews follow a predetermined set of questions in a standardised manner (Roghani and Rahman, 2017). They are known for their reliability and consistency in data collection (Connelly and Ones, 2010).

Semi-structured interviews involve a prepared set of questions but allow for flexibility in probing and exploring additional avenues based on the respondent's answers (DiCicco-Bloom and Crabtree, 2006). This format combines elements of both structured and unstructured interviews (Styliidis et al., 2014). Unstructured interviews need a formal set of questions, giving interviewees more freedom to express themselves (Bekzhanova and Makoelle, 2022). While structured interviews are often considered more reliable and valid than unstructured or semi-structured interviews in some contexts (Cox *et al.*, 2015), the choice of interview format depends on the research objectives and the depth of information required (Erciyes, 2019).

A semi-structured interview approach was used for this research. See Appendix 1.2 and 1.3 for the interview template used. A semi-structured interview approach was selected to provide

consistent questions to gather data. Still, it allowed the researcher to pursue some lines of questioning in more depth to explore the specific team dynamics before the workshop.

4.7.2 Direct Observations

Direct observations provide the researcher with real-time data on participants' behaviours and interactions in natural settings. This method allows for collecting detailed, context-specific data, enabling researchers to immerse themselves in the research environment and comprehensively understand social phenomena. Direct observations are fundamental to qualitative research, providing real-time data on participants' behaviours, interactions, and environments. Observation can be conducted in structured or unstructured ways, allowing researchers to capture detailed, context-specific data and immerse themselves in the research setting to profoundly understand the social phenomena under study (Mulhall, 2003). Because of the workshop format, the researcher used a direct observation method to observe the participants. An observer was present in the workshop and assisted in observing and taking notes using the template in Appendix 1.1.

Direct observations offer a unique opportunity to collect detailed and nuanced data that may not be easily captured through other data collection methods. Direct observation can yield quantitative and qualitative information, such as the frequency of specific activities and detailed descriptions of movements. This approach enables researchers to gain comprehensive insights into participants' experiences and behaviours (Løndal et al., 2020). The researcher noted recurring themes during the workshop, including comments from participants that constituted an emerging theme.

Direct observations enhance the credibility and trustworthiness of qualitative research findings. By directly witnessing and documenting phenomena, researchers can validate their interpretations and conclusions based on firsthand evidence (Kline, 2008). This method also allows for identifying subtle nuances, non-verbal cues, and contextual factors that enrich understanding of the research topic. Direct observations were also valuable in building trust with the workshop participants, which allowed them to open up and provoked a richer conversation within the workshops.

Using the template in Appendix 1.1 as a guide, the researcher focused on collecting real-time, contextual data on participants' behaviours, interactions, and responses during the workshops. The goal was to understand how team members reacted to different conversational dynamics, including their body language, positioning in the room, and the emergence of recurring themes in their dialogue. These observations aimed to capture subtle cues such as discomfort, openness, or shifts in group dynamics that might not surface in interviews or surveys.

The researcher also paid close attention to how participants engaged with the workshop content and exercises, allowing the researcher to track emerging patterns and validate themes identified in pre-workshop interviews.

Participants may have experienced adverse reactions to being observed, such as discomfort, self-consciousness, or altered behaviour due to awareness of scrutiny. These effects, often referred to as the observer effect, can inhibit openness and authenticity during interactions, particularly in emotionally charged or trust-sensitive contexts like the workshops (Kline, 2008). These effects were mitigated through transparent communication about the researcher's role, using a non-intrusive observation template (Appendix 1.1), and embedding the researcher within the natural flow of the workshops to foster a sense of normalcy and reduce perceived scrutiny. The pre-workshop interviews also served as a place to build trust and comfort with the researcher. These measures helped ensure that the observational data reflected authentic participant behaviour, enhancing the findings' validity and contextual richness.

4.7.3 Surveys

Surveys offer a structured approach to data collection, allowing for quantitative and qualitative insights. This highlights the constructivist approach's enhancement of theoretical sensitivity (Bryman, 2016).

In qualitative research, surveys are utilised as a data collection method to gather detailed descriptive data from a few participants, enabling researchers to explore individuals' perspectives, experiences, and behaviours within a specific context (Bryman, 2016). Surveys in qualitative research do not necessitate an initial hypothesis or statistical methods; instead, they

aim to offer a comprehensive understanding of the situation, often leading to theory generation and actionable recommendations (Bryman, 2016).

In this qualitative study, surveys played a supportive, diagnostic role. They didn't replace rich narrative data but helped structure the data analysis, triangulate my findings, and ensure my observations were grounded in participants' own self-assessments. This aligns with the principles of methodological triangulation and enhances the study's overall credibility (Bryman 2016).

The surveys provided a low-effort entry point for participants to reflect on their team environment, especially for those who might not be as vocal in interviews or workshops. These were not used to make statistical claims but rather to inform the narrative around team dynamics and support qualitative themes. This study's primary use of surveys was to investigate the transformative experience of going through workshops (Bryman, 2016).

Qualitative data collection methods, such as surveys, can be employed to investigate transformative learning experiences. Through engaging participants in surveys, researchers can identify themes related to authenticity, participation in a community of practice, supervision, reflection, and distance support, offering valuable insights into the impact of educational initiatives (Bryman, 2016). The survey data supported the workshop observations that pointed to a positive change in all the research aims and objectives in section 1.5.

Surveys using the questions in Appendix 1.4 were sent to all workshop participants before and after the workshops. All workshop participants returned the survey.

4.8 Methods of Data Analysis

The data analysis process for this study was designed to integrate findings from multiple qualitative sources, enabling a comprehensive understanding of the research questions. Three primary data sources informed the analysis: interviews conducted before and after the workshops, direct observations during workshops and meetings, and pre- and post-workshop surveys. These complementary datasets allowed for triangulation of findings, strengthening the credibility and validity of the results (Palinkas et al., 2015).

Qualitative content analysis served as the central analytical approach across all datasets. This method provides a systematic, transparent, and replicable process for identifying patterns, themes, and meanings within textual and observational data (Bryman, 2016; Hsieh & Shannon, 2005). Content analysis can be deductive, drawing on pre-existing theoretical frameworks, or inductive, allowing themes to emerge directly from the data. In this study, both approaches were applied to themes from interviews that informed the analysis of workshop observations, while open coding was used to capture emergent insights.

The analysis process began with reviewing interview transcripts to identify initial themes related to the challenges faced by project teams. These themes informed the structured observation templates used during workshops, enabling focused examination of participant behaviours, interactions, and contextual factors. Observational findings were then cross-referenced with the interview data and survey responses to identify converging or diverging trends. Survey data was used to measure changes around the key themes that the workshops addressed

By combining multiple data sources within a single analytical framework, this study ensured that the interpretation of results was grounded in rich, contextually informed evidence. The following subsections (4.8.1–4.8.3) outline in detail how each dataset was analysed and integrated into the overall findings.

4.8.1 Qualitative Analysis

Qualitative analysis in this study focused on uncovering the patterns, relationships, and meanings embedded in participants' experiences, behaviours, and interactions. This approach is essential in action research, as it allows the researcher to capture the richness and complexity of human perspectives that may not be evident in quantitative measures alone (Bryman, 2016; Babchuk, 2019).

Content analysis, as outlined in Section 4.8, provided the methodological foundation for examining qualitative data from interviews, direct observations, and open-ended survey responses. (Bryman, 2016; McNiff & Whitehead, 2011). Both deductive and inductive strategies were applied throughout the process. Deductive coding drew on pre-identified themes from the

interview phase to guide the analysis of subsequent datasets. In contrast, inductive coding allowed new patterns to emerge directly from the observational and survey data, ensuring responsiveness to unanticipated findings.

In practice, the analysis moved iteratively between datasets, comparing themes identified in interviews with patterns observed during workshops, and then cross-referencing these with survey findings. This process enabled the identification of converging trends that reinforced the credibility of results, as well as divergent perspectives that offered more profound insight into the case study context. The integration of qualitative insights across multiple sources informed the development of theoretical understandings. It provided a nuanced picture of communication dynamics, trust-building, and collaborative problem-solving within the project teams.

4.8.2 Analysis of Interview and Observation Data

Interviews conducted before the workshops provided an initial understanding of the challenges and dynamics within each project team. The transcripts were reviewed in detail and coded using content analysis, a systematic approach that enables the identification of recurring themes and patterns within qualitative data (Bryman, 2016). This process highlighted participants' experiences, concerns, and expectations, and the emerging themes were documented to inform the focus of subsequent workshop observations.

Workshop and meeting observations were recorded using structured templates designed to capture verbal exchanges, non-verbal cues such as body language, and contextual factors influencing team interactions (Bryman, 2016). Content analysis, as described by McNiff and Whitehead (2011), was again applied to these observation notes, allowing for the categorisation of behaviours, responses, and communication patterns. Maintaining consistent coding categories across both interviews and observations made it possible to compare what participants described in interviews with how they engaged during the workshops.

This cross-referencing of interview and observation data facilitated the identification of alignments and discrepancies between stated perceptions and observed behaviours. Such comparisons provided insights into trust-building processes, communication dynamics, and the

effectiveness of the interventions implemented during the workshops. Integrating these two data sources in this manner enhanced the robustness of the analysis and offered a deeper understanding of the case study context (Bryman, 2016).

4.8.3 Analysis of the Survey Data

The pre- and post-workshop surveys provided both quantitative measures and qualitative insights into participants' experiences. While the numerical data were examined separately, the open-ended responses were analysed qualitatively using the content analysis framework described in Section 4.8. This approach allowed for the systematic identification of patterns, themes, and meanings within participants' written feedback (Hsieh and Shannon, 2005).

Following the procedures outlined by Palinkas et al. (2011), survey responses were reviewed in detail and coded into key concepts and categories. This process ensured that the analysis maintained rigour and credibility, while also enabling the detection of shifts in participants' perspectives throughout the workshops. Changes in the mean scores from the quantitative survey items were used to contextualise these qualitative findings, supporting the interpretation of trends and reinforcing the validity of the results.

The integration of survey data with findings from interviews and observations allowed for a multi-dimensional view of the case study context. In particular, the survey responses provided an additional layer of evidence for themes related to communication, trust, and collaborative problem-solving, complementing the insights gained from other data sources.

4.9 Research Validity and Reliability

Ensuring reliability and validity in qualitative research is crucial to uphold the credibility and trustworthiness of the findings. Reliability refers to the consistency and stability of research results, while validity pertains to the accuracy and truthfulness of the conclusions drawn from the data (Noble and Smith, 2015). In qualitative research, strategies enhance the study's credibility, contributing to the findings' reliability and validity (Noble and Smith, 2015).

To achieve validity and reliability in qualitative research, the researcher included rigorous processes such as interview and observation templates to provide consistent data, which are essential when multiple data sets are involved in the analysis (MacPhail et al., 2016).

Triangulation, prolonged engagement, reflection, peer review, and addressing researcher bias can be utilised to ensure the validity and reliability of qualitative research (Bryman, 2016). These methods help verify the accuracy and consistency of the data collected and analysed. Data collected through the pre-workshop interviews, observations, and surveys were compared and triangulated to develop clear findings on the workshop outcomes.

4.9.1 Ensuring Rigour in Qualitative Research

Ensuring rigour in qualitative research requires approaches that validate the trustworthiness of the findings without relying on the statistical measures typical of quantitative studies. This study adopted credibility, transferability, dependability, and confirmability criteria as a framework for ensuring quality, coherence, and reliability throughout the research process. These four dimensions were addressed systematically across this thesis's design, implementation, and analysis phases (Lincoln and Guba 1985).

Credibility, which parallels internal validity in quantitative research, was enhanced through data triangulation, combining interviews, observations, and pre-and post-workshop surveys to understand the participants' experiences comprehensively. The researcher also engaged in prolonged engagement and persistent observation across the workshop settings and interviews, building trust with participants and enabling more profound insight into team dynamics (Lincoln and Guba 1985).

Transferability, which is the extent to which findings can be applied in other contexts, was supported by robust descriptions of the case study settings, participant backgrounds, and organisational dynamics. By detailing the project conditions, participant roles, and communication challenges specific to each site, context was provided to the relevance of the findings (Lincoln and Guba 1985).

The research followed a transparent methodological process to address dependability, which relates to the consistency and repeatability of findings. A structured observation template and semi-structured interview guide ensured consistency in data collection. Additionally, reflexive journaling was used to monitor and evaluate the researcher's assumptions and stance, providing a consistent lens to reflect on the data collection experience (Lincoln and Guba 1985).

Finally, confirmability was addressed by emphasising analytical neutrality and grounding interpretations in direct quotes and observable behaviours. Coding was aligned with the research questions rather than predetermined theoretical categories, allowing participant experiences to guide thematic development. Reflexivity and documentation of analytic decisions further strengthened the objectivity of findings, ensuring they reflected participant insights rather than researcher bias. By attending to these four criteria: credibility, transferability, dependability, and confirmability, this study demonstrates methodological rigour and reinforces the trustworthiness of its qualitative findings (Lincoln and Guba 1985).

4.10 Ethical Considerations

Ethical considerations are crucial in qualitative research, especially in methodologies like action research, where the research process is closely linked to actions to benefit society (McNiff and Whitehead, 2011). Upholding ethical standards throughout the research process is essential to maintaining the study's integrity and safeguarding the well-being of participants. In this research, participants were made aware of the overall research aims and the consultant role the researcher played in the project. Ethical considerations are fundamental in qualitative research, ensuring the protection of participants, maintaining integrity, and upholding research ethics principles. Researchers conducting qualitative studies must adhere to ethical guidelines to safeguard participants' rights and well-being.

Key ethical considerations in qualitative research include obtaining informed consent from participants, maintaining confidentiality and anonymity, respecting participants' autonomy and dignity, prioritising beneficence and non-maleficence, ensuring transparency and trustworthiness in research practices, undergoing ethical review by an ethics committee or institutional review board, and engaging in reflexivity to reflect on biases and values throughout the research

process. By addressing these ethical considerations, researchers can conduct ethically sound studies, respect participants' rights, and contribute valuable insights to the research field (Bryman, 2016).

When conducting surveys for data collection in qualitative research, it is essential to adhere to various ethical considerations to safeguard the well-being of participants. Key aspects include obtaining informed consent from participants, ensuring they are fully informed about the study's purpose, potential risks and benefits, confidentiality measures, and voluntary participation (Bryman, 2016). Maintaining confidentiality and anonymity of participants' responses is crucial to protect their privacy and ensure data security. Researchers should uphold participants' autonomy and dignity throughout the survey, respecting their rights and perspectives. Additionally, prioritising beneficence and non-maleficence is vital, aiming to maximise participant benefits while minimising potential harm or risks (Bryman, 2016). Transparency and trustworthiness in survey practices ensure participants are well-informed about the research process and can trust the study's integrity (Bryman, 2016).

When conducting interviews for data collection in qualitative research, it is crucial to consider several ethical aspects to safeguard the well-being and rights of participants. Securing informed consent from participants is fundamental, as well as ensuring their comprehension of the study's objectives, procedures, and voluntary involvement. Upholding participants' autonomy and dignity is paramount, necessitating researchers to maintain confidentiality and anonymity to safeguard their identities and personal details (Bryman, 2016). Emphasising beneficence and non-maleficence entails guaranteeing that the interview process does not inflict harm or discomfort on participants. Maintaining transparency throughout the interview process, including clearly outlining the purpose and procedures, is essential for building trust and upholding ethical standards (Bryman, 2016).

As part of the ethical commitment to protect participant privacy, all identifiable faces in photographs taken during workshops or observations were screened or blurred before any use in presentations or documentation. This measure aligns with best practices in research ethics, ensuring that individuals are not visually identifiable without explicit, documented consent. Protecting visual anonymity is particularly important in action research, where participants are

often photographed in real-time settings and serves to uphold trust and confidentiality throughout the research process (Bryman, 2016).

Ethical oversight by an institutional review board is indispensable to confirm that the interview methods align with ethical guidelines and standards. Engaging in reflexivity and ethical reflexivity allows researchers to contemplate their biases, assumptions, and values during the interview process, thereby enhancing ethical decision-making and research integrity (Bryman, 2016).

4.10.1 University Ethics Process

The Nottingham Trent University Ethics Process involves obtaining ethical approval from the university's Ethical Review Committee or the School of Social Sciences Research Ethics Committee for research studies involving human participants. Researchers must adhere to ethical guidelines and principles to ensure the participants' protection, safety, and well-being. Each participant must typically provide written informed consent before participating in the study to ensure they are fully aware of the research procedures and their rights.

4.10.2 Data Security

Data management practices, including data storage, record-keeping, and ownership protocols, are crucial for maintaining data security in qualitative research (Liu, 2009).

Handling data security in research is a critical aspect that requires meticulous attention to protect research data's confidentiality, integrity, and availability. Various strategies can be implemented to ensure data security in research. Secured access control is essential to restrict unauthorised access to databases and safeguard the data's confidentiality and privacy (Vlahou et al., 2021). The data was stored on a private cloud storage account that only the researcher could access for this research.

Following established guidelines and protocols can help researchers mitigate potential risks associated with data collection and storage (Kalkman et al., 2022). For this research, the protocol followed was that only the researcher had access to the data. The workshop observer was given

a separate folder to store the observation notes. Those notes were moved to a secure cloud storage location that only the researcher could access.

4.10.3 Researcher Reflexivity

The purpose of the reflexivity statement in this thesis is to acknowledge the researcher's dual role as both facilitator and investigator within the studied project environments. Given the participatory nature of the action research approach and the close engagement with construction and design teams, reflexivity is essential for recognising how the researcher's professional background, beliefs about communication, and prior experience with lean construction and the LAP may have influenced the data collection, interpretation, and interactions with participants (Bryman, 2016).

As a researcher embedded in both professional practice and academic inquiry, my engagement with this study is shaped by a dual perspective—one rooted in my lived experience as a practitioner in the construction industry and another informed by a growing theoretical and philosophical understanding of organisational communication and team dynamics. This dual orientation has played a formative role in shaping this research's design, interpretation, and presentation.

In conducting this study, I recognised the importance of reflexivity as a methodological stance and a core principle within the LAP. The concept that our language creates our social world, rather than merely describing it, deeply resonated with my own professional experiences. Over the years, I have observed how vague commitments, unspoken expectations, and misaligned communication undermine project performance. These observations provided the practical impetus for exploring how teams can transform communication through explicit requests, reliable promises, and trust-building conversations.

However, my professional identity, values, and expectations may have influenced how I interpreted data, facilitated workshops, and evaluated outcomes. For example, my predisposition towards collaborative approaches may have led me to privilege narratives that supported transformation through LAP interventions while being more critical of conventional, hierarchical project management methods. I worked to mitigate this bias by embracing participant

assessments, allowing the data to reflect the lived experience of the teams, especially when those narratives challenged my assumptions.

My roles as a researcher and workshop facilitator placed me in a dynamic role—an observer, a facilitator of change, and a participant in the unfolding team dynamics. While this may have introduced a degree of subjectivity, I leaned into the principles of action research, viewing these interactions as co-constructed rather than controlled. The workshops, designed around LAP principles, were as much about transformation as they were about inquiry, and I acknowledge that introducing these concepts may have influenced the outcomes being measured.

Throughout this study, I have attempted to remain open to what the data revealed. I found value in moments where trust was not immediately restored or communication breakdowns persisted, as these revealed deeper structural and cultural issues within teams.

Ultimately, this thesis is both a product of academic inquiry and a personal journey of understanding how language, trust, and commitment shape the lived experience of project work. By making the research process transparent, I hope to invite other scholars and practitioners alike into a reflective space where we reconsider how we build teams, deliver projects, and co-create the future of work in construction and beyond.

4.11 Summary

This chapter outlined a qualitative research approach to integrating multiple case studies and action research to examine the impact of the LAP on communication within construction project teams. Rigorous methods were employed, including content analysis of interviews, observations, and surveys, to ensure reliability and validity. Ethical considerations were carefully addressed, including obtaining informed consent, ensuring participant confidentiality, and mitigating potential biases through reflexivity. The research methodology enabled the researcher to conduct the workshops and collect data to create precise and repeatable findings on the impact the workshops had in improving communication and building trust.

Having established the methodological foundation, the next chapter presents the findings from Case Study One. Chapter Five describes the project background, participant selection, and the

observed changes in trust, communication, requests, and commitments following the LAP workshops.

Chapter Five: Action Case Study One Findings

5.1 Introduction

This chapter presents the research findings for Case Study One, aimed to investigate the theory that the LAP can build better-performing teams in a design and construction project that is already partially in the design phase. This case study examined how training a team of key leaders within the project in the LAP would change the team members' level of trust, the reliability of the commitments they made to each other, and improve the clarity of requests to each other. The findings presented in this chapter involved workshops conducted with two cohorts of selected project team members from Case Study One. This chapter contributes to research objectives three and four of the study.

5.2 Project Background and Case Study One Description

This test case pertains to a team that designed and constructed a 176,000-square-foot building expansion on an existing healthcare campus in Portland, Oregon, United States of America. The project was designed to include a neonatal intensive care unit, labour and delivery rooms, postpartum rooms, and antepartum rooms. It was also intended to include 22 beds for women's and children's care. At the time of the workshop, the project had a budget of \$325 million. The research was conducted in 2022.

The project team was comprised of a design team, an owner, and a contractor. The owner had a direct contract with the design team and the contractor, and there was no direct contractual link between the design firm and the general contractor.

The project team had been working together for several months before the case study workshop was conducted. During that time, the project faced several challenges due to funding issues and competition with other projects within the owner's health care system.

At the time of the workshop, the owner had a larger team than they usually would have on a project of this size. This was due to some extra staff being available and needing a project to

work on. The owner also relied on a contract employee to represent the owner as the lead project manager (PM). This caused discomfort within the owner's team as the direct reports to the contract PM were hospital employees.

The scope of this project was originally part of a larger project but, was pulled out to reduce the scope and budget of the original project. In pre-workshop interviews, there was some tension within the project team because the owner team members had worked on the original project and had participated in design conversations for over a year to plan this scope. The design team felt that the owner team was "looking over their shoulder" as they designed. They felt that they were being micromanaged and that the owner team was trying to duplicate the original design effort, and not allowing the design firm to put their creative stamp on the project. Even though this was a significant concern for the design team, they had not discussed how this impacted their ability to work with the rest of the team.

The owner team reported in pre-workshop interviews that they did not believe the design team was listening to them and what they wanted to achieve in the project. In their opinion, this led to design rework. However, the owner team acknowledged they had not had a serious conversation about their concerns.

The project structure was created to follow a typical IPD Structure with a Senior Leadership Team, Core Team and Project Execution Teams (see Figure 5.1). Figure 5.1 represents the leadership structure of the team and how the project's governance structure was organised.

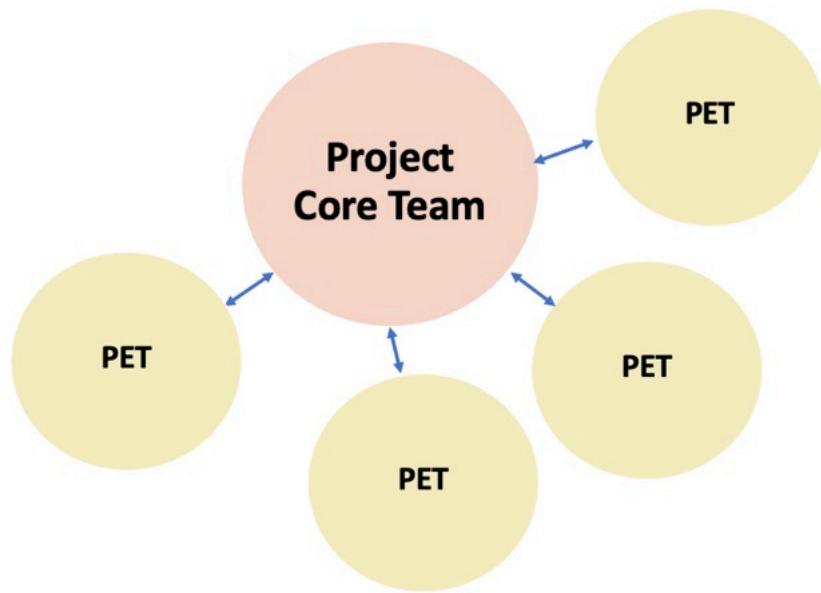


Figure 5.1: Project team structure for case study one

At the time of the workshop, the project had completed the Schematic Design phase and was working through a budgeting exercise to determine the current cost. Due to budget concerns, the design was paused to focus on the estimating process.

5.3 Participant Selection

This case study focused on people in leadership positions on the Project Core Team and the Project Execution Teams (PETs) as represented in Figure 5.1. The first workshop with Cohort One was conducted with the Core Team members, and a second workshop with Cohort Two was conducted with the PET leaders. Participants for both workshops are presented in Tables 5.1 and 5.2.

Table 5.1: Focus group workshop participants in Cohort One

Position	Title	Company
Core Team	Senior Project Manager	General Contractor
Core Team	Design Project Manager	Design Firm
Core Team	Senior Project Manager	Owner
Core Team	Facilities Manager	Owner
Senior PET Leader	Architect	Design Firm

Senior PET Leader	Architect	Design Firm
Senior PET Leader	Senior Project Manager	Trade Contractor
Senior PET Leader	Project Manager	General Contractor
Senior PET Leader	Facilities Manager	Owner

Table 5.2: Focus group workshop participants in Cohort Two

Position	Title	Company
PET Leader	Project Manager	Owner
PET Leader	Project Manager	Owner
PET Leader	Architect	Design Firm
PET Leader	Architect	Design Firm
PET Leader	Project Manager	Owner
PET Leader	Project Manager	General Contractor
PET Leader	Project Manager	Owner

5.4 Findings from Pre-Workshop Phase

The researcher observed the project team in regular meetings over two weeks for this case study. Some observations occurred during virtual meetings, while others were done in person during regular colocation design meetings. The meetings included design team members, subject matter experts from the owner, general contractor members, and trade partners.

The researcher also conducted 1:1 interviews with a cross-section of project leaders following the template in Appendix 1.2 and 1.3. The project team members were also allowed to share concerns about the project's current state.

In the pre-workshop interviews, the researcher discovered a high level of mistrust between the different parties. The design team reported that they did not feel trusted to do design work and felt like they were overpaid “drafters”. The design team also reported that they did not trust the estimates from the general contractor on the project. They shared with the researcher that they felt that the general contractor was overestimating the cost of many project elements to protect themselves later and provide a financial cushion. This was causing the design team to reduce or limit some of their design to meet a budget that they felt was inaccurate.

The design team also felt that the people representing the owner facility team were asking for upgrades to the design standards or items outside the project's scope. The design team members interviewed reported being uncomfortable having difficult conversations with the owner about

these additional items, so they avoided those conversations. The interviews with the design team members detected an intense mood of resignation.

The general contractor on the project had a small staff that handled estimating and constructability reviews. In pre-workshop interviews, the general contractor reported that they felt the design team needed to take the budget more seriously and were jeopardising the project being cancelled due to being unable to stay within the budget. The general contractor also reported having a hard time with the owner's facility team, who they said were not open to alternatives to significant equipment selections that would help reduce the project cost and keep it within the project budget.

In pre-workshop interviews, the owner team reported distrusting the design team. They said too much of the design was being done behind the scenes and then presented to them for review. This led to significant design rework as the owners often provided significant design comments that significantly impacted the fundamental aspects of the project's design. The owner team also reported that they felt the general contractor was inflating their estimate to have a cushion later, forcing the owner team to make a difficult decision about cutting scope. They also reported that no one was talking about these issues meaningfully; they were just complaining to each other.

The project team was under considerable pressure to lower the project's overall cost. During the initial meeting observations and interviews, team members displayed a high degree of anxiety, and the pressure to reduce costs produced open conflict and disagreement in the meetings before the workshops. Findings from the pre-workshop observations and interviews are presented in this section.

In the pre- and post-workshop surveys conducted as part of Case Study One, participants were asked to rate key aspects of team dynamics using a 1–5 Likert scale, where one indicates the lowest level of agreement or performance and five represents the highest. This scale was used to measure perceptions across five core domains: level of trust, quality of communication, clarity of requests, reliability of promises, and meeting effectiveness. This scale provided a consistent, quantifiable way to assess subjective experiences across cohorts and to track any shifts resulting from the intervention workshops (Dahlberg et al., 2020).

5.4.1 Level of Trust Between Team Members

As part of the interview process before the workshops, the team members were asked to evaluate the level of trust in the project. Table 5.4 shows the common themes in the data around the level of trust before the workshops.

In the context of this research, trust is understood as a multi-dimensional and domain-specific phenomenon that influences how team members relate to one another within project environments (Flores, 2013).

The researcher observed a significant amount of mistrust around the current project budget. This mistrust was apparent in multiple meetings the researcher observed. The owner hired a third-party firm to review the estimate, and the researcher observed a tense meeting between the general contractor team and the third-party estimator in which they had a heated discussion about the cost of certain aspects of the project. It was clear to the researcher that the parties involved focused more on making the argument than engaging in a collaborative discussion. The general contractor did not share the full details of their estimate, and the third-party estimator was adamant that the general contractor should follow their estimate breakdown structure. This breakdown between the general contractor and the outside estimating firm influenced the design team's mistrust of the project budget's overall accuracy.

In the pre-workshop interviews, many design team members assumed that more money was available and that the owner was holding back information on the total amount available for the project. This was partly created by the additional scope items that the owner wanted to include in the project that were not directly connected to the building. Still, the owner considered this enabling work necessary to make the project to happen. This included items like utility upgrades, campus access improvements and site improvements. The design team's concerns indicated a low trust in the owner's sincerity. Many of the team members shared that they did not know the members of the owner's team that well and only saw them in some of the meetings. The lack of personal relationships increased the level of mistrust within the project teams. Team members reported a higher level of trust with the people in their firms and scepticism and, at times, outright mistrust with team members outside their organisation.

The level of trust reported in the preworkshop survey was low on a scale of 1-5. The average was 2.56 (see Table 5.4), which supported the observations in the preworkshop meetings and what was reported in the preworkshop interviews.

The lack of communication and casual conversation between team members outside of their own companies contributed to the overall mood of mistrust on the project.

5.4.2 Quality of Communication Between Team Members

The quality of communication observed in prework meetings was consistently low, a theme that emerged as a common thread in the interviews. The low average score reported in the preworkshop survey, 2.44 (see Table 5.4), supported this observation. The low quality of communication contributed to the low level of trust and the unreliability of promises made. In this study, the quality of communication refers to more than just the frequency or clarity of information exchange; it encompasses how effectively team members engage in conversations that lead to coordinated action. High-quality communication is characterised by clarity of purpose, mutual understanding, and the ability to move from discussion into commitment and follow-through. In contrast, low-quality communication is characterised by vague requests, the avoidance of difficult conversations, and conversations that remain stuck in possibilities without progressing to action (Flores, 2013).

In the pre-workshop interviews, the participants reported very little interaction with people outside their firms, outside the regular project meetings. No social activities were tied to the project; very few people reported building relationships on the project team.

In pre-workshop interviews, participants reported that they avoided difficult conversations and that although there were several complaints about budgets, trust, and the effectiveness of project meetings, they avoided talking about these issues outside of their own companies.

Most of the project communication was via emails and other electronic correspondence. Participants noted in pre-workshop interviews that although genuine issues in the background needed to be discussed, most of the in-person conversations were focused on chit-chat and

surface-level conversations. Participants reported that when difficult subjects were addressed, it was often via email, resulting in misunderstandings and back-and-forth emails between participants that became hard to follow and frequently drifted into new areas.

This lack of quality conversation before the workshops resulted in inauthentic relationships between team members, especially those in different companies. The lack of meaningful relationships influenced the low level of trust and the unreliability of promises on the project.

5.4.3 Reliability of Promises

In the preworkshop interviews, many interviewees reported low confidence that promises would be fulfilled. The preworkshop survey of participants produced an average score of 2.48 (see Table 5.4) on a scale of 1-5 on the reliability of promises made, which supports the interview findings that there needed to be more confidence in the reliability of commitments.

In this study, the reliability of commitments refers to the degree to which team members make and fulfil clear, explicit promises in a timely and consistent manner. A reliable commitment is not simply a verbal agreement or intention; it is a negotiated promise made in response to a clear request, with agreed-upon conditions of satisfaction and timing. Reliability, in this context, is observed when individuals consistently follow through on what they say they will do, creating a foundation for trust, coordination, and accountability within the project team (Flores, 2013).

Many team members reported in the pre-workshop interviews that they felt pressure to say yes even when they were confident, they would be unable to fulfil a request made of them. This pressure was coming from the owner team, who was pressured by the board, and an early promise made by the project manager for the owner to achieve a specific budget number. There was a reluctance from the owner team to go back to the board to ask for more money, so they pressured the project team to move fast and resolve budget issues.

It was difficult for interview participants to identify when an explicit promise had been made. Many reported that project team members use words like “try”, “maybe”, and “should work”, “that is the plan”, but no one uses promises or commitments.

5.4.4 Quality of Requests

In the preworkshop interviews, participants reported that requests often needed to be more precise and transparent. They also noted that teams frequently meet for an hour, without anyone asking anyone to do anything. So, teams engage in conversations for possibilities but rarely move those conversations into action by making a clear request of another team member that brings forth some future possibility. These accounts from the pre-workshop interviews are supported by the average score in the survey on the Quality of Requests, which was 2.56 (see Table 5.4).

In this study, the quality of requests refers to how clearly, directly, and effectively team members ask others to take specific actions to address shared project concerns. A high-quality request includes a defined performer, a clear action, a due date or time frame, and conditions of satisfaction that outline what successful completion looks like. It also allows space for negotiation or refusal, which is essential for building trust and accountability.

The participants reported that because of the confusion centred around unclear requests, they sometimes worked on the wrong thing or toward a goal or result that was not aligned with the overall project needs.

5.4.5 Meeting Effectiveness

In this study, meeting effectiveness is defined as the extent to which project meetings result in clear decisions, explicit commitments, and coordinated action. Effective meetings are purpose-driven, well-structured, and involve meaningful participation from attendees who are prepared to make or negotiate commitments. They create a space for resolving issues, aligning on next steps, and advancing the work of the project reliably and transparently.

The meetings the researcher observed before the workshops could have been more effective. Poor conversation skills resulted in a lack of clear requests and no commitments. As a result, very few meetings produced coordinated action or resolved issues. Negative moods were common, and the researcher observed several heated discussions between team members. Team members seemed consumed with being right and making claims for the truth. They could not observe the conversations they were in because they had not been trained to do that. As a result,

they treated assessments as assertions. When treating assessments as assertions, participants were confusing opinions and judgments (assessments) with facts (assertions), and the result of this confusion was that they got stuck in conversations about the truth. This prevented them from exploring the opportunities that some assessments seemed to raise. People dug in and defended their positions.

The lack of quality communication resulted in many inefficient meetings. Participants often did not know the purpose of a meeting and could not identify the right team members. As a result, the researcher observed open frustration and heated exchanges between participants. When the researcher was observing, these exchanges were mainly focused on disagreements around design items and their cost and overall impact on the project budget. The general contractor was pushing for a more simplified design to save costs. In contrast, the design team maintained that the general contractor needed to be more accurate with the construction cost and materials. The owner often tried to push for a more simplified design and adding enabling scope to the project.

The quotes in Table 5.3 are supported by the survey results in Table 5.4, where the average score in the preworkshop survey on the effectiveness of meetings was 2.56 on a scale of 1-5.

Table 5.3: Quotes on critical domains of team dynamics from pre-workshop observations and interviews

Key Domains of Team Dynamics	Key Quotes from Interviews and Observations of Pre-Workshop Team Dynamics
Level of trust between team members	<ul style="list-style-type: none"> • <i>Designers don't trust the owner to not meddle in design, so they have secret meetings.</i> • <i>Designers don't trust the contractor's estimate, so they are sceptical of changing the design to lower costs.</i> • <i>The contractor doesn't trust the owner's budget. They feel that they have more but are not sharing.</i> • <i>Very little friendly chat among team members.</i> • <i>Lack of collaboration amongst team members.</i> • <i>There is a lot of gossip about the budget, schedule, and whether the project will move forward.</i>
Quality of communication between team members	<ul style="list-style-type: none"> • <i>No communication outside of Project Execution Team (PET) meetings.</i> • <i>Poor communication about PET meetings. Some people don't even bother to show up.</i> • <i>There are no decision makers in the PET meetings, so decisions are rarely made or communicated in PET meetings.</i>

	<ul style="list-style-type: none"> • <i>The definition of a PET team and what they are responsible for needs to be clarified.</i> • <i>It is hard to develop relationships with people who do not come to work or do not interact with each other.</i>
Clarity of request made	<ul style="list-style-type: none"> • <i>I'm not even sure what I should be working on.</i> • <i>We ask for things from the owner and the contractor, but we often get something different.</i> • <i>We are talking past each other.</i>
Reliability of promises	<ul style="list-style-type: none"> • <i>People don't do what they say they will do.</i> • <i>When someone says they will do something, I have little faith that it will get done.</i>
Meeting effectiveness	<ul style="list-style-type: none"> • <i>Too many housekeeping and administrative items are in meetings, and there needs to be more talk about coordinating the work.</i> • <i>Everyone reports a high level of stress about the meeting structure.</i> • <i>There were too many ineffective meetings and insufficient time to do the work.</i>

Table 5.4: Results on critical domains of team dynamics from pre-workshop surveys

Key Domains of Team Dynamics	Average response from pre-workshop survey on a scale of 1-5, with one being the lowest and five being the highest
Level of trust between team members	2.56
Quality of communication between team members	2.48
Clarity of request made	2.56
The reliability of promises made	2.44
Meeting effectiveness	2.56

5.5 Findings from Workshop Phase

Two workshops were conducted on this project with two separate cohorts. Cohort One comprised nine people, mainly Core Team members and other key project leaders. Cohort Two consisted of seven people in workgroup lead positions. Many of the participants had both leadership and technical responsibilities. The workshops were about one month apart.

Many participants appeared anxious and uncomfortable as they entered the room and found seats. The researcher briefed the owner's project manager on the workshop's content as part of setting up the workshops. The briefing outlined the amount of time we would spend together,

focusing on communication, listening, moods, and trust as part of the workshop agenda. The project manager was also informed, as part of the briefing, that we would be doing a mix of lectures and exercises and that we would be using the project experiences the participants had as a background to the exercises. The owner project manager provided participants with an outline of the workshops as part of the invitation. Hence, they knew they would be doing exercises exploring communication and trust in the project when they came into the workshop.

The seating was not assigned, and the participants could choose where they sat. We asked the participants to introduce themselves at the beginning of the workshop and include humorous or light-hearted facts about themselves; this allowed people to see each other as human beings instead of just co-workers and produced a more relaxed atmosphere. The researcher observed that the participants appeared more visibly relaxed as the workshop progressed. Also, as the exercises progressed, participants began to open up more about their emotions and attitude toward the project. They appeared visibly more comfortable discussing their struggles with certain project issues, such as a lack of trust in the owner's budget, the contractor's estimate, and the designers' ability to follow the owner's requirements during the design work.

5.5.1 Workshop Setting

Both cohorts had their workshop in the same space: a large conference room in an older building. The room consisted of one long table with a large-format television, on which the PowerPoint presentation for the workshop was displayed (see Figure 5.2). A few participants reported being cold in both cohorts, and temperature management discussions were slightly distracting for both cohorts. The teams also reported that during the workshop exercises developed using Table 4.2, they could overhear other conversations in the rooms, which could be distracting.



Figure 5.2: Case Study One workshop room

5.5.2 Level of Trust Between Team Members

Based on what was heard and observed in the pre-workshop interviews, the researcher knew that trust was a concept that participants needed a deeper understanding of. Participants struggled to define what trust looks like and how it can be built and repaired in early conversations in the workshop, as represented by this quote:

“Trust is like love. It is hard to define, but you know when it is there and when it is missing.”

—Design Project Manager.

As we progressed through the workshop, the conversations and exercises around the breakdowns of the project produced a more robust mood of trust among the participants as demonstrated in Table 5.5. It was observed that by discussing the mistrust in the project and creating a safe space in the workshop to explore its sources, the level of trust within the team increased.

“If we can have these types of conversations about our work, then I would have a higher level of trust that people are not hiding details about the project.”

-Owner Project Manager.

When the participants were introduced to the trust domains in Table 2.4, they realised they could identify the areas lacking trust. Participants were guided through a series of workshop exercises developed using Table 4.2 to explore which domain of trust needed to be improved. As the participants moved through these exercises, they developed a way to observe and examine trust. It was evident in how the team began talking about trust. The conversations shifted from trust as an abstract concept to a more focused conversation on where trust was lacking within the project team. A new collective way of thinking about trust was emerging within the team.

The most notable was the realisation amongst some participants who stated that “we can trust people in some domains but not others”. Participants talked about this domain confusion as a source of breakdown around trust. One of the participants gave an example of how “we can trust someone to produce a detail for a curtainwall design, but I may not trust that person to design a wastewater piping solution”. Trust is domain-specific, and that realisation was a significant development for the team. You could sense the change in the mood in the room and see the body language shift to a more positive and leaning posture as seen in Figure 5.3.



Figure 5.3: Case study one workshop team exercise

Participants reported that they had new skills to build, maintain, and repair trust, and many reported that it was a skill they did not have before the workshop. As a result, as the workshop

progressed and the conversations became more practical, participants opened up more about project concerns, indicating a rising level of trust in each other. Participants spoke about potential actions they could take after the workshop to start building trust, as seen in Table 5.5.

Table 5.5 was developed to illustrate possible team actions that can be taken to address specific domains of trust issues as part of the workshop discussion around the trust-building exercises outlined in Section 5.4.1. It captures particular actions that team members proposed to strengthen trust across the four domains of trust. These domains are grounded in the LAP and trust frameworks introduced in the literature review, which emphasise that trust is not a general feeling but is built and assessed differently depending on context (Solomon and Flores, 2001).

The actions listed in the table emerged through guided exercises in which participants identified where trust was breaking down and collaboratively proposed behaviours or practices that could rebuild trust in targeted ways. Table 5.5, therefore, serves as both a summary of the team's learning and a practical roadmap for improving team dynamics in the aftermath of the intervention.

Table 5.5: Domains of trust and potential team actions discussed in workshops

Potential Action Raised by Workshop Participants	Trust Domain Addressed (Solomon and Flores, 2001)
Weekly check-in conversations to raise topics early before they become bigger problems.	Sincerity
Document requests and commitments in meetings to make promises more public.	Reliability
More 1:1 check-ins with team members to give them space to discuss issues.	Care
Provide training on some of the ongoing technology issues that the team is experiencing.	Competency

A critical moment in both workshops occurred during the exercise where participants delivered assessments in an exercise developed using Table 4.2 on what they were doing well as teammates, and another round in which they delivered assessments to each other about what they could do to be better or more effective teammates, as seen in Figure 5.4. After this exercise, a comprehensive debrief was conducted with the team, and many of the participants commented publicly on an increased sense of trust, as represented in this quote:

“If we can have these types of frank and direct conversations about each other, then I am confident that very little will go unsaid within the team,”

- General Contractor Project Manager.



Figure 5.4: Assessment exercise

5.5.3 Quality of Communication Between Team Members

Participants reported that the overall quality of communication on the project could have been better in the pre-workshop interviews, and the initial exercises in the workshop revealed that the team lacked the necessary skills to engage in effective conversations that produce action. In the workshop's early discussion, many participants considered communication a series of inputs and outputs about exchanging information. Participants appeared uncomfortable early in the workshop having difficult conversations and reported that “be nice” rather than direct was more important (Table 5.7). This bias to being friendly instead of direct was covering up unresolved issues and conflicts between team members.

As participants progressed through the workshop, the quality of communication improved. There was a noticeable improvement in the quality of conversations in the workshop after the AWL was introduced. The introduction of the AWL to the participants increased awareness of

where conversations are breaking down on the project. Participants began to recognise that critical elements were missing in many of the team conversations, especially the lack of clear requests and negotiation of the CoS needed to produce a reliable commitment.

As the workshop progressed, it was clear that participants made more clear requests in the exercises within the workshops and could identify where something was missing in the commitment conversations by using the AWL in Figure 2.2 as a diagnostic tool. A typical, unclear request would be “Could somebody make sure we have better coffee next time?” to a more explicit request like “Bill, could you please get Starbucks medium roast coffee for our next session?”

In debriefs at the end of both cohorts, participants reported a new realisation that, through the workshop experience, we are human beings who are rational animals who communicate with our language and emotions. As one participant said in our closing discussion, “I realise now that communication is influenced by our moods, emotions, and historicity, in addition to the more analytical aspects of Language Action”.

5.5.4 Reliability of Promises

A common theme of conversations in both cohorts was that managing activities as leaders is an exhausting and ineffective way to lead teams. Many participants shared that when project leaders are overly concerned about the activities, they are in the domain of micro-managing. As the participants progressed and learned new skills around securing commitments and the elements of a successful promise in Table 5.6, the leaders shifted their perspective from managing activities to managing outcomes. As leaders, we manage outcomes by managing commitments, and to manage commitments, we must have the kind of illuminating conversations that produce sound obligations based on a robust negotiation.

Table 5.6: Elements of a successful promise (Flores, 2013)

Promise Element	Description
Performer	The person fulfilling the promise by performing an act.
Customer	The person making the request to initiate a negotiation.

Conditions of Satisfaction	The specific criteria that define what a successful outcome looks like for a promise ensuring clarity and alignment between parties.
Background of obviousness sufficient to the request	The unspoken assumptions, shared norms, and historical experiences that shape how individuals interpret conversations and actions, often without consciously realising it.
Specified time for the fulfilment of the request.	Specifies when the promise needs to be fulfilled.
Future action to be performed by the speaker.	The action that needs to be taken to bring forth a possibility that does not yet exist.
Brings forth something missing: a new possibility	The new future that becomes possible with the fulfilment of the promise.
Presupposition of the performer's ability and skills to fulfil the promise.	The assumption that the performer has the ability to fulfil the promise.

Participants recognised that due to the lack of negotiation in project conversations and meetings, promises either needed to be included or misaligned with the desired outcome of one party. This results in missing deadlines and poorly coordinated handoffs.

“I now realise we have been managing activities on this project, which has been ineffective in producing results. Now I know we have to manage commitments, which is managing outcomes, and if we do that, we will get results and not have to micromanage the people doing the work.”

- Owner Project Manager.

A critical discussion in both cohorts revolved around the importance of being able to say “no” in a stressful environment with high expectations. The cohort, mainly comprised of project Core Team leaders, discussed creating an environment where people feel comfortable saying “no”.

Both cohorts also discussed the imprecise language around project commitments, which led to a misunderstanding between the speaker and listener about whether a promise existed. When someone says, “That should work,” the listener reports that they got a commitment, while the speaker says, “No, I meant it was possible.” This conversation highlighted the significance of language in creating a commitment-based environment, emphasising that both the content and manner of our communication are crucial.

“Previous to the workshops, people did everything they could to avoid committing. Now I have the tools to negotiate a commitment from other team members and to manage those commitments.”

- Design Leader.

5.5.5 Quality of Requests

Participants needed clarification about what they wanted or needed in the early workshop exercises. They struggled to make a clear request, often talking vaguely about what they liked. As a result, the listener reported being confused or misunderstanding what the speaker was looking for. When participants began to understand the AWL, they observed themselves as either a customer or a performer in conversations. As a customer in a conversation, it is essential to articulate an explicit request and manage the conversation to get a clear, well-defined, and sound commitment from the performer. When breakdowns occurred, the AWL helped identify where the breakdown happened in conversations and commitments.

The AWL demonstrates the importance of making an explicit request to open the negotiation conversation about the CoS. Aligning the CoS produced a more reliable commitment from team members.

“Now that I have been introduced to the Loop, I can see where we are missing important requests on the project that would move us from talking to action.”

- General Contractor Project Manager

5.5.6 Meeting Effectiveness

As demonstrated in workshop exercises, the central issue of ineffective meetings on the project was the inability of team members to move from making assessments and having conversations about the possibility of making explicit requests or offers to move a conversation into a conversation for action.

The AWL conversation, along with the speech acts associated with it in Table 2.3, showed participants that they often get stuck in making assessments and sharing opinions, rarely moving

on to making a request or offer. As a result, critical tasks still need to be done, and the teams discussed that key meetings often wrap up with no agreed-upon actions. As communication improves and trust is built, the effectiveness of meetings will increase.

“Sometimes, we are in a meeting for a full hour, and nothing happens. That was frustrating because I didn’t know how to change that. I now realise that to move a conversation from possibility to action, and I must make a request or an offer to move us toward negotiating a commitment. Requests produce action, and commitments are outcomes.”

- Owner Project Manager.

5.5.7 Team Dynamics in Workshop

During the workshop, team dynamics (see Table 5.7) shifted notably from initial hesitation to increasing openness and engagement. At the outset, participants displayed signs of guardedness, with limited eye contact and reserved body language, likely reflecting pre-existing tensions reported in the pre-workshop interviews. However, as the workshop progressed and participants engaged in exercises around speech acts, trust domains, and reflective assessments, the mood in the room visibly shifted. Individuals began to speak candidly, constructively offer feedback, and express previously withheld concerns. The structured conversations created space for new relational dynamics to emerge, marked by greater psychological safety, empathy, and willingness to listen. By the workshop’s conclusion, the team demonstrated an increased capacity for collaboration, more direct and respectful communication, and a shared recognition of the interpersonal dimensions of their project work.

Table 5.7: Team dynamics observed in the workshop

Key Issue	Key Observations of Team Dynamics in the Workshop
Level of trust between team members	<ul style="list-style-type: none">• All participants were engaged, open to sharing, and expressed value in the exercises during debriefs.• Participants sat next to people from their own company when initially coming into the room but moved around more as the workshop progressed and appeared more comfortable speaking with people they didn’t work with.• Participants seemed apprehensive at first, but after the first exercise and sharing, they settled in and opened up more about their concerns for the project.• One participant requested a private meeting with the facilitators because she felt she could trust them based on the conversations they were producing in the room.

Quality of communication between team members	<ul style="list-style-type: none"> The assessment exercise revealed that many are uncomfortable having difficult conversations. Participants spoke about avoiding difficult conversations and were apprehensive to give negative assessments to teammates. Participants struggled to deliver negative assessments to each other. Participants struggled to listen to positive assessments about themselves and appeared physically uncomfortable.
Clarity of request made	<ul style="list-style-type: none"> Team members practised making clear requests in the exercises and shared how they could benefit from this in their work.
The reliability of promises made	<ul style="list-style-type: none"> Team members practised negotiating promises and learned about the elements of a successful promise. They shared with each other how they could spend more time negotiating promises instead of just saying yes.
Meeting Effectiveness	<ul style="list-style-type: none"> Participants were energised to use the workflow loop to produce more effective conversations in meetings. Participants shared how in meetings they often talk at length, but they now realise after learning about the workflow loop, they rarely close conversations with a commitment to take action.

5.6 Findings from Post-Workshop Phase

After the workshop, the participants were surveyed again to determine whether their assessments of the project's level of trust and the quality of the communication had changed.

As seen in Table 5.8, there was a positive shift in the participants' reporting across all the categories measured. The most significant change was in the quality of communication. The workshops aimed to help the team have better conversations and increase the quality of the conversations within the team. As a result, trust also increased, resulting from focusing on having difficult conversations that explore breakdowns and disagreements. When we discuss what we haven't been discussing and bring those issues to the surface, it can be difficult, but it is a skill that can be learned. When we have difficult conversations, we reduce the amount of gossip and make the breakdowns explicit, building trust within the team.

Table 5.8: Post-workshop findings

Question	Post-Workshop average response on a scale of 1-5, with one being the lowest and five being the highest	Change in reported results from pre-workshop average.
How would you rate the level of trust within the team?	4.33	+1.77
How would you rate the quality of communication within the team?	4.33	+1.89

How would you rate the reliability of the promise made?	4.11	+1.54
How would you rate the clarity of requests?	3.89	+1.45
Meeting effectiveness	3.78	+1.22

5.7 Cohort Comparison

While both cohorts were from the same project team, some critical distinctions existed between them. Cohort One consisted of the project's leadership team, comprising the most senior people from each company and other vital senior leaders. Cohort Two comprised designers and contractors in leadership positions in the various work groups, but they also had a leadership role and were technical experts on the project.

Cohort One seemed more enthusiastic about being in the workshop and connected better to the concepts that tied leadership to communication and trust. This aligned with the researcher's expectations, as cohort one was responsible for the overall project and managing not only the outcome of the project but also the experience, culture, and overall effectiveness of the project team. Cohort One also spent one to two hours a week in a meeting that was partially focused on the project's cultural and human aspects. Cohort Two often sought to connect to more practical applications of the workshop concepts. This was not surprising given the more tactical nature of the participants in Cohort Two.

5.7.1 Level of Trust Between Team Members

Both cohorts commented on the lack of trust in the project. In Cohort One, they looked at trust as a more comprehensive umbrella around the whole project. The conversations in Cohort One were rich in trust as participants speculated and shared assessments on how the lack of trust could impact the team dynamics and the ability to move quickly.

Cohort Two focused more on the practical implications of the lack of trust. They were likelier to point to specific conversations or critical moments where trust seemed lacking or breaking down. This reflected the position of the Cohort Two participants and their more tactical role in the project.

Although trust resonated with both cohorts, it was clear that the more senior leaders in Cohort One were more interested in exploring how the lack of trust impacted the overall team's performance. They were less likely to get into the weeds too deeply around specific meeting incidents.

5.7.2 Quality of Communication Between Team Members

Both cohorts pointed to various breakdowns around communication before the workshops. However, Cohort One focused more on project-level communication breakdowns, while Cohort Two focused more on what was happening within the work teams.

During the workshops, the participants in Cohort One were also more focused on communication issues that impacted the whole project. Cohort Two mainly discussed communication issues in their work teams.

The higher-level leaders are more focused on program-level breakdowns. The exercises within the workshops provided a valuable opportunity to explore how making changes to meetings and interactions between team members could help the project achieve its objectives by improving the flow of information and creating a collaborative environment. The workgroup leaders in Cohort Two focused more on solving tactical projects and explored more narrow examples in the exercises.

5.7.3 Reliability of Promises

The leader in Cohort One examined the project's big promises regarding cost, schedule, and deliverables. They spoke of the project as a promise and discussed securing significant commitments from the workgroups.

The workgroup leaders in Cohort Two were more focused on how work gets done and the exchange of information. It was much more difficult for them to envision the project as a series of promises; they were much more focused on the breakdowns they were experiencing in their work groups.

5.7.4 Quality of Requests

Cohort One explored the big requests that might be missing on the project, mostly around cost, because that issue was front and centre at the time of the workshop. In Cohort One, they also used the AWL to identify potential gaps in project requests and explore how these gaps at the leadership level might be causing confusion and misalignment in the workgroups.

The workgroup leads in Cohort Two focused on the quality of requests in everyday conversations and exchanges. They explored specific examples from their day-to-day work and used the AWL to identify where they had been stuck in making assessments and not creating action.

5.7.5 Meeting Effectiveness

Both cohorts recognised that meetings could have been more effective on the project. While both cohorts spoke about a lack of action and meetings that didn't produce anything, the leaders in Cohort One tended to look at the meetings on a project-wide basis. In contrast, the workgroup leads were focused on the workgroup meetings for which they were responsible.

5.8 Areas for Improvement

Participants entered the workshops with visible anxiety and apprehension, reflecting the high-pressure environment of the project and uncertainty about the workshops. Unfamiliar seating arrangements and open-ended exercises initially added to their discomfort, impacting early engagement. A possible improvement for future workshops would be to assign seating and intentionally mix up the participants' seating arrangements so they were seated next to team members from different companies. Designing more exercises early in the workshop to allow participants to have more warm-up conversations to build comfort with each other and let some of the anxiety bleed off could also help participants become more comfortable more quickly.

Both cohorts reported issues with the physical environment, such as the room temperature being too cold and external noise seeping into the workshop space. These external distractions reduced focus during some sessions and required participants to address environmental concerns repeatedly. For future workshops, it may be helpful to hold them in an off-site facility. This could

allow for fewer distractions but would also require the team to travel to a different location. An alternative would be to find a more private space within the project environment.

Participants struggled to engage in direct, critical conversations about team dynamics early in the workshops, avoiding conflict and focusing on surface-level interactions. A tendency to “be nice” hindered the ability to give constructive feedback, reducing the opportunity to resolve underlying interpersonal issues in the initial workshop conversations and exercises. The researcher initially observed this as a hindrance, but upon further reflection, this indicates that the overall workshop structure worked. It allowed teams to progress in their level of comfort and generate deeper conversations as the workshop progressed.

The leadership team in Cohort One showed greater enthusiasm and interest in the strategic aspects of communication and trust. At the same time, the workgroup leaders in Cohort Two gravitated toward more practical and tactical concerns. This divergence in focus limited the consistency of workshop outcomes across the two groups. One possible alternative would be to mix up the participants so that some senior leaders are present in Cohort Two and some participants closer to work are included in Cohort One.

Another improvement area would be providing material ahead of the workshops for participants to read and study. This could result in less anxiety and discomfort as participants may better understand what they will be doing throughout the workshops.

5.9 Summary

This case study provided valuable insight into how teams can improve trust and communication on projects by building new skills and practices informed by the LAP. The LAP workshops brought the project team a new level of awareness around communication, trust, and moods. Participants were introduced to practical tools such as the Action Workflow Loop, distinctions between assessments and assertions, and the proper use of speech acts like requests, offers, and promises. These new skills helped team members better structure conversations, negotiate clearer agreements, and make more reliable commitments.

Concerning the first research question, how LAP influences communication practices, the findings showed clear improvements in the clarity of requests, the reliability of promises, and the coordination of commitments. Team members became more aware of how their language impacted others and began adopting more structured conversational practices that supported better coordination and accountability.

Addressing the second research question, how LAP contributes to trust and collaborative performance, the case study revealed that both cohorts began developing stronger relationships as a result of the workshops. Project-level leaders focused on how trust, language, and moods influenced the culture and alignment of the broader project team, which in turn helped improve collaboration across organisations and disciplines.

Concerning the third research question, how LAP can produce better overall communication, the workshops created a shared language and framework that helped workgroup leaders improve the effectiveness of their meetings and foster more meaningful dialogue. These leaders applied LAP principles to create clearer exchanges of ideas, reduce miscommunication, and build a more coordinated project environment.

In chapter six, we will explore how the LAP training helped a team struggling to keep up with the flow of information on a fast-paced project develop new skills and practices for managing a disconnected and dislocated team on a remote project site.

Chapter Six: Action Case Study Two Finding

6.1 Introduction

This chapter presents the research findings for Case Study Two, which aimed to investigate the theory that the LAP perspective can build better-performing teams in a design and construction project that was 80% complete with design, and the construction of the foundation for the building was underway and about 50% complete. This case study examined how training a team of key leaders within the project in the LAP would change the team members' level of trust, the reliability of the commitments they made to each other, and improve the clarity of requests to each other. This team deeply mistrusts the owner's team, particularly the contract employees that the owner engaged to assist with procurement and project management. The findings presented in this chapter involved workshops conducted with one cohort of selected project team members from case study two. This chapter contributes to research objectives three and four of the study.

6.2 Project Background and Case Description

This case study focuses on a team designing and constructing a 40,000 sq ft building expansion on an existing pharmaceutical campus in Phoenix, Arizona, in the United States of America. The project was designed to expand the capacity to manufacture a pharmaceutical product in a different location. The project was designed to provide redundancy in the supply chain and provide the company with the manufacturing capacity to protect against a hurricane damaging the primary manufacturing facility in the Caribbean region. To give this contingency as quickly as possible, the project had an aggressive timeline with an ambition to cut one year out of the typical five-year timeline that a like-kind project had historically taken for this owner's client.

The project team comprised a design team, an owner, a contractor, a mechanical trade contractor and an electrical trade contractor. The owner had a direct contract with the design team and the contractor, but no direct contractual link between them.

The owner's project delivery team relied heavily on contract workers for a temporary position. The cost team, project management team, schedule and safety personnel were all contract

employees. In the pre-workshop interviews, it was noted that many contract employees had goals that aligned with their parent companies to reduce costs, find contractor scheduling efficiencies and safety errors. The owner team was not aligned with the project's overall mission which was to go fast. Although the project's stated goal was to accelerate delivery and cut a year from the typical timeline, several factions within the owner's team operated with conflicting priorities. The finance and procurement groups, composed mainly of contract employees, were focused on cost containment and strict documentation protocols, often delaying decisions or requiring additional layers of approval that contradicted the urgency of the schedule. Simultaneously, the global engineering team emphasised adherence to corporate standards and governance procedures, which introduced further bureaucratic drag. These competing agendas created friction with the site-based team, which was more focused on rapid execution. As a result, the owner team sent mixed signals to the broader project group, advocating speed in meetings but enforcing processes that slowed momentum in practice, undermining the alignment needed to support a fast-paced delivery strategy. As a result, many conflicts were observed between the owner team and the rest of the project team. There was further misalignment within the owner team between the site team from the owner and the global engineering team from the corporate office. The site team was focused on going fast and moving quickly, while the global engineering team was focused on following the corporate process, which was slower and more bureaucratic.

The executive sponsor of the owner team was experienced in lean construction and had delivered multiple projects using lean construction methods with a previous employer. He was hired specifically to develop this project in a lean way and to develop new practices for delivering future projects. The executive sponsor aimed to deliver the project using an IPD-like method. Initially, the goal was to use an IPD contract, but the legal department within the owner organisation would not approve an actual IPD contract. Thus, the ambition became to follow an IPD-like framework as closely as possible.

During the early phases of the project, and before the owner contract workers were engaged, the team was aligned with the contractors and designers on following a lean approach. However, as contractors were onboarded to the owner team, this alignment began to fade as they were not

adequately onboarded to the lean process, and there was conflicting direction from the owner's global engineering firm and the site delivery team.

In addition, the design team members who were interviewed reported being reluctant to adopt the lean approach based on unfavourable prior experiences.

The project structure was created to follow a typical IPD project Structure with a Senior Leadership Team, Core Team and PETs (see Figure 6.1).

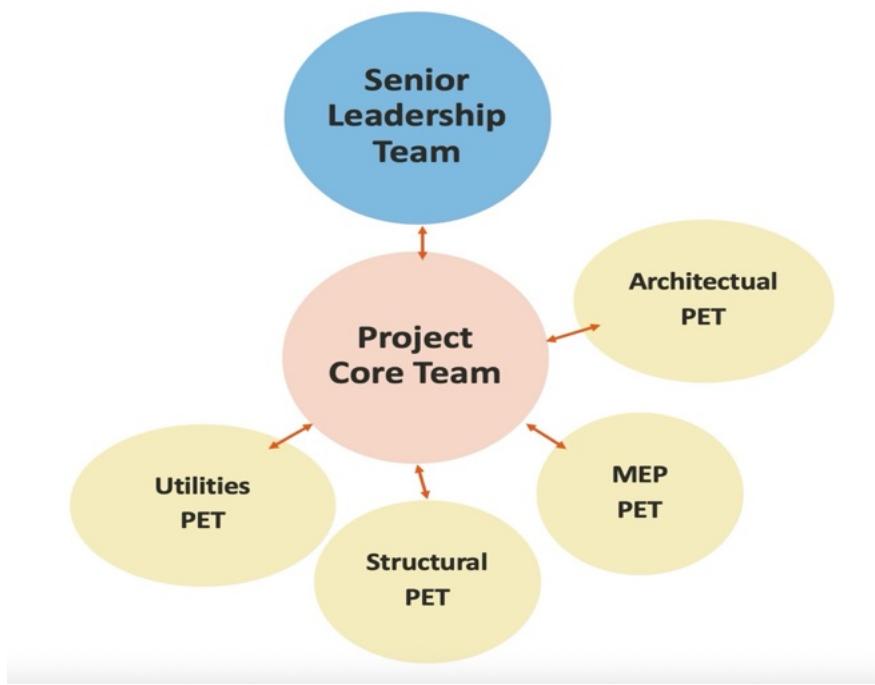


Figure 6.1: Project team structure for case study two

At the time of the workshop, the project had completed the Basis of Design phase and had issued an initial set of foundation and structure drawings for the building.

At the time of the workshop, the project was experiencing a breakdown in trust and communication between the finance group responsible for reviewing and approving the contractor's payment applications and the contractor team. The contractors experienced several

payment delays, prompting the finance team to make claims about the lack of information in the payment applications.

A change in site leadership also led to many rumours about the project's future. Many project team members reported that their loyalty shifted from the team and its mission to the ambitions of the site lead, who wanted more control over the project.

6.3 Participant Selection

This case study focused on people in leadership positions on the Project Core Team and the Project Execution Teams. The workshop was conducted with the Core Team members and members of the different Project Execution Team leaders. Participants for the workshop are presented in Table 6.1.

Table 6.1: Focus group workshop participants

Position	Title	Company
Core Team	Senior Project Manager	General Contractor
Core Team	Design Project Manager	Design Firm
Core Team	Senior Project Manager	Owner
Core Team	Facilities Manager	Owner
Senior PET Leader	Architect	Design Firm
Senior PET Leader	Architect	Design Firm
Senior PET Leader	Senior Project Manager	Trade Contractor
Senior PET Leader	Project Manager	General Contractor
Senior PET Leader	Facilities Manager	Owner
Trade Foreman	Trade Foreman	Mechanical
Trade Foreman	Trade Foreman	Electrical
Trade Foreman	Trade Foreman	Mechanical
Trade Foreman	Trade Foreman	Mechanical
Owner	Contract worker	Finance
Owner	Contract Worker	Scheduling
Owner	Contract Worker	Project Manager

The researcher observed the project team in regular meetings for this case study over two weeks. Some observations were made during virtual meetings, while others were conducted in person during regular colocation design meetings. The meetings included design team members, subject matter experts from the owner, general contractor members, and trade partners.

The researcher also conducted 1:1 interviews with a cross-section of project leaders following the template in Appendix 1.2 and 1.3. The project team members were also allowed to share concerns about the project's current state.

The project team was under pressure to expedite the project to reduce its overall duration while maintaining the cost budget. During the initial meeting observations and interviews, team members displayed a high degree of anxiety as a result of the pressure to reduce the project timeline produced open conflict and disagreement in the meetings before the workshops. Findings from the pre-workshop observations and interviews have been presented in section 6.4.

6.4 Findings from Pre-Workshop Phase

The researcher observed the project team in regular meetings over two weeks for this case study. Some observations occurred during virtual meetings, and some were done in person during regular colocation design and construction meetings. The meetings included design team members, owner representatives, general contractor members, and trade partners.

The researcher also conducted 1:1 interviews with a cross-section of project members, following the template in Appendix 1.2. During the interviews, the project team members were also allowed to share concerns about the project's current state.

The researcher discovered mistrust among the project's different companies in the pre-workshop interviews. The design team reported that they did not trust the general contractor's cost estimates. They told the researcher that they felt the general contractor overestimated the cost of some of the project components and did not include some of the key elements in the early cost estimates that informed the initial budget.

The design team also felt that the people representing the owner team were not well coordinated and were getting conflicting directions regarding owner standards. There was a breakdown between the requirements of the owner's global engineering team and the requests of the local facility team members. The design team members interviewed reported being uncomfortable having difficult conversations with the owner about these items, so they avoided those

conversations. The interviews with the design team members detected an intense mood of resignation and anxiety.

The project's general contractor had staff who handled estimating and constructability reviews. In pre-workshop interviews, the general contractor reported that they felt the design team needed to engage with them more in the design phase so they could influence material selection and building components. The general contractor also reported having a hard time with the owner's team, who they said were not open to alternatives to building equipment selections that would help reduce the project timeline and keep the project on schedule.

In pre-workshop interviews, the owner team reported frustration with the design team. They said too much of the design was being done behind the scenes and then presented to them for review. This caused rework, as conflicts were discovered between the owner's design standards and the requirements at the local level from the owner's team. They also reported that no one was talking about these issues seriously; they were only complaining amongst themselves.

The project team was pressured to move quickly and cut through the owner's internal bureaucracy. During the initial meeting observations and interviews, team members displayed a high degree of anxiety about the project timeline. The pressure to move quickly produced open conflict and disagreement in meetings before the workshops. Findings from the pre-workshop observations and interviews are presented in sections 6.4.1 – 6.4.5.

6.4.1 Level of Trust Between Team Members

As part of the interview process before the workshops, the team members were asked to evaluate the level of trust in the project. The researchers observed a significant amount of mistrust around the current project timeline. The researcher also observed a high level of mistrust between the team members, mainly focusing on conflicts between the owner's contract workers and the team from the general contractor. Team members reported mistrust between the design team and the contractor, and the contractor and the design team members reported mistrust with the owner.

Table 6.2 shows the common themes in the data around the level of trust before the workshops. The design team did not trust that the owner was honest in their statement about the needed timeline. The owner was very transparent with the team that, although there was a cost ceiling, cost was not the driving factor for the project; the schedule was. The team members would get conflicting directions from the owner team and the finance team, which was demanding more cost certainty and savings; the owner's global engineering team was demanding that the corporate standards about project delivery be followed, and the owner executive sponsor was pushing for faster timelines and was dismissive of cost concerns. Many design team members assumed that more time was available and that the owner held back information on their controlled activities during validation and commissioning. This indicated a low level of trust in the sincerity of the owner. Many team members expressed a need to develop stronger relationships with colleagues outside their firm, as they often only met in some meetings, which they found less effective for getting to know someone. Many complained about the lack of an onboarding process in the interviews and workshop conversations. The lack of alignment within the broader owner team resulted from poor onboarding practices on the project. There was also a high turnover within the owner's team, which was attributed to the stressful and mistrustful work environment of the owner's human resources team. The lack of personal relationships increased mistrust within the project teams and made rebuilding trust more challenging when breakdowns occurred.

Team members reported a higher level of trust with the people in their firms and scepticism and, at times, outright mistrust with team members outside their organisation. This was most evident in the ongoing conflicts around the approval of pay applications and multiple alternative schedules produced by contract workers on the owner's team. The general contractor team took these as a sign of mistrust.

The level of trust reported in the pre-workshop survey was low on a scale of 1-5. The average was 2.56 (see Table 6.3), which supported the observations in pre-workshop meetings and what was reported in the pre-workshop interviews.

The lack of communication and casual conversation between team members outside of their own companies contributed to the overall mood of mistrust on the project. Efforts were made to organise social gatherings outside of work to foster stronger relationships. Unfortunately, many of these events were in the evenings, and many participants with families could not attend.

6.4.2 Quality of Communication Between Team Members

The quality of communication observed in prework meetings was consistently low, a theme that emerged as a common thread in the interviews. The low average score reported in the pre-workshop survey, 2.44 (see Table 6.3), supported this observation. The low quality of communication contributed to the low level of trust and the unreliability of promises made.

In the relationship between the owner's finance team and the general contractor, communication primarily involved making demands via email. The owner contractors, however, refused to answer phone calls or engage in in-person conversations, preferring everything to be documented.

In the pre-workshop interviews, the participants reported very little interaction with people outside their firms, outside the regular project meetings. Very few social activities were tied to the project, and those held were not broadly attended. Significantly, few people reported building relationships on the project team.

This lack of quality conversation before the workshops resulted in inauthentic relationships between team members, especially those in different companies. The lack of meaningful relationships led to a low level of trust and an unreliability of promises on the project.

6.4.3 Reliability of Promises

In the pre-workshop interviews, many interviewees reported low confidence that promises would be fulfilled. The pre-workshop survey of participants produced an average score of 2.44 (see Table 6.3) on a scale of 1-5 on the reliability of promises made, which supports the interview findings that there needed to be more confidence in the reliability of commitments.

Many team members reported in the pre-workshop interviews that they felt pressure to say “yes”, even when uncomfortable, because they believed that what they were asked to do might conflict with company standards. The pressure to say “yes” stemmed from the project's need to move quickly, resolve scheduling issues, and avoid delays. The pressure to move fast led some on the owner team to exclude other experts from meetings to avoid slowing down the project with different ideas to consider. This eventually led to poor design decisions and critical owner experts feeling left out of the project.

Interview participants often struggled to pinpoint moments when a clear promise had been made, noting that conversations were filled with vague language phrases like “I'll try,” “maybe,” or “that should work” that suggested intention but lacked the weight and clarity of genuine commitments.

From the standpoint of the LAP, this reliance on ambiguous speech reflects a breakdown in the conversation for action, where the absence of explicit promises undermines accountability and disrupts the coordination necessary for reliable project execution.

6.4.4 Clarity of Requests

In the pre-workshop interviews, participants reported that requests often lacked precision and transparency, and that teams frequently met for an hour without clear progress on the work. So, teams engage in conversations about possibilities, but rarely move those conversations into action by explicitly requesting another team member to bring forth some future possibility.

The correspondence between the owner's finance team and the general contractor suffered most from a lack of clarity of requests. Due to ambivalent requests for more information to support pay applications, an incredible amount of unnecessary information was shared to satisfy the often confusing requests made by the owner's finance team.

It was also observed that there was a breakdown between the owner's site lead and the project team. He made several requests to the project team that were not clear. These unclear requests

were made in several domains, including unclear requests for design changes and requests to modify practices during the early stages of construction.

The average score in the survey on the Clarity of Requests, 2.36, supports these accounts from the pre-workshop interviews (see Table 6.3).

6.4.5 Meeting Effectiveness

The meetings the researcher observed before the workshops could have been more effective in producing the coordinated action necessary to keep the project moving quickly. Poor conversation skills resulted in a lack of explicit requests and commitments, so very few meetings produced coordinated action or resolved issues. Negative moods were observed daily and attributed to mistrust between team members. The researcher observed tense conversations around the trade-offs, the need for more time to design and explore options, and the pressure to move quickly.

Team members seemed consumed with staking out their territory and holding onto as much schedule time as possible. They appeared to lack the skills to observe the missing speech acts because they had not been trained. As a result, they treated assessments as assertions and got stuck in conversations about who was right instead of exploring the options and moving the conversations into action. This prevented them from exploring the opportunities that some assessments seemed to raise. People dug in and defended their positions.

The researcher observed the owner project manager attempting to make meetings more effective by changing their format and, in some cases, the technology used to track meeting minutes. However, no attempt was made to improve the participants' communication skills during the meetings.

Multiple changes to the owner's project management team also produced a series of changes in how project meetings were structured and run. This led to further confusion within the team, as they struggled to establish consistent practices for meeting conversations. The researcher also observed and heard in interviews that because the owner team consisted of multiple contractors,

there seemed to be alternative agendas and a need for alignment on the desired outcome of meetings. In the pre-workshop interviews, a participant shared that they thought the owner-contract employees often seemed keen to show their value by requesting more documentation and producing more reports that provided little value to the project's overall mission, which was to go fast.

These observations were supported by the survey results in Table 6.3, where the average score in the preworkshop survey on the effectiveness of meetings was 2.42 on a scale of 1-5.

Table 6.2: Results on critical domains of team dynamics from pre-workshop observations and interviews

Key Domains of Team Dynamics	Key Observations of Per-Workshop Team Dynamics
Level of trust between team members	<ul style="list-style-type: none"> Designers don't trust the contractors to assist in the design, so they exclude trades contractors and general contractors from design conversations. Designers don't trust the contractor's schedule, so they are sceptical of changing the design to allow for faster and more efficient construction. The contractor doesn't trust the owner's schedule. They feel that they have more time on the final phases of the project but are not sharing. Lack of collaboration amongst team members. Not sharing information or holding back key details of the project. There is a lot of gossip about the budget, schedule, and whether the project will move forward or potentially get cancelled. The owner was not sharing all the information about the project and corporate decisions about the project.
Quality of communication between team members	<ul style="list-style-type: none"> Very little communication outside of Project Execution Team (PET) meetings Poor communication during PET meetings about future actions and accountability. Decision-making authority is unclear. Owner contractors are in a position of authority but are not granted the authority to make decisions. PET team roles and responsibilities need to be clarified. Team members are mostly interacting with people from the same firm. Teams calls were utilised heavily and this was not as effective as the in-person colocation meetings and conversations
Clarity of request made	<ul style="list-style-type: none"> It's unclear what is being asked of me at times from the owner team. We think we are getting one thing, and we get something else. This was evident in the pay application process, not getting paid on time as promised.

	<ul style="list-style-type: none"> • We are not talking about the right things. We are talking about information instead of inventing new and better ways to do things.
Reliability of Promises	<ul style="list-style-type: none"> • People don't do what they say they will do, and that impacts how fast we can go. • I don't believe people will do what they say they will do. This causes missed deadlines and creates artificial time buffers in the work.
Meeting Effectiveness	<ul style="list-style-type: none"> • Too much admin time in the meeting and not enough work time. • People are in meetings who don't need to be there. They never contribute and are working on other things during the meetings. • Everyone reports a high level of stress about the meeting structure • There were too many ineffective meetings and insufficient time to do the work.

Table 6.3: Results on critical domains of team dynamics from pre-workshop surveys

Key Domains of Team Dynamics	Average response from pre-workshop survey on a scale of 1-5, with one being the lowest and five being the highest
Level of trust between team members	2.12
Quality of communication between team members	2.14
Clarity of request made	2.36
The reliability of promises made	2.65
Meeting Effectiveness	2.42

6.5 Findings from Workshop Phase

Following the workshop, survey results in Table 6.5 showed measurable improvements across all five focus areas, with the most significant increase, a +2.23 on a scale of 1-5, observed in the quality of communication. Participants attributed this improvement to a stronger willingness to engage in constructive yet challenging discussions, particularly on previously avoided issues such as mistrust between the finance approval group and the construction team. Several participants noted that by explicitly addressing these sensitive topics during the trust domain exercises the team reduced speculation and informal side conversations. As communication became more transparent, team members reported a parallel rise in trust, +2.16 on a scale of 1-5, which they linked to greater clarity in expectations and more reliable commitments. While these gains echo themes from Case Study One, the dynamics here were shaped by the single-cohort

setting, where senior leaders and trade forepersons worked through these issues together, creating a more integrated dialogue on project coordination and relationship repair.

6.5.1 Workshop General Conditions

The workshop occurred in a large conference room (Figure 6.2) near a shared project office workspace in the owner's facility. The room consisted of one long table with a large-format television, on which the PowerPoint presentation for the workshop was displayed.

A few participants reported being warned and complained that non-owner team members needed a guest badge to access the space, which burdened them and created a mood of annoyance.



Figure 6.2: Case study two workshop room

6.5.2 Level of Trust Between Team Members

Based on what was heard and observed in the pre-workshop interviews, the researcher knew that trust was a concept that participants needed a deeper understanding of. Due to the high levels of pre-existing mistrust surrounding the project, the researcher had to create structured opportunities for honest reflection in the workshop environment to encourage participants to open up. During the workshops, exercises were carefully designed to explore trust through the trust domains in Table 2.4, allowing participants to discuss trust issues without assigning personal blame. By encouraging participants to share their experiences using neutral language and framing breakdowns as systemic rather than individual failures, the researcher helped shift the conversation from defensiveness to constructive dialogue. This approach, combined with the researcher's neutral role and demonstrated empathy, gradually encouraged deeper disclosures and more candid discussions.

As the conversations around trust progressed, the researcher observed that participants struggled to define trust and reported a lot of mistrust between the design and construction team and the owner's team.

“The owner does not trust us to do our job. And we don’t trust them to share what they know.”

– General Contractor Project Manager.

As we progressed through the workshop, the conversations and exercises around the breakdowns of the project produced a more robust mood of trust among the participants (Table 6.4). It was observed that by discussing the mistrust in the project and creating a safe space in the workshop to explore its sources, the level of trust within the team increased.

“I have learned that I must earn and grant trust. I can only do that by building new relationships and engaging in deeper conversations.”

-Owner Project Manager

When the participants were introduced to the trust domains in Table 2.4, they realised they had a new way of observing trust. In the workshop, they were guided through a series of exercises to explore which domain of trust needed improvement. As they completed these exercises, they developed ways to observe and examine trust within the team.

The team's discussion of trust revealed possibilities for improving the project's trust level. As participants identified domains lacking trust, they began to develop ideas for strengthening and repairing them.

The team responsible for approving invoices on the owner team for the general contractor on the project recognised that they had mistrust around the domain of sincerity and engagement, and came up with the following solution in one of the trust exercises:

First, both parties should engage in frequent and honest conversations about concerns or misunderstandings, ensuring that any misalignments regarding payment schedules or documentation requirements are addressed within 24 hours of being brought up by either party. Establishing clear, mutually agreed-upon procedures for submitting and approving invoices can reduce confusion and delays, so a separate working session was agreed upon to develop those procedures together. Transparency is critical, each side should openly share relevant information and expectations regarding the timing, format, and required payment details. If someone believes the other side is not being open, they agree that we should raise that immediately. Additionally, a regular review process for payment applications and real-time updates on any issues can build reliability and demonstrate commitment to resolving problems. The team agreed to meet in person weekly to reduce the email traffic and the misunderstandings arising from those emails.

-Cross-functional conversation observed by the researcher between the Owner Finance Team and the General Contractor Finance Team in the workshop

A new collective way of thinking about trust was emerging within the team. The most notable was the realisation by an owner-project manager who stated, "We can trust people in certain domains, but we may not trust them in others." Participants talked about this domain confusion as a source of breakdown around trust.

"The idea that 'we can trust people in certain domains but not in others' helps me see that trust is context-specific and can vary depending on the nature of the task or my relationship with the other person. For instance, someone might be highly reliable in technical or operational expertise but less dependable in communication or meeting deadlines. Trust is not an all-or-nothing concept; it exists in different areas depending on people's demonstrated capabilities and behaviours. Understanding this distinction will help me focus on where trust is strong and where it needs improvement. By identifying areas lacking trust, I can take targeted steps to rebuild it without undermining trust in other areas."

-Owner Project Manager

One of the project engineers on the team also gave an example of how "the owner trusts me to draw up the details, but they don't trust me to design them". This highlights a nuanced level of trust based on perceived competence in different areas of expertise. In this case, it suggests that while the individual is trusted to document and execute detailed aspects of a project accurately, there may be reservations about their ability to handle broader, more complex tasks, such as designing an entire system. This often reflects a more complex mistrust around competency or specific skill sets, where someone is valued for their precision in technical execution but not fully trusted to make high-level design decisions that involve more responsibility or creativity. The person is trusted to do detailed work but not make more significant program-level decisions. The workshop participants recognised that acknowledging this distinction can help teams better allocate tasks based on strengths and provide opportunities for individuals to build trust in areas where they may not yet be fully trusted.

When the participants realised that trust is domain-specific, they spoke about how it can lead to a more constructive and focused approach to collaboration. This realisation helped the team

members recognise that trust is not an all-or-nothing concept, allowing them to identify areas where trust is vital and needs improvement. As a result, the team discussed strategies to avoid generalised mistrust and focus on building trust in specific domains. In one example conversation in the workshop, they discussed how you might maintain trust in someone's technical abilities while improving trust in communication or decision-making.

A critical moment in the workshop occurred during the exercise where participants delivered assessments on what they were doing well as teammates and another round in which they delivered assessments to each other about what they could do to be better or more effective teammates. After this exercise, a comprehensive debrief was conducted with the team, and many of the participants commented publicly on an increased sense of trust.

After the exercise, several participants realised that frank conversations improve trust between people by fostering openness, clarity, and understanding. Even though these conversations are difficult when individuals engage in honest, direct dialogue, they address underlying concerns, misunderstandings, and issues that may otherwise breed mistrust or frustration. They discussed how these conversations allow people to express their expectations, challenges and needs without ambiguity, reducing confusion and promoting accountability.

As we further explored frank discussions in the workshops, the group discussed how hidden conflicts or uncertainties are brought into the open in these conversations, allowing team members to resolve them constructively. They thought the process of frank conversations created a foundation for more reliable promises and actions, as everyone clearly understood what was expected. Additionally, participants shared how honest communication signals a willingness to be vulnerable and transparent, which helps build mutual respect and confidence. Team members reported that as they observed their colleagues willing to speak openly and listen actively in the exercise, they began to trust that future interactions would be based on authenticity, making relationships more robust and resilient.

“I always knew some of these opinions existed of me on the team. I always wondered what else they were saying about me to others, which made me feel like I couldn’t trust anyone.”

-Trade Foreman

As we closed our discussion on trust, the participants discussed how this awareness fosters better collaboration because team members can leverage each other's strengths more effectively. They also said it encourages open dialogue about expectations and roles, reducing frustration and misunderstandings. By focusing on domain-specific trust, the team said they could develop tailored strategies to improve relationships and performance, ultimately enhancing its overall effectiveness without undermining the areas where trust already exists. You could sense the change in the mood in the room and see the body language shift to a more positive and open posture. The researcher observed the physical signs of guards coming down in the room.

As we closed this part of the workshop, participants reported that they had new skills to build, maintain, and repair trust, and many reported that it was a skill they did not have before the workshop. As the workshop progressed, the conversations shifted to actual work situations, and participants started to speak more openly about their concerns regarding trust in the project.

6.5.3 Quality of Communication Between Team Members

In the pre-workshop interviews, participants reported that the overall quality of communication on the project could have been better. The initial exercises in the workshop revealed that the team lacked the necessary skills to engage in effective conversations that produce action. Instead, they reported getting stuck in endless “what if” conversations that rarely lead to any action. Many participants in the workshop's early discussion considered communication less critical than their jobs' technical parts. They also described communication primarily in the context of the process (email, text, social media) and not about the effectiveness and quality of the actual conversation. Participants appeared uncomfortable early in the workshop having difficult conversations, and a few reported that they were always taught to be pleasant and friendly and not to be too harsh or direct in conversations (Table 6.4). This bias towards being friendly instead of direct was

covering up unresolved issues and conflicts between team members within their firms and with workers, as well as with other companies on the project.

As participants progressed through the workshop, the quality of communication improved. There was a noticeable improvement in the quality of conversations in the workshop after the AWL was introduced. The introduction of the AWL to the participants increased awareness of where conversations are breaking down on the project. Participants began to recognise that critical elements were missing in many of the team conversations, especially the lack of explicit requests and negotiation of the CoS needed to produce a reliable commitment.

During the exercises, participants discussed how communication is crucial in a project team made up of different companies because it helps bridge the gaps between diverse organisational cultures, priorities, and working methods. They also shared their thoughts on how each company involved in a project may have its own goals, communication styles, and internal processes, which can create challenges in aligning efforts and making decisions. They shared their ideas on how clear and effective communication ensures that all parties understand the project objectives, responsibilities, and expectations, reducing the risk of misunderstandings and misaligned actions.

Regarding this project, the participants discussed how good communication helps multi-company teams coordinate efforts, share critical information, and resolve issues quickly. Since different companies might handle separate aspects of the project such as design, engineering, construction, and procurement ensuring everyone is on the same page is vital for avoiding delays, budget overruns, and quality issues.

As the workshop progressed, participants made more explicit requests in the exercises within the workshop. Using the AWL (Figure 2.2) as a diagnostic tool, they could identify where something was missing in the commitment conversations.

The participants learned how the AWL highlights where conversations fail to transition into reliable action. The team discussed how the AWL can diagnose if teams are stuck in discussions without making explicit requests, if promises are made but not fulfilled, or if feedback is lacking,

all of which can lead to a breakdown in effective communication and coordination. The team discussed how this diagnostic tool could help them understand their communication gaps and make the necessary adjustments to ensure smoother collaboration and more reliable commitments.

In debriefs at the end of both cohorts, participants reported a new realisation that, through the workshop experience, we are human beings whose communication is influenced by our moods, emotions, and historicity, in addition to the more analytical aspects of the LAP.

6.5.4 Reliability of Promises

Many participants discussed the historical issue in projects they have been involved in, where people often fail to follow through on their commitments. In the conversations around making and securing a reliable promise, the participants began to see a new possibility around making promises more reliable by ensuring that the critical elements of a promise were adequately negotiated.

Participants spoke of the quick and easy “yes” instead of robust negotiations based on explicit requests or offers to produce a new project outcome.

“I am beginning to observe the conversational moves that can be made in a negotiation. I can say “yes”, I can say “no”, or I can make a counteroffer. That is a powerful realisation.”.

-Designer

A critical discussion was around the importance of being able to say no in a stressful environment with high expectations, and how crucial it is to create an environment where people feel comfortable saying “no”.

The participants discussed how accepting a request you cannot fulfil undermines trust and disrupts the reliability of future commitments. There was a good discussion about how, when saying “no,” individuals maintain the integrity of their promises, ensuring they only commit to

tasks they can deliver on. This builds trust within the team, as others know they can rely on you to fulfil your obligations.

The team also discussed how the ability to say “no” encourages a culture of honest communication. In environments where team members feel pressured always to say “yes,” trust can erode when people fail to deliver. They all agreed that allowing “no” as a valid response ensures that conversations are authentic and that promises are made based on actual capacity and willingness.

Participants discussed the importance of making clear requests and explicit promises. When someone says, “I think I can do that,” the listener reports that they got a commitment, while the speaker says, “No, I meant I would try.” This conversation illustrated the importance of language when creating a commitment-based environment; what we say and how we say it matters.

“I used to focus on getting a quick yes and would do everything possible to force that yes. No, I can see the power in allowing someone to say no, so a more reliable promise can be negotiated.”

-General Contractor Superintendent

6.5.5 Quality of Requests

Throughout the exercises in the first few hours of the workshop, participants struggled to make an explicit request and often talked vaguely about what they liked. The listener then reported being confused or misunderstanding what the speaker was looking for. When participants began to understand the AWL, they observed themselves as either a customer or a performer in conversations. As a customer in a conversation, it is essential to articulate an explicit request and manage the conversation to get a clear, well-defined, and sound commitment from the performer. When did breakdowns occur? The AWL helped identify where the breakdown happened in conversations and commitments.

Workshop participants discussed how making a clear request eliminates confusion about what is being asked, who is responsible, and the desired outcome. They also discussed the prevalence of vague or unclear requests, which have caused performers to misinterpret them, leading to incomplete or incorrect actions. They all agreed that a clear request ensures everyone knows exactly what needs to be done.

The AWL demonstrates the importance of making an explicit request to open up the negotiation conversation about the CoS. Aligning the CoS produced a more reliable commitment from team members.

“Before the loop, I was unaware of the key elements of a successful conversation for action. Now I can see how the speech acts fit together to create a successful and clear transaction.”

-Trade Foreman

6.5.6 Meeting Effectiveness

As demonstrated in workshop exercises, the central issue of ineffective meetings on the project was team members' inability to move from making assessments and having conversations about the possibility of making explicit requests or offers to moving from a conversation about possibility into a conversation about action.

The AWL conversation demonstrated to the participants that they are often stuck in making assessments and sharing opinions, and rarely move into making a request or offer. As a result, critical tasks still need to be done, and the teams discussed that key meetings often wrap up with no agreed-upon actions.

As communication improves and trust is built, the effectiveness of meetings will increase.

“We often discuss issues for most of a meeting and then, with little time left, try to figure out what to do next. I can see now that shifting a conversation from possibility to action requires someone to make a request or an offer.”

-Owner Project Manager

Table 6.4: Case Study Two team dynamic workshop observations

Key Issue	Key Observations of Team Dynamics in the Workshop
Level of trust between team members	<ul style="list-style-type: none"> • All participants were cautious and reluctant to open up at the beginning of the workshop. • Participants sat next to people from their own company when initially coming into the room. Still, they moved around more as the workshop progressed and appeared more comfortable speaking with people they didn't work with. • Participants seemed apprehensive about sharing openly. This did improve over time.
Quality of communication between team members	<ul style="list-style-type: none"> • The assessment exercise revealed that many are uncomfortable having difficult conversations. • Participants spoke about avoiding difficult conversations and that people avoided direct conversations on the project. • Participants struggled to deliver negative assessments to each other. • Participants found that hearing praise made them uncomfortable.
Clarity of request made	<ul style="list-style-type: none"> • Team members practised making clear requests in the exercises and shared how they could benefit from this in their work.
The reliability of promises made	<ul style="list-style-type: none"> • Team members practised negotiating promises and learned about the elements of a successful promise. They shared with each other how they could spend more time negotiating promises instead of just saying yes.
Meeting Effectiveness	<ul style="list-style-type: none"> • Participants were energised to use the workflow loop to understand better why breakdowns are happening in project communication • Participants shared that, in meetings, people often focus on reporting out rather than creating action.

6.6 Findings from Post-Workshop Phase

After the workshop, the participants were surveyed again to determine whether their assessments of the project's level of trust and the quality of the communication had changed.

The second case study underscored that even experienced project teams benefit from a shared, explicit framework for managing commitments. In this pharmaceutical expansion, the workshop environment revealed that although participants had been working together for several months, critical elements such as conditions of satisfaction and explicit acceptance of requests were often missing from their day-to-day interactions. The result was avoidable friction, particularly between the owner's finance function and the construction managers when deliverables did not meet unspoken expectations.

As seen in Table 6.5, there was a positive shift in the participants' reporting across all the categories measured. For qualitative studies utilising Likert scales, a conventional measure often employed is the minimal clinically significant difference or the degree of change perceived as meaningful by participants. Research indicates that a change of one full point, such as from a three to a four on a five-point scale, is typically seen as significant (Dahlberg et al., 2020). The

most significant change was in the quality of communication. The workshops aimed to help the team have better conversations and increase the quality of the conversations within the team. As a result, trust also increased, resulting from focusing on having difficult conversations that explore breakdowns and disagreements. When we discuss what we haven't been discussing and bring those issues to the surface, it can be difficult, but it is a skill that can be learned. When we have difficult conversations, we reduce the amount of gossip and make the breakdowns explicit, building trust within the team.

One of the most significant insights was that the single-cohort format where senior leadership, mid-level managers, and trade forepersons participated in the same session, fostered cross-hierarchical understanding. This structure facilitated the identification of recurring issues, such as payment approval bottlenecks, by allowing decision makers and work executors to negotiate expectations in real time. Participants also noted that applying the trust domains framework to an active project dispute allowed them to identify which aspects of trust were intact and which needed targeted repair, reducing generalised blame and focusing effort on solvable problems.

The case also highlighted the importance of timing. Introducing LAP training at a project stage where teams were transitioning from late design into early construction meant that communication patterns were still malleable. This timing allowed participants to apply LAP tools immediately to coordination challenges, such as integrating new subcontractors, without the resistance often found in teams whose habits are more entrenched.

Table 6.5: Post-workshop findings

Question	Post Workshop average response on a scale of 1-5, with one being the lowest and five being the highest	Change in reported results from pre-workshop average.
How would you rate the level of trust within the team?	4.28	+2.16
How would you rate the quality of communication within the team?	4.37	+2.23
How would you rate the reliability of the promise made?	4.21	+1.85

How would you rate the clarity of requests?	4.01	+1.36
Meeting effectiveness	4.10	+1.68

6.6.1 Level of Trust Between Team Members

In follow-up interviews and conversations with workshop participants, most participants commented on the need for more trust in the project (Table 6.6). Because the cohort consisted of people from all levels of leadership on the project, they reported a lack of trust at different levels; the more senior members of the workshop tended to focus their mistrust on the organisational level. The general contractor needs to trust the owner to pay invoices on time. The owner must trust that the general contractor is invoicing the correct items. The senior leaders reported that they trusted their counterparts in the other organisations but did not trust the competency of some team members in generating reports, invoices, etc.

The foreman-level leaders needed to trust senior management more generally. They did not trust the information they were being given, nor did they believe senior management understood the impact of the lack of direction and decision-making on their ability to complete work. In all groups, it was common for mistrust to be directed at organisations and groups of people rather than toward individual project participants.

Table 6.6: Post-workshop feedback on trust

Outcome of Higher Level of Trust	Workshop Feedback
Increases Reliability of Promises	<ul style="list-style-type: none"> Trust enables team members to make and keep promises with greater confidence. Trust plays a key role in ensuring that commitments are made based on genuine capacity and willingness to deliver. When team members trust that others will follow through on their promises, they can better plan, prioritise tasks, and avoid unnecessary delays.
Enhances Communication Quality	<ul style="list-style-type: none"> Trust encourages open, honest, and transparent communication. Team members are more likely to provide accurate information, give constructive feedback, and address issues promptly when there is a foundation of trust. Trust improves decision making and problem solving, leading to more effective coordination and fewer misunderstandings.

Facilitates Risk-Taking and Innovation	<ul style="list-style-type: none"> • In a high-trust environment, team members reported feeling safer taking risks and proposing innovative ideas without fear of judgment or failure. • Trust allows teams to explore new approaches and solutions, knowing that their efforts will be supported and mistakes will be viewed as learning opportunities, rather than failures.
Encourages Accountability	<ul style="list-style-type: none"> • Trust fosters a sense of responsibility and accountability within the team. • When team members trust each other, they feel a stronger obligation to deliver on their promises, meet deadlines, and contribute to the team's success. • Trust creates a positive feedback loop where trust and accountability reinforce each other, leading to improved performance.
Reduces Friction and Conflict	<ul style="list-style-type: none"> • When trust is strong, there is less need for micromanagement or constant verification of each other's work. • Trust reduces friction, as team members trust that their colleagues are competent and committed to the project. • Trust also helps resolve conflicts more effectively, as team members are more likely to approach disagreements with empathy and a focus on mutual solutions.
Supports Adaptability	<ul style="list-style-type: none"> • In fast-paced or complex projects, trust allows teams to adapt to changing circumstances more quickly. • When trust exists, team members can adjust their actions, delegate tasks, or shift priorities more fluidly because they trust that others will do the same without needing to renegotiate every detail.

6.6.2 Quality of Communication Between Team Members

Most workshop participants spoke of breakdowns in communication in pre-workshop interviews (Table 6.7). They were primarily focused on needing more clarity around what was being asked of them. This lack of clarity existed not only at the senior level but also at the foreman level.

During the workshops, participants engaged in a mix of reflections and discussions, primarily focusing on the need for clearer project requests. The assessment revealed that people rarely asked questions to clarify these requests.

Table 6.7: Post-workshop feedback on quality of communication

Outcome of Improved Quality of Communication	Workshop Feedback
Clarifies Requests and Expectations	<ul style="list-style-type: none"> The Action Workflow Loop emphasises the importance of clear requests. High-quality communication ensures that requests are explicit, leaving no room for ambiguity about what is needed, by when, and under what conditions. Clarity reduces misunderstandings and helps us align their actions with the team's goals, improving task execution and reducing errors
Improves Commitment and Reliability	<ul style="list-style-type: none"> Quality communication includes negotiating commitments that team members can realistically fulfil. It ensures that promises are made with a clear understanding of the CoS. When team members communicate openly about their capacity and constraints, they can make more reliable promises, which enhances the overall performance of the team because everyone can count on those commitments being met.
Timely Feedback and Adjustments	<ul style="list-style-type: none"> We learned in the workshops that effective communication involves regular feedback loops where team members can assess whether actions meet expectations. High-quality communication facilitates timely and constructive feedback, allowing us to make necessary adjustments, address issues early, and continuously improve performance.
Reduces Miscommunication and Rework	<ul style="list-style-type: none"> When communication is clear and explicit, there is less room for misinterpretation. This reduces the likelihood of mistakes, rework, and delays, which often arise from poor communication. By minimising inefficiencies in communication, we can maintain momentum and focus on delivering high-quality results
Accountability	<ul style="list-style-type: none"> Good communication helps ensure that all team members understand their responsibilities and the expectations others have of them. Quality communication promotes accountability, as individuals are more likely to take ownership of their work when they have clear instructions and understand how their contributions fit into the bigger picture. With improved accountability, we can meet deadlines and deliver consistent results.
Enhances Collaboration and Coordination	<ul style="list-style-type: none"> A robust communication framework views conversations as a tool for action. High-quality communication enables smoother coordination between team members, as it allows for better negotiation, delegation, and adjustment of tasks. Quality communication facilitates more cohesive teamwork, where everyone is working in sync toward the shared objective

Builds Trust and Reduces Conflict	<ul style="list-style-type: none"> • Transparent, respectful, and consistent communication builds trust within the team. • When team members trust one another, they collaborate more effectively, resolve conflicts quickly, and maintain a positive work environment. • Trust, built on high-quality communication, strengthens the overall cohesion of the team, leading to higher performance
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Higher-level leaders reported focusing more on program-level breakdowns, while leaders closer to work reported being more concerned with information flow and work coordination.

The exercises within the workshops provided a valuable opportunity to explore how modifying meetings and team interactions could enhance the project's objectives by improving information flow and fostering a collaborative environment. The LAP helped participants manage the fast-paced flow of project information by providing a structured framework for interpreting and responding to communication. Specifically, introducing speech acts and the AWL gave team members tools to distinguish between mere possibilities and active commitments, allowing them to track better what was being asked, promised, or required in real-time. Evidence from workshop observations and post-exercise reflections showed that participants became more adept at identifying when conversations lacked clarity or follow-through skills that proved essential in a project context marked by schedule pressure and overlapping demands. One participant noted, “I finally understood why we were getting stuck in meetings; we were hearing updates but not making real requests,” illustrating how the LAP concepts enabled sharper focus and more coordinated action, which the team reported in post-workshop interviews that it allowed them to coordinate well and not be overwhelmed because information flowed instead of being blocked in communication channels. This shift was also reflected in the post-workshop survey data, where participants reported improved ability to “identify missing commitments” and “clarify expectations quickly” during fast-moving meetings.

6.6.3 Reliability of Promises

There was widespread concern about the reliability of the project's commitments (Table 6.8). The senior leaders in the workshop expressed concerns that big promises about how we would work together, resolve disputes, and align on project outcomes still needed to be fulfilled.

At the trade foreman level, the focus was on others not fulfilling their commitments, which in turn impacted their ability to schedule and plan work on the project reliably.

Table 6.8: Post-workshop feedback on the reliability of promises

Outcome of Improved Reliability of Promises	Workshop Feedback
Builds Trust	<ul style="list-style-type: none"> Reliable promises foster trust within the team. When team members fulfil their commitments regularly, they demonstrate reliability, making others more willing to depend on them. Trust reduces the need for constant supervision or micromanagement and allows for smoother collaboration. With high levels of trust, teams are more cohesive and efficient because they can rely on each other to meet deadlines and achieve shared goals.
Improves Coordination	<ul style="list-style-type: none"> Promises are the mechanism that moves work forward. Reliable promises ensure that tasks are completed in sequence and on time. When team members can depend on each other's commitments, it improves the overall coordination of activities, reducing delays and bottlenecks in the workflow. Smooth coordination helps the team maintain project momentum and meet deadlines
Reduces Uncertainty and Rework	<ul style="list-style-type: none"> When promises are reliable, we can plan and allocate resources more effectively. Knowing that a commitment will be fulfilled allows us to make better decisions about scheduling, staffing, and priorities. Reduces the need for last-minute adjustments and rework caused by missed deadlines or unmet expectations, which can otherwise drain time and resources.
Enhances Accountability	<ul style="list-style-type: none"> Reliable promises create a sense of accountability. Team members are more likely to take ownership of their work when they know their commitments will be evaluated and relied upon by others. Accountability encourages higher performance, as individuals strive to meet their commitments and contribute to the team's success. It promotes a culture of responsibility, where everyone understands the impact of their actions on the team's overall performance.
Increases Efficiency	<ul style="list-style-type: none"> Reliable promises help eliminate the inefficiencies that arise from miscommunication or unmet commitments. When we make clear and reliable promises, we can avoid wasting time on follow-ups, clarifications, or corrections. If we can streamline the process of fulfilling commitments, we can focus on completing tasks and achieving their objectives more quickly and effectively.
Creates Positive Moods	<ul style="list-style-type: none"> When team members can rely on one another to keep their promises, it boosts the overall project mood.

	<ul style="list-style-type: none"> • There is less frustration and fewer conflicts when everyone is working in alignment with the same expectations. This positive working environment increases motivation and engagement, leading to higher performance across the team.
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6.6.4 Quality of Requests

The workshop discussed requests in various ways (Table 6.9). The more senior people spoke about missing requests at a program level, such as large-scope items that may or may not be part of the project and gaps in who was responsible for what pieces of work. For those closer to the work, the lack of clarity around requests was more about the sequencing of tasks and the roles each crew was supposed to perform.

Table 6.9: Post-workshop feedback on the quality of requests

Outcome of Improved Quality of Requests	Workshop Feedback
Reduces Ambiguity and Misunderstandings	<ul style="list-style-type: none"> • High-quality requests are explicit, specific, and clear, which helps avoid misunderstandings about what is expected. • When project team members make precise requests, there is less room for ambiguity, leading to fewer errors and less rework. • Clear requests ensure that performers know exactly what is required, reducing confusion and aligning everyone's efforts toward the same goals.
Improves Commitment and Accountability:	<ul style="list-style-type: none"> • When a request is clear, the person receiving it can make a well-informed decision on whether to accept, reject, or negotiate the terms. • Clear requests improve the reliability of the commitments made. • Clear requests make it easier for team members to say “yes” with confidence or negotiate conditions that they can genuinely fulfil.
Enhances Efficiency and Productivity	<ul style="list-style-type: none"> • Improving the quality of requests helps us work more efficiently. • Clear and specific requests minimise the need for follow-up clarifications or additional meetings to resolve confusion.
Aligns Expectations and Reduces Conflicts	<ul style="list-style-type: none"> • Clear requests help align expectations between the person making the request and the person fulfilling it. • When everyone understands the CoS—what constitutes success for the task at hand—it reduces the likelihood of misaligned expectations and potential conflicts.
Supports Better Planning and Resource Allocation	<ul style="list-style-type: none"> • High-quality requests provide clarity on timelines, resources, and deliverables, allowing teams to plan more effectively. • When requests are detailed and specific, team members can allocate resources appropriately, schedule tasks more accurately, and anticipate potential challenges.

Increases Trust and Collaboration	<ul style="list-style-type: none"> I think as the quality of requests improves, team members will begin to trust each other more because the expectations are clear, and commitments are reliable. Trust enhances collaboration, as team members feel more comfortable making and fulfilling requests, knowing that their efforts will be met with clear direction and appreciation.
Promotes Problem-Solving and Innovation	<ul style="list-style-type: none"> When requests are clear, team members can engage in more meaningful discussions about potential solutions or alternative approaches. Clear requests create space for team members to think critically about how best to fulfil the request, which should lead to creative problem-solving and improved project outcomes.

6.6.5 Meeting Effectiveness

Everyone recognised that meetings could have been more effective on the project (Table 6.10). Senior leaders expressed concerns about the lack of action and ineffective meetings, whereas the trade foremen spoke more positively about meetings that focused on coordinating work. However, they also reported that the plan changed so rapidly during the week that it was hard to take the weekly planning conversations seriously.

Table 6.10: Post-workshop feedback on meeting effectiveness

Outcome of Improved Meeting Effectiveness	Workshop Feedback
Enhances coordination and execution	<ul style="list-style-type: none"> Effective meetings occur when we move from discussions to action. When meetings lead to clear requests and commitments, we leave with well-defined tasks, timelines, and responsibilities.
Increases accountability and reliability	<ul style="list-style-type: none"> Explicit commitments are made, and clear CoS are established. When team members make reliable promises during meetings, they are more accountable for fulfilling them.
Reduces miscommunication and clarifies expectations	<ul style="list-style-type: none"> When we use clear language, structured requests, and explicit agreements, we help minimise misunderstandings. We are more likely to align on project goals, resources, and timelines when conversations are structured around making clear requests and promises.
Builds trust and collaboration	<ul style="list-style-type: none"> When meetings are effective, we can see that their input leads to actionable results, fostering a culture of trust. We are more likely to trust one another when meetings consistently produce reliable commitments.

Promotes efficient use of time	<ul style="list-style-type: none"> Effective meetings are focused, with clear objectives and outcomes. When we can avoid vague discussions and unnecessary debates, we can use meeting time efficiently to make decisions, assign tasks, and move forward.
Improves problem-solving and decision-making	<ul style="list-style-type: none"> Effective meetings provide a platform for team members to engage in productive dialogue, share insights, and negotiate solutions. When meetings are structured to facilitate clear requests, offers, and counteroffers, they enable better decision-making.
Ensures progress and keeps projects on track	<ul style="list-style-type: none"> Regular, effective meetings will allow us to review progress, identify potential issues early, and adjust plans as needed. If we maintain a steady rhythm of communication, we can ensure that tasks are completed on schedule and that any deviations from the plan are quickly addressed.
Creates alignment and shared understanding	<ul style="list-style-type: none"> Effective meetings will ensure that we all share the same understanding of the project's goals, priorities, and next steps.

6.7 Summary

This case study provided valuable insight into how teams can improve trust and communication on projects by building new skills and practices from the LAP. The LAP workshops raised the project team's awareness of communication, trust, and moods. They also introduced the team to new skills and the latest coordination practices.

This case study differed from the previous one, involving just one cohort of workshop participants instead of the two in the last chapter. This allowed the researcher to examine how the workshops impacted participants at varying levels of the project in one group. As with the previous case study, the project-level leaders focused more on how trust, language, and moods affected the overall project. In contrast, the trade foreman focused more on the tactical practices that might produce a better-coordinated meeting and exchange of ideas.

In chapter seven, we will discuss the findings from the two case studies and compare and contrast them with more recent literature developments in the field.

Chapter Seven: Cross Case Analysis and Discussion of Findings

7.1 Introduction

This chapter presents a cross-case analysis of the two action case studies, as well as a discussion of the findings from these studies. This section integrates the cross-case analysis with the empirical findings presented in Chapters Five and Six, examining how the LAP influenced communication quality within two complex construction projects. It examines how the LAP affects trust, commitment, reliability, and communication clarity within construction project teams and compares these findings with extant literature. It also examines how the LAP impacts the advancement of the lean construction agenda by enhancing communication effectiveness on projects. This chapter contributes to research objectives three, four, and five of the study.

7.2 Cross-Case Comparison on the Impact of the LAP on the Overall Communication in Project Teams

The LAP workshops aimed to transform project teams' communication style, shifting from fragmented, transactional exchanges to coordinated, trust-building conversations. This section compares how communication evolved across both action case studies following the LAP workshops, revealing common patterns, context-specific differences, and similarities, as well as insights into how the action case study teams engaged and utilised a new understanding of the LAP to manage conversations for action and overcome historical communication breakdowns.

7.2.1 Pre-Workshop Communication Dynamics Across Cases

Before the LAP workshops, both project teams exhibited deeply rooted communication dysfunctions. These included unclear or absent requests, avoidance of difficult conversations, and a general reliance on siloed, asynchronous communication such as email. Conversations often focused on status updates and document exchanges rather than proactive coordination or mutual understanding. These patterns were evident in Tables 5.3 and 6.2, where team interactions lacked engagement across organisational boundaries. Pre-workshop surveys (Tables 5.4 and 6.3) reflected consistently low scores across key communication domains, with average responses below three on a five-point scale.

Team members from both cases expressed discomfort with direct conversations, often due to concerns about appearing confrontational or undermining team cohesion (Tables 5.3 and 6.2). As a result, significant issues, such as budget concerns, schedule risks, and design misalignments, were left unaddressed, leading to coordination breakdowns and unresolved tension.

Despite differing project types, one in healthcare and the other in pharmaceutical manufacturing, both case study teams exhibited comparable communication challenges: fragmented interactions, vague requests, weak interpersonal trust, and inconsistent commitments. These shared issues and the teams' response to LAP-informed interventions form a compelling narrative about how language practices fundamentally shape project performance.

Across both projects, pre-workshop interviews and surveys revealed similar patterns of communication breakdown. As seen in Tables 5.3 and 6.2, team members largely confined their communication to formal meetings and email exchanges, with minimal informal engagement or cross-organisational dialogue. Trust was generally siloed; team members expressed comfort with colleagues within their own firm, while those representing external organisations, especially contract-based personnel, were viewed with scepticism. Requests were often implicit or poorly defined, leading to misalignment, defensive behaviour, and unreliability in commitments. These conditions created a conversational culture defined more by compliance and avoidance than by accountability or shared purpose.

These dynamics align directly with the foundations of the LAP, which suggests that communication failures occur when teams lack distinctions around speech acts, conditions of satisfaction, and the conversational sequence of action (Flores, 2013). In both cases, the teams exhibited an overreliance on assessments presented as assertions, which stalled productive dialogue and led to conflict or inaction. Meetings became ritualistic, with unresolved discussions, ambiguous takeaways, and frequent rework due to misunderstandings.

7.2.2 Post-Workshop Shifts: Improvements in Trust and Communication

Participants were introduced to distinctions such as speech acts, the AWL (Figure 2.2), and domain-specific trust (Flores, 2013). Across both cases, participants reported notable improvements in their ability to observe and respond to communication breakdowns, as reflected in Tables 5.8 and 6.5. The workshops reframed communication as a tool for coordinated action. Participants began to differentiate between assessments, assertions, requests, promises, and declarations (Austin, Urmson, and Sbisà, 1975; Searle, 1969). They also developed a shared vocabulary for identifying and negotiating conditions of satisfaction, enhancing the reliability of promises and mutual accountability (Flores, 2013). Ambiguous statements like "We'll try" were replaced with clear commitments such as "We will deliver by Thursday based on X conditions."

Discussions on trust helped teams understand that trust operates in distinct domains, and that mistrust often results from domain confusion. By unpacking these distinctions, teams were able to shift from generalised suspicion to focused improvements on specific trust relationships. The AWL became a diagnostic tool, enabling teams to identify missed commitments or incomplete conversations and take corrective action.

While both teams demonstrated improvement in communication, Case Study Two showed a more dramatic post-workshop shift. This was due in part to (1) the active involvement of a lean construction-experienced executive sponsor who reinforced LAP principles (Raziq et al., 2018), and (2) a more acute awareness of communication breakdowns between contract workers and core team members, which created an urgency for change. In contrast, Case Study One addressed longstanding tensions, including perceptions of micromanagement and friction between the design and owner teams. Although participants appreciated the tools introduced, the transformation unfolded more slowly, indicating a need for possible continued reinforcement beyond the workshop period. These differences reinforce the idea that the context and organisational environment significantly affect the uptake and durability of communication improvements (Reza Hosseini et al., 2017; Malik et al., 2023).

The active involvement of a lean construction experienced executive sponsor who consistently reinforced LAP principles proved to be a decisive factor in sustaining adoption, particularly in

Case Study Two. Beyond simply endorsing the workshops, this sponsor modelled commitment-based communication, integrated LAP distinctions into leadership practices, and ensured alignment between the project's lean objectives and daily team interactions. Such visible, hands-on engagement from a leader with both positional authority and lean construction expertise created a sense of legitimacy around the change effort, encouraged consistent application of LAP tools, and bridged gaps between diverse stakeholder groups. This finding reinforces the broader literature, which emphasises that leadership commitment is critical to embedding new practices, as it motivates teams, enhances morale, and reduces resistance to change (Raziq et al., 2018).

The results of both case studies strongly support existing literature on the role of communication in project success. Communication in the LAP is not merely transactional; it is constitutive; it creates commitments, clarifies expectations, and enables effective coordination (Muneer et al., 2022; Flores, 2013). High-quality communication, especially through structured speech acts, ensures clarity, reduces ambiguity, and increases accountability (Austin, Urmson and Sbisà, 1975; Searle, 1969). As found by Adu and Opawole (2020) and Chinowsky, Diekmann and Galotti (2008), poor communication is among the most cited causes of project failure in construction. The LAP workshops addressed this issue directly by equipping participants with tools for building trust, clarifying requests, and making reliable promises. Moreover, by increasing psychological safety and promoting a culture of transparency, the LAP training helped reduce the fear of speaking up, which is critical for team well-being and performance (Edmondson, 1999; Zawawi et al., 2023; Eisenberg and Post, 2019). The introduction of the LAP through the workshops, therefore, provided a practical framework for understanding and improving team communication.

7.3 Cross-Case Comparison on the LAP and Quality of Communication

The LAP workshops marked a significant shift in both teams' quality of communication practices, as evidenced in Table 7.1. Pre- and post-intervention survey data indicated substantial improvement in perceived communication quality. In Case Study One, the average quality rating increased from 2.56 to 4.33, while Case Study Two showed a shift from 2.12 to 4.28 which is a larger delta despite more challenging organisational conditions.

Table 7.1: Cross-case analysis of survey results on quality of communication

Action Case Study	Pre-Workshop Survey Results	Post Workshop Survey Results	Pre and Post-Workshop Survey Change
Action Case Study One	2.56	4.33	+1.77
Action Case Study Two	2.12	4.28	+2.16

Participants in both studies attributed these changes to specific LAP tools introduced in the workshops. In particular, the AWL and the taxonomy of speech acts enabled participants to dissect and improve the structure of their conversations. Requests became more explicit, and promises were made with negotiated CoS. Team members began to feel empowered to say "no" or make counteroffers without fear of conflict. These behavioural shifts improved accountability and reduced communication friction. The researcher observed that by the end of each workshop, participants were not only using the terminology of the LAP, such as "assessment," "assertion," and "conditions of satisfaction", but were also actively navigating conversational breakdowns using the AWL. In post-workshop interviews, participants described a new sense of conversational clarity and agency. For instance, one noted that "we're not just talking at each other anymore, we're actually coordinating."

Case-specific contexts also shaped the trajectory of change. Case Study One, marked by relative team stability and organisational alignment, experienced faster integration of LAP practices. Pre-existing relationships created a fertile ground for the development of a shared conversational culture. Conversely, Case Study Two faced greater structural complexity, including higher turnover and a bifurcated owner team composed of full-time staff and contract workers. Here, the application of the LAP helped create a common linguistic and conceptual platform that bridged organisational divides and enabled more coherent collaboration despite persistent challenges. These findings suggest that the LAP does more than improve communication, it transforms the purpose and structure of communication itself. In both case studies, communication evolved from a passive exchange of information to an active mechanism for building alignment, trust, and coordinated action.

7.4 Cross-case Comparison on the Influence of the LAP on Trust within Project Teams

This section presents an integrated cross-case analysis of how the LAP influenced the development, repair, and expansion of trust within the two project teams examined in Chapters Five and Six. Trust emerged as both a foundational precondition and a dynamic outcome of effective collaboration. While each team experienced unique organisational and interpersonal challenges, the application of LAP principles provided a structured and transformative framework for cultivating trust in high-stakes, multi-organisational environments. Before the LAP workshops, both project environments demonstrated substantial trust asymmetries, as shown in Tables 5.5 and 6.6. Pre-workshop interviews revealed a consistent pattern: team members generally trusted those within their own firms but were wary of external stakeholders, especially contract employees or consultants whose roles and accountabilities were often unclear. This mistrust manifested as guarded behaviour, information hoarding, delayed decision-making, and hesitation to engage in candid conversations. In Case Study Two, this fragmentation was even more pronounced due to high turnover, fragmented owner representation, and weak relational ties among key participants. These trust deficits contributed to inefficiencies in communication and coordination, mirroring broader findings on the relationship between low trust and diminished project performance (Uraon et al., 2024; Ning et al., 2019).

The LAP workshops provided a turning point by reframing trust not as a vague emotional state but as a set of domain specific assessments of sincerity, competence, reliability, and care, each of which could be observed, discussed, and repaired through conversational practice. Drawing on the distinctions introduced in Table 2.4, participants began to recognise that trust was not monolithic. In both workshops, the researcher observed a growing ability among participants to locate the source of trust breakdowns and to distinguish between, for example, distrust in someone's technical competence versus distrust in their follow-through or sincerity. Trust, previously experienced as binary (either present or absent), began to be understood through the domain-specific model introduced by the LAP. Tables 5.5 and 6.6 demonstrate how participants applied these domains in real-time to identify, discuss, and repair trust breakdowns. This allowed teams to move from abstract concerns about "not being heard" to specific, actionable conversations about where trust could be restored.

The pre-and post-workshop survey results (Table 7.2) underscore this transformation. Trust levels improved significantly in both teams, with Case Study One rising from 2.48 to 4.33 and Case Study Two improving from 2.14 to 4.37. The more significant increase in Case Study Two suggests that even in more fragmented environments, trust can be rapidly built when LAP is effectively introduced.

Table 7.2: Cross-case analysis of survey results on trust

Action Case Study	Pre-Workshop Survey Results	Post Workshop Survey Results	Pre- and Post-Workshop Survey Change
Action Case Study One	2.48	4.33	+1.89
Action Case Study Two	2.14	4.37	+2.23

Participants engaged in trust-building exercises that encouraged honest assessments, reflections on past breakdowns, and real-time practice in granting and earning trust. These activities fostered trust in open conversation, shifting it from a space of silent judgment to an explicit dialogue. Although initially uncomfortable, participants in both cases reported that these conversations led to stronger bonds, greater psychological safety, and a shared willingness to engage more transparently.

One of the most transformative insights was the recognition that trust could be deliberately cultivated through the AWL and the speech acts. When team members began making clearer requests, articulating conditions of satisfaction, and holding each other accountable to promises, trust grew as a consequence of reliable, coordinated communication. As noted in both the workshop observations and post-workshop interviews, this behavioural consistency became the basis for restoring confidence in one another. Increased trust, in turn, made participants more open to collaborative problem-solving, particularly in situations of pressure or uncertainty.

That said, the pace of change varied. Case Study One, characterised by team stability and stronger pre-existing relationships, adopted the LAP framework more rapidly. Trust began to build early during the workshops and was visibly reinforced through repeated positive interactions. In Case Study Two, high turnover and divergent stakeholder agendas initially

delayed progress. Yet once LAP practices were adopted, they provided a common language that helped overcome interpersonal and organisational divides.

These dynamics align with the concept of swift trust, where trust is rapidly assumed and later verified in temporary or high-velocity teams that lack prior relational history (Barrett, 2025). Through the structured routines of LAP, such as mutual commitments, transparent request-promise exchanges, and facilitated alignment, teams begin to "act as if" trust is already in place. That assumption supports collaboration even amid instability, and subsequent positive interactions (e.g., consistent fulfilment of promises) serve to reinforce and calibrate that trust over time. In both contexts, the LAP thus facilitated trust-building more swiftly than conventional relational development would allow, highlighting its value in enabling cohesion and aligned action in transient, fast-moving project environments.

From a theoretical standpoint, the LAP framework validates the argument that trust is not static but emergent through language and action, a view advanced by Flores and Winograd (1993). In traditional project environments, trust is often assumed to evolve organically over time or through shared history. The literature on swift trust highlights that, in temporary or unstable teams, trust can develop rapidly when members rely on role clarity, credible performance cues, and structured interaction patterns rather than long-term relational history (Barrett, 2025). However, such studies have not considered the role of the LAP in enabling this accelerated trust formation. The findings of this research extend the swift trust conversation by showing that LAP provides a structured conversational framework through precise requests, clear promises, and negotiated CoS that allows teams to build trust quickly and intentionally, even in high-turnover or newly formed project environments. This positions the LAP not only as a tool for improving communication but also as a practical enabler of swift trust, offering a novel contribution to both the lean construction and trust development literatures.

This reframing is critical in design and construction projects, which are inherently temporary and involve cross-organisational participants who may not have longstanding relationships. As many participants noted during the workshops, the typical time it takes to build trust was too long to

meet the demands of fast-moving project cycles. The LAP helped compress that timeline by teaching participants how to trust by understanding what trust means and where it breaks down.

Trust also emerged as a linchpin for other critical outcomes. As communication improved, so did psychological safety. Participants reported being more comfortable sharing concerns, raising issues early, and providing feedback. This aligns with existing literature that links conversational quality and face-to-face interaction with trust development in project settings (Zuppa, Olbina, and Issa, 2016; Akan, Jack, and Mehta, 2020). Moreover, by developing the ability to recognise and separate assertions from assessments, teams learned how to interpret and offer feedback without damaging relationships critical for maintaining momentum in collaborative environments.

In the post-workshop interviews, many participants reflected on how earlier trust breakdowns, such as misalignment around budgets or uncommunicated design changes, had led to defensive posturing and information withholding. These behaviours, in turn, stalled progress and deepened mistrust. The LAP framework helped reframe those events not as interpersonal failings but as breakdowns in conversational integrity that could be resolved.

The data from the workshops demonstrated that the LAP proved to be more than a tool for communication; it was also a catalyst for building trust. By enabling teams to move away from assumptions and emotional reactivity toward shared language and clear commitments, the LAP allowed trust to become something that could be built and repaired rather than merely relying on hope. The results suggest that embedding the LAP early in project formation can significantly improve team cohesion, accelerate alignment, and enhance overall project effectiveness, particularly in high-risk, multi-stakeholder contexts typical of lean construction.

7.5 Cross-Case Comparison on the Impact of the LAP on Clarity and Effectiveness of Requests

While each project faced different contextual, cultural, and organisational challenges, both demonstrated a marked improvement in how requests were made, interpreted, and acted upon after the LAP intervention. By embedding a shared linguistic framework rooted in the LAP,

mainly through distinctions such as the AWL and speech acts, project teams became more precise, intentional, and accountable in their communication. The result was a measurable improvement in coordination, reliability of commitments, and team alignment. In both case studies, pre-workshop interviews and observations exposed a consistent pattern of vague and ineffective requests (Tables 5.3 and 6.2). Conversations often lacked clear follow-through. Requests were frequently framed as suggestions, e.g., "We should look into this" or "Can someone handle that?" with no designated performer, timeframe, or CoS. As a result, team members reported confusion, inaction, and duplicated efforts, which further contributed to wider communication breakdowns and erosion of trust. Meetings often ended without clear next steps, and the responsibility for tasks remained unclear.

These issues are consistent with existing LAP literature, which asserts that ineffective requests often stem from missing speech acts or incomplete conversational moves (Flores, 2013). In many instances, the problem was not a lack of willingness to act but a lack of structure and precision in the request-making process. The LAP workshops introduced a practical framework to address this problem. Participants learned that well-formed requests require clear elements such as a named performer, a desired outcome, CoS, and a mutually agreed-upon timeframe. Exercises during the workshop allowed participants to observe and practice making clear requests and receiving feedback. The researcher observed that, as these distinctions were internalised, participants became more intentional in how they formulated requests. Initially, many expressed discomfort with being explicit, fearing they might appear demanding or confrontational. However, as trust improved and LAP distinctions became more familiar, teams began to see clarity as a source of collaboration rather than conflict.

Survey data confirmed these behavioural shifts. As shown in Table 7.3, both teams saw measurable improvements in the clarity and effectiveness of their requests, with Case Study One increasing from 2.56 to 3.89 and Case Study Two from 2.36 to 4.01.

Table 7.3: Cross-case study analysis of survey results on clarity and effectiveness of requests

Action Case Study	Pre-Workshop Survey Results	Post Workshop Survey Results	Pre and Post-Workshop Survey Change
Action Case Study One	2.56	3.89	+1.45
Action Case Study Two	2.36	4.01	+1.36

Despite these shared improvements, the pace and ease of adoption varied across the two cases. In Case Study One, a relatively stable team environment enabled quicker integration of the LAP concepts. Participants reported in post-workshop interviews that they had begun using clear request language in daily meetings, including clear assignments of responsibility and discussion of timelines. The cultural cohesion of the team and the openness to new communication practices accelerated this transition. In contrast, Case Study Two featured a more fragmented structure, with complex stakeholder relationships and a higher baseline of interpersonal mistrust. Here, participants initially showed slower adoption of the LAP principles. Yet, as trust developed through the workshops and conversations became more structured, the impact of explicit request-making became evident. Participants reported that they began using the LAP distinctions to manage uncertainty, align stakeholder expectations, and negotiate shared action even in the absence of longstanding relationships. Table 6.9 illustrates how increased clarity in requests also supported broader improvements in trust and coordination.

One of the most profound shared insights across both studies was that improving the quality of requests is not only a linguistic issue but also a cultural and emotional one. In both environments, vague requests often reflected more profound anxieties, including fear of rejection or reluctance to assert authority. The LAP framework surfaced these dynamics and offered tools to address them. The LAP's value lies in making request-making observable and improvable. Participants reported that, before the workshops, they had viewed communication as something largely intuitive or unconscious. Through LAP exercises, they began to recognise that speech acts could be identified, practised, and repaired. This awareness helped participants spot missing elements in their conversations and intervene meaningfully, turning passive dialogue into coordinated action. Post-workshop interviews revealed that participants increasingly viewed the act of saying "no" or offering a counterproposal not as a rejection but as a constructive contribution to clarity

and collaboration. This helped reduce interpersonal tension and foster a culture of mutual respect.

The action case study findings, therefore, reinforce longstanding arguments that clear requests are not only essential for effective project execution but are foundational to team dynamics (Macomber and Howell, 2003). Specificity in requests reduces ambiguity, enables shared understanding, and strengthens accountability. These findings align with broader research that links clear communication to improved teamwork, trust, and project outcomes (Adu and Opawole, 2020; Manata et al., 2021; Leonard and Joubert, 2022; Yohannes and Mauritsius, 2022).

This study makes a contribution to the existing literature by focusing on temporary project teams composed of individuals from multiple organisations. In this setting, traditional sources of alignment, such as shared history, common culture, or institutional norms, are often absent. The existing literature on the LAP (Tzortzopoulos and Cooper, 2007; Vahabi, Nasirzadeh and Mills, 2022) has traditionally framed the clarity of requests as crucial for design coordination or as an isolated speech act. What these case studies add is a practical demonstration of how requests function relationally, linking assessments, trust-building, and workflow reliability in the delivery phase of construction projects. This study demonstrates that the ability to form and negotiate requests is not merely a soft skill but a strategic capability that drives project alignment and momentum. By showing that teams with no shared past and limited institutional cohesion can still build a reliable network of commitments through structured conversational practices, this study extends the practical relevance of the LAP

The application of the LAP significantly improved how teams made and responded to requests. These improvements were not only linguistic in nature; they reshaped how participants related to one another, made commitments and built shared accountability. By creating a structured space for negotiation and feedback, the LAP enabled teams to act more reliably and coordinate more effectively across organisational boundaries. In lean construction contexts, where coordination and the efficiency of flow are paramount (Macomber et al., 2005), the ability to make clear, actionable requests is a critical success factor, and the LAP offers a model for achieving it.

7.6 Cross-Case Comparison of the LAP's Role in Enhancing Reliable Commitments

This section explores how the LAP influenced the reliability of commitments within two complex construction project environments. Reliable commitments defined not merely as intentions but as explicit, negotiated, and honoured promises that are essential to coordinated action in high-stakes, interdependent project settings. In both case studies, teams initially struggled to distinguish casual agreements from binding commitments, resulting in missed deadlines, repeated breakdowns, and interpersonal tension. Following the LAP workshops, both teams demonstrated measurable and qualitative improvements in their ability to make, negotiate, and fulfil commitments. While the outcomes were similar, the processes and challenges leading to these improvements differed significantly across the two cases, revealing the importance of contextual factors such as trust, team cohesion, and organisational structure.

Before the LAP workshops, participants in both case studies reported low confidence in the commitments made by their teams. As seen in Tables 5.3 and 6.2, project meetings were often dominated by tentative language and non-committal expressions, such as "We'll try" or "This should work," which created confusion about what was promised, by whom, and by when. Pre-workshop interviews revealed that team members often conflated suggestions with promises and lacked a shared mechanism for distinguishing between intentions and firm commitments. This ambiguity frequently resulted in tasks being left incomplete, trust being eroded, and coordination becoming reactive rather than proactive. As one participant described in the pre-workshop interview, "It's hard to know if someone actually agreed to do something unless you chase them down."

The LAP workshops introduced a new framework for understanding and practising commitments. By distinguishing different types of speech acts, participants were trained to observe and structure their conversations more deliberately. The AWL became central to this shift. Both case study teams reported a growing awareness that a reliable commitment is the product of an explicit negotiation anchored by clearly defined CoS, and a mutually desired outcome. These distinctions were not theoretical exercises; they were applied directly to live project conversations during and after the workshops.

Survey data from both teams confirmed the improvement. As shown in Table 7.4, Case Study One saw a 1.54-point increase in commitment reliability, while Case Study Two experienced an even more significant 1.85-point improvement.

Table 7.4: Cross-case analysis of survey results on reliability of commitments

Action Case Study	Pre-Workshop Survey Results	Post Workshop Survey Results	Pre and Post-Workshop Survey Change
Action Case Study One	2.44	4.11	+1.54
Action Case Study Two	2.65	4.21	+1.85

Despite these shared outcomes, the trajectories diverged. In Case Study One, the team operated in a relatively cohesive and stable environment, characterised by stronger pre-existing interpersonal relationships. This context enabled a faster and more consistent adoption of LAP principles. Workshop observations and post-workshop interviews revealed that team members quickly integrated LAP language into their daily meetings, developed standard templates for documenting commitments, and regularly referred to the CoS when reviewing project deliverables. One participant noted, "We started managing outcomes, not activities. It changed how we run meetings."

In contrast, Case Study Two presented a more fragmented team composed of contract employees and permanent staff from multiple firms. Initial resistance to the LAP was higher due to lower trust and unclear roles. However, once participants began integrating the AWL and the speech act distinctions into their coordination practices, the improvements were equally significant.

Participants reported that having a shared vocabulary and structured negotiation tools enabled them to clarify expectations in ways they hadn't previously thought possible. This was especially impactful during coordination meetings where prior misalignment had caused repeated rework. As noted in Table 6.8, the reliability of commitments in this setting improved even amid ongoing organisational instability.

A key breakthrough in both cases was the cultural shift surrounding the act of declining a request, which led to more robust negotiations. Before the workshops, participants routinely

accepted requests they knew they could not fulfil, often out of fear of conflict or to appear agreeable. The LAP reframed "no" as a legitimate and responsible response when presented with a counteroffer or clarification. This reframing elevated team accountability and made commitments more trustworthy, reducing the need for micromanagement and repeated clarification. Another insight was the recognition that failed promises often originated earlier in the conversation than previously assumed. Using the AWL, participants were able to trace coordination breakdowns not to the execution phase but to incomplete negotiations, ambiguous requests, or misaligned expectations at the outset. Workshop exercises provided participants with the tools to identify these breakdowns and initiate timely repair conversations.

Reliable commitments are foundational to project success (Macomber et al., 2005). They provide the predictability that allows work to be sequenced, coordinated, and measured. Yet, in many project environments, especially those involving temporary teams spanning multiple organisations, promises are frequently vague, conditional, or untracked. This study confirms that reliable promising is not merely a behavioural issue but a linguistic and cultural one, and that it can be addressed systematically through the LAP. When project teams understand a promise as a distinct speech act requiring a clear request, negotiated CoS, and a performer's agreement, they gain the ability to evaluate and manage commitments with greater rigour (Flores, 2013). Both case studies showed that once these distinctions were internalised, teams became more proactive in managing commitments and more transparent in renegotiating them when conditions changed.

Participants reported that seeing promises as part of a structured conversational loop helped them anticipate and intercept potential breakdowns. The AWL provided them with a new lens to interpret past failures not as incompetence or bad faith, but as incomplete conversations, particularly in the "negotiate" quadrant, where quick, vague "yes" responses had previously undermined follow-through. As one participant reflected, "A fast yes became a red flag. Now we listen for the negotiation."

This shift in mindset also contributed to the formation of stronger networks of trust and accountability. When commitments were consistently fulfilled, participants felt more confident relying on their teammates. When breakdowns did occur, they were addressed earlier and with

less defensiveness. In both cases, the reliability domain of trust, which had been notably weak before the intervention (see Tables 5.4 and 6.3), was substantially strengthened post-workshop, contributing to smoother workflows and reduced coordination overhead.

By applying the LAP beyond individual tools or roles and focusing on the broader relational structure of the project team, this study contributes a new understanding of how conversational integrity can lead to more reliable promises. In particular, it shows that temporary teams, even those composed of stakeholders from competing or contractually misaligned organisations, can build a shared culture of accountability through the language of commitments. In environments where interpersonal familiarity is limited and project timelines are compressed, this capacity to create reliable commitments through dialogue is essential to producing better communication within teams.

What makes this study distinctive from the broader literature on promise management and lean construction is its focus on temporary, multi-organisational project teams rather than stable or co-located internal organisational teams. Previous research has examined the promise of reliability within the context of the LPS (Retamal et al., 2021; Salazar, Arroyo, and Alarcón, 2020), often limiting the application of the LAP to a specific tool or planning process. This study extends the inquiry by demonstrating that LAP can strengthen team-wide promise management even in volatile, multi-organisational environments where members lack shared history and operate under divergent incentives. This significantly expands LAP's relevance for integrated delivery models, joint ventures, and other forms of temporary teaming that define much of today's complex project landscape.

7.7 Cross-Case Comparison on the Importance of Moods in the LAP

This section explores the role of moods in shaping the dynamics of communication, trust, and coordination in project teams, as understood through the LAP. Unlike traditional views that treat mood as a peripheral emotional state, the LAP frames moods as a background condition that determines what kinds of conversations, commitments, and possibilities are available to a team. In both action case studies, the workshops revealed that constraining moods were not only symptoms of dysfunction but also active barriers to collaboration and performance. As temporary

teams composed of individuals from multiple organisations with a limited shared history and divergent priorities, the role of mood in enabling or inhibiting team function became especially pronounced.

Before the LAP intervention, both project teams were operating within restrictive mood environments, though the specific character and intensity of those moods differed. In Action Case Study One, the prevailing moods were resignation and defensiveness. As pre-workshop interviews revealed, this was primarily driven by frustration over design constraints and perceived micromanagement from the client. Participants reported that their contributions often felt dismissed or undervalued, fostering a mood in which team members stayed within the safety of their roles rather than taking the initiative. Conversations became guarded, marked by hesitation and a reluctance to challenge assumptions.

In contrast, Action Case Study Two displayed a more fragmented and volatile emotional landscape. Here, moods of mistrust, anxiety, and resentment dominated the project environment. The presence of multiple organisations, frequent personnel turnover, and unclear leadership contributed to a breakdown in psychological safety. In early workshop interactions, the researcher observed participants retreating from key conversations or clinging rigidly to firm-specific positions, often disengaging from broader project concerns. Pre-workshop interviews confirmed this, with one participant noting, "It feels like we're all pulling in different directions and there's no shared mood, just tension."

The LAP workshops in both cases directly addressed the influence of mood on communication and team effectiveness. Through reflective activities and facilitated dialogue, participants explored how moods shape how individuals listen, interpret meaning, and make or withhold promises. Core distinctions introduced during the workshops, such as the difference between expansive moods (e.g., ambition, openness, curiosity) and restrictive moods (e.g., resentment, resignation, fear), enabled teams to develop a language for identifying and addressing mood-based breakdowns.

In Case Study One, the relative stability of team membership and pre-existing cohesion allowed participants to adopt these insights quickly. Mood-based interventions, such as starting meetings with mood check-ins and using LAP language to surface emotional undercurrents, contributed to an observable shift in team moods, as reported in post-workshop interviews. The post-workshop interviews also confirmed that this shift had unlocked previously stifled collaboration, particularly in areas such as budget negotiations and design planning. A participant noted, "Just naming that we were in a mood of resignation gave us a way to move out of it. That alone changed the tone of our meetings."

In Case Study Two, however, mood transformation was slower and more challenging to achieve. The team's baseline fragmentation meant that expansive moods could not take hold until deeper relational repair had begun. Still, breakthroughs did occur. Participants described key moments, especially between finance and contractor representatives, where moods shifted following honest, difficult conversations about past breakdowns. These conversations, supported by better conversations, began to rebuild a foundation of shared purpose, even in a high-turnover, multi-stakeholder environment. As one team member stated, "I didn't realise how much my own mood was shutting down the team. The workshop gave me a way to name that and work through it."

Despite the different timelines, both cases revealed that addressing moods was essential for unlocking the power of better conversations and more reliable commitments. Communication breakdowns, unreliable commitments, and trust deficits could not be resolved at the structural level alone. Moods shaped what was possible to say, hear, and act upon. In a team environment where institutional cohesion was lacking due to the temporary nature of the project team and the inherently temporary nature of relationships, mood management emerged as a critical leadership function.

This distinction is significant given the unique composition of both project teams. These were not long-established, internally aligned groups but temporary, cross-organisational teams brought together for specific project goals. In such contexts, there is often no time for expansive moods to evolve organically. This study demonstrates that mood can be addressed intentionally and

explicitly, creating conditions for more effective use of speech acts, more reliable commitments, and more coordinated project execution.

Participants in both cases echoed a key finding from interviews that moods are not a soft skill or an emotional afterthought but a foundational layer of team performance. As observed in the workshops, once participants could name their moods and understand their effects, they were able to shift conversations from reactive and siloed to open and collaborative. The ability to observe and shift mood was especially critical in high-pressure, high-uncertainty moments in the workshops, where previous breakdowns had left people in restrictive moods. By addressing those moods, new possibilities emerged.

Research in psychology and communication affirms the LAP's view that mood directly influences language processing and behaviour. Individuals in positive moods tend to exhibit more flexible and creative communication, whereas negative moods often restrict listening and lead to defensive or withdrawn responses (Verhees et al., 2015; Kissler & Bromberek-Dyzman, 2021). In collaborative environments, such as construction projects, mood significantly influences how team members interact with one another, affecting whether they engage in coordination and collaboration or protection and concealment. Moods also affect the clarity and reception of requests, a central focus of the LAP framework. Positive moods broaden conversational possibilities and foster proactive engagement, while negative moods constrict focus and inhibit mutual understanding (Pfaff, 2009). Everyday language becomes charged and interpreted differently depending on the emotional context (Sun et al., 2020), and in project settings, this can significantly impact the quality of coordination.

During the workshops, the researcher observed mood shifts that directly correlated with improvements in team engagement. At the start of the workshop, 72% of participants reported being in a mood of resignation, expressing doubt about their ability to change the project culture. By the conclusion, 100% of participants reported being in either a mood of ambition or hope. While the researcher could not observe the long-term sustainability of this change, the immediate shift suggests that targeted mood work can spark significant affective transformation, even in brief interventions. This finding reinforces a key LAP theory from the existing literature, which

posits that moods are not static states but dynamic forces that shape the social space of projects. When project teams, especially those assembled from disparate organisations, are given tools to recognise and shift their moods, they gain access to more expansive, solution-focused forms of dialogue. Without this shift, even the best communication frameworks risk becoming superficial or performative.

This study adds to the existing literature by showing that mood can be explicitly managed in temporary teams from different organisations, not just in longstanding, internally stable groups. It provides a practical demonstration of how LAP-based mood work can lay the groundwork for trust, collaboration, and high-performance behaviour in contexts marked by volatility and complexity.

7.8 Impact of the LAP on Advancing the Lean Construction Agenda

The LAP can significantly advance lean construction by enhancing communication, improving commitment management, and fostering collaboration among project stakeholders. Projects that sought to promote lean construction were chosen, as opposed to construction projects that did not, because lean construction projects are built on a foundation of collaboration, respect for people, and a network of commitments that aligns with the core principles of the LAP (Howell, 1999).

7.8.1 How Effective and Quality Communication Can Enhance Lean Construction

An increase in the overall quality of communication can significantly advance the lean construction methodology by enhancing collaboration, reducing waste, and improving project efficiency. Lean construction relies on coordinated efforts and the sharing of clear, timely information to streamline workflows and eliminate non-value-adding activities (Retamal et al., 2021). The lean construction literature has also recognised that a lack of shared understanding, whether about project goals, task sequencing, or conditions of satisfaction, can significantly constrain efficient project workflow, leading to coordination waste, rework, and missed opportunities for collaborative problem-solving. In environments where multiple organisations must integrate their efforts, even minor misalignments in interpretation or intent can ripple

through the production system, reducing plan reliability and undermining lean's emphasis on continuous flow and value generation (Ebbs and Pasquire, 2018).

The LAP enhances communication clarity by providing teams with a shared vocabulary and structured conversational framework, enabling them to articulate requests, promises, and expectations with precision. This clarity is essential for lean construction practices, where the reliability of commitments, the reduction of coordination waste, and the alignment of diverse stakeholders all depend on unambiguous communication that translates directly into coordinated action.

Much of the existing research on lean construction has concentrated on the deployment of specific tools, frameworks, or methodologies, often without fully addressing the broader organisational and behavioural conditions, such as reliable commitments that enable these approaches to work effectively in practice. For example, Sarhan et al. (2020) outline various frameworks for implementing lean construction strategies, providing valuable insight into process design and strategic integration. Yet, they do not examine how the consistent use of clear and reliable commitments could strengthen the application of those frameworks on the ground. This omission narrows the understanding of how the human factors of communication and commitment dynamics intersect with lean practices to influence project performance. In practice, even the most sophisticated frameworks depend on the day-to-day reliability of agreements between team members to maintain workflow stability and meet project milestones.

Similarly, while the literature frequently identifies barriers to implementing lean construction, such as lack of awareness, insufficient training, and limited management commitment (Ahmed and Sobuz, 2020), there is far less discussion of how these barriers degrade the quality of communication within teams and, in turn, undermine the reliability of their commitments. In reality, these barriers are not isolated challenges; they directly influence how effectively teams exchange information, align on priorities, and coordinate their work. For instance, when management commitment is lacking, teams may not receive the support or reinforcement needed to maintain disciplined communication practices, resulting in vague requests, unverified promises, and a higher likelihood of missed deliverables. Such conditions can weaken trust and

cohesion, making it harder to sustain lean practices that depend on high levels of coordination and mutual accountability.

Existing research on the application of the LAP within lean construction has also tended to focus on its integration with the LPS rather than exploring its potential to transform communication across the wider project team. While the LPS is a crucial lean tool for production planning, framing the LAP's value solely within this context risks underestimating its broader applicability to multidisciplinary project environments. Salazar, Arroyo and Alarcón (2020) demonstrate that, when applied within the LPS, LAP principles such as the use of clear and explicit requests improve the reliability of team members' promises. This is a significant finding because in lean construction, where precise coordination and timing are critical, clarity in communication ensures that all team members understand their responsibilities and the expectations attached to their work. That shared understanding reduces the likelihood of misunderstandings, scope misalignments, and process inefficiencies, all of which contribute to waste. Extending these same LAP principles beyond the confines of LPS activities could offer similar benefits in other areas of project delivery, strengthening collaboration, enhancing accountability, and supporting the overall lean objective of maximising value while minimising waste.

The LAP contributes to promoting a culture of collaboration and trust among project stakeholders. Effective coordination in construction projects involves regulating exchanges and governing collective action (Isatto, Azambuja, and Formoso, 2015). The LAP encourages open dialogue and transparency, which is essential for building trust among team members. As demonstrated in this study, where collaboration was crucial to success, fostering trust through effective communication can lead to more cohesive teams, thereby preparing the ground for the effective deployment of lean construction tools and ultimately yielding better project outcomes. Therefore, the application of the LAP should extend beyond supporting the deployment of specific lean construction tools, as its influence on communication, trust, and coordination benefits the broader project team and strengthens overall project delivery.

High-quality LAP-powered communication fosters transparency and accountability, ensuring all project participants clearly understand goals, timelines, and responsibilities. This transparency

helps reduce the need for repetitive clarification and follow-ups, minimising delays and rework (Manata, et al., 2021). Enhanced communication directly supports lean's objective of reducing process waste (Maraqa, Sacks and Spatari, 2023) by enabling team members to convey requests, commitments, and updates precisely and confidently. In the case study data, the researcher observed a clear improvement in the overall quality of communication, and participants reported that this improvement significantly facilitated the coordination of work. Furthermore, quality communication fosters open dialogue, which is crucial for identifying potential issues early, promoting continuous improvement, and adapting to challenges in real-time.

This study demonstrates that the LAP has significant potential to enhance communication within construction project teams, a factor crucial for the success of the lean construction methodology. By promoting clear, direct communication and dependable commitments, the LAP enhances lean's emphasis on collaboration, waste reduction, and efficiency.

7.8.2 How Trust Can Enhance Lean Construction

Trust is foundational to lean construction, as it reduces silos and adversarial relationships, enabling teams to work cohesively toward shared goals (Manu et al., 2015). In a high-trust environment, team members feel more accountable to one another, which leads to more reliable commitments and fewer delays, critical components of lean's focus on predictable, streamlined workflows (Valente et al., 2020). The trust built through the LAP also supports the open and honest communication that lean relies on for tools like the LPS. With the LAP fostering trust, teams are more willing to bring up issues early, reducing rework and enhancing resource allocation (Salazar, Arroyo and Alarcón, 2020).

Much of the existing research concentrates on the relationship between trust and specific lean practices or tools rather than examining trust as a holistic construct that influences various dimensions of project performance. While trust is acknowledged as essential for improving project outcomes, there is a lack of research detailing how managers actively create mutual trust within design and construction teams (Uusitalo et al., 2021). This narrow focus limits the understanding of how trust interacts with other lean principles and practices, potentially overlooking the complex dynamics that contribute to successful project execution.

There is also a tendency to focus on the barriers to trust rather than on strategies for building and maintaining it within lean construction frameworks. While some studies focus on the theoretical aspects of trust in collaboration, they do not provide actionable insights on fostering trust among stakeholders in lean projects (He, Tim and Selçuk, 2022). This lack of practical guidance can hinder the effective implementation of lean practices, as trust is a critical enabler of collaboration and communication.

This study demonstrated the importance of project teams' understanding of the trust domains. Findings from the action case studies demonstrated that when team members understand that trust is an assessment of the four critical domains of trust, which are competency, reliability, sincerity, and care (Solomon and Flores, 2001; Flores, 2020), they develop a new way of observing trust on projects. Participants shared that as they began to observe trust and establish a common language for discussing it, it became more apparent how trust could be built, repaired, and maintained as part of the team conversations. This suggests that LAP can be a practical framework for building, maintaining and repairing trust within project teams, reinforcing the lean construction goal of creating a collaborative, reliable, and highly efficient project environment.

7.8.3 How Clear Requests Can Enhance Lean Construction

The LAP, with its emphasis on making clear, explicit requests, aligns closely with and advances the goals of lean construction. Effective communication and collaboration in lean construction are critical for minimising waste, enhancing efficiency, and maintaining seamless workflows (Macomber and Howell, 2003). However, vague or ambiguous requests often undermine these goals, leading to misunderstandings, delays, and unnecessary rework (Forcada et al., 2017). The LAP contributes to addressing this issue by providing a structured approach to communication, encouraging team members to articulate their needs and expectations in a specific, actionable, and mutually understood way.

Clear requests foster accountability within project teams, allowing them to coordinate tasks precisely and ensuring that each team member knows exactly what is required and when. Effective communication is crucial for multidisciplinary teams to exchange information and

collaborate towards common goals (Eivazi Ziae et al., 2023). When team members make specific requests, they are more likely to take ownership of their tasks and responsibilities. This accountability is essential in lean construction, where each team member's contribution has a direct impact on overall project performance. Clear requests minimise the risk of errors and reduce the need for follow-up clarification, directly supporting lean's aim of reducing waste. In addition, when requests are explicit and understood, team members are better positioned to identify and eliminate non-value-adding activities, aligning their efforts with lean's focus on maximising value (Macomber, Howell and Reed, 2005).

By integrating the LAP's approach to requests, construction teams can enhance communication quality, streamline workflows, and foster a more predictable and waste-free project environment. This structured communication process thus enhances lean construction's agenda, providing a practical framework for fostering collaboration, reducing inefficiencies, and supporting continuous improvement on construction projects. There is often a lack of empirical research directly linking clear requests to improved outcomes in lean construction. While some studies, such as those by Pan and Pan (2023), advocate for rethinking lean practices, they do not explicitly address how clear communication can enhance the implementation of lean principles (Kalyan, Pratap and Singh, 2018).

Furthermore, existing research often overlooks the interplay between clear requests and other critical factors, such as team dynamics and trust. For example, Vaidyanathan et al. (2018) discuss the need for a framework for organisational lean transformation but do not delve into how clear communication can foster trust and collaboration among team members (Kalyan, Pratap and Singh, 2018). This oversight limits the understanding of how clear requests can contribute to a more cohesive and effective lean construction environment. The action case study findings demonstrate that the LAP, with its focus on making clear, structured requests, has a measurable impact on advancing the lean construction agenda.

This study has provided concrete evidence of how explicit requests improve communication, task coordination, and accountability by applying LAP principles within real project teams and tracking their effects over time. Before the LAP intervention, the case study teams frequently

struggled with ambiguous communication, leading to misunderstandings, delays, and inefficiencies, contradicting lean's streamlined processes and waste reduction goals. The post-workshop results showed a marked improvement in team efficiency. Clearer requests reduced the need for repeated clarifications and minimised rework, which directly aligned with lean construction's objective of reducing non-value-adding activities. Teams became more predictable in their workflows and more reliable in their commitments as each member gained a better understanding of what was expected of them and when. The findings underscore that the LAP's emphasis on clear requests fosters accountability and supports continuous improvement, which is central to lean practices. By implementing the LAP's structured communication in a real-world context, the case studies provided practical, observable evidence that clear requests can be a powerful tool for achieving lean construction's aims of collaboration, efficiency, and waste minimisation.

7.8.4 How More Reliable Commitments Can Enhance Lean Construction

The LAP can play a pivotal role in advancing lean construction's goal of increased collaboration by embedding reliable commitments at the heart of project team interactions. In lean environments, collaboration is critical for reducing waste, maintaining efficient workflows, and achieving agreed project objectives (Retamal et al., 2021). Yet such collaboration depends not only on goodwill but on the consistent making and fulfilling of clear, dependable commitments. By reframing communication as a coordinated process for action, the LAP strengthens this foundation of teamwork by using speech acts such as promises and requests to translate conversations into concrete, actionable commitments (Macomber and Howell, 2003).

Much of the existing research in lean construction emphasises specific tools or methodologies, such as the LPS, without thoroughly examining the underlying communication dynamics that enable reliable commitments to take root. While studies have explored the relationship between lean production and quality commitments in the context of these tools, relatively little attention has been given to how reliable commitments influence the overall effectiveness of lean construction project teams (Lee and Peccei, 2007). This tool-focused perspective risks overlooking the central role of communication in both establishing and sustaining such commitments. Moreover, existing research often underplays the interpersonal dynamics that

shape commitment reliability. Although the conditional nature of CbM practices is acknowledged, there is limited discussion of how trust and collaboration among team members influence the making and keeping of commitments (Angelis et al., 2011). Addressing this gap is essential for understanding how social and relational factors interact with lean practices to sustain efficient, coordinated project delivery.

In a traditional construction environment, misunderstandings and vague agreements can lead to breakdowns in coordination, as team members may interpret commitments differently or fail to follow through. The LAP addresses this by guiding team members to make clear, well-defined commitments and ensuring that each promise is understood by all parties involved. This clarity in communication reduces ambiguity, enabling teams to work together with a shared understanding of objectives and expectations, which is foundational for effective collaboration (Viana, Formoso and Isatto, 2017).

As team members consistently fulfil their commitments under the LAP framework, trust is built across the team, reinforcing the collaborative foundation of the lean construction agenda (Salazar, Arroyo and Alarcón, 2020). When each team member knows they can depend on others to deliver as promised, silos and adversarial relationships give way to a more cohesive, integrated team culture. This commitment to reliability enables project teams to coordinate tasks and workflows more efficiently, thereby minimising delays and interruptions that would otherwise disrupt lean's streamlined approach.

Reliable commitments enhance accountability among team members, reinforcing the view that projects are a network of commitments (Macomber, Howell and Reed, 2005). Building a high-commitment culture is conditional on effective management practices that promote clear expectations and responsibilities (Angelis et al., 2011). When team members make reliable commitments, they are more likely to take ownership of tasks, leading to improved performance and project outcomes.

Reliable commitments facilitate better collaboration among project stakeholders. Strategic decisions, including enhanced teamwork and a mutually agreed-upon implementation

methodology, are crucial for successfully adopting lean construction principles (Moyo and Chigara, 2023). When team members can rely on each other's commitments, it fosters a collaborative environment where information flows freely and tasks are coordinated effectively. This collaboration is vital for minimising waste and maximising value in lean projects. Additionally, reliable commitments help reduce misunderstandings and errors, which are common sources of waste in construction projects. Improving planning reliability by focusing on reliable commitments can improve project performance (González et al., 2010). Clear and dependable commitments minimise the risk of miscommunication, ensuring all team members are aligned on project goals and expectations. This alignment is essential for lean construction, which focuses on streamlining processes and eliminating non-value-adding activities.

Reliable commitments can enhance the overall project culture, promoting a sense of trust and mutual respect among team members. Contractor commitment and cooperative orientation significantly improve labour productivity (Nguyen and Watanabe, 2017). When team members trust their colleagues to fulfil their commitments, it creates a positive work environment conducive to collaboration and innovation, further supporting lean principles.

This study demonstrates that by making commitments more reliable and transparent, the LAP helps create a project environment where collaboration is possible and sustainable. Team members in the case studies reported feeling better equipped after the workshops to align their efforts more reliably with those of other team members, knowing that each commitment is meaningful and will be honoured. In this way, the LAP is a foundational tool for enhancing lean construction's collaborative framework, ensuring that project teams can work harmoniously toward shared goals, ultimately leading to more efficient and predictable project outcomes.

7.8.5 Broader Implications for Lean Construction Practice

The LAP aligns with, and strengthens, the goals of lean construction. Lean tools such as the LPS and TVD depend on high trust and continuous coordination, which are supported by LAP practices (Salem et al., 2006; Howell and Macomber, 2006). As shown in Chapter 3 (Table 3.3 and 3.4), The LAP enhances lean practices by improving how teams make and manage commitments.

Participants in both case studies reported that the LAP helped improve real-time planning, reduced coordination waste, and increased alignment across firms, which is especially important in fast-track project environments (Xie et al., 2010; Peña-Mora et al., 2000; AL Mousli and El-Sayegh, 2016; Ajayi et al., 2017). Explicit attention to speech acts and CoS reduced rework and misaligned expectations, enhancing overall project delivery outcomes. The LAP, when embedded in the daily practices of project teams, enables a shift from reactive, ambiguous communication to proactive, collaborative coordination.

While the cultural change initiated by the workshops varied in intensity and speed across contexts, both case studies affirm the potential of the LAP to foster trust, clarify expectations, and build a foundation for reliable collaboration. The LAP is not merely a set of tools; it is a model for changing how we coordinate action, build relationships, and produce results on complex projects (Flores, 2013).

By integrating LAP into leadership practices, meeting structures, and project governance, teams can move toward a commitment-based culture, and one where communication serves as the infrastructure that underpins project success.

7.9 LAP as a Transformative Communication Framework

Communication has long been recognised as a critical factor in project success, particularly in complex environments where coordination across disciplines and organisations is essential (Cross, 2023; Muneer et al., 2022). Studies show a direct correlation between effective communication and project performance, stakeholder satisfaction, and trust (Malik et al., 2023; Kloppenborg, Tesch, and Manolis, 2014; Iqbal et al., 2017). Conversely, poor communication increases the likelihood of conflict, inefficiency, and project failure (Aubert, Hooper, and Schepel, 2013; Malik et al., 2023). While recent discourse in construction has focused on technological tools like BIM or Slack to improve communication (Liu, Rongrong and Luo, 2023), this study presents a contrasting yet complementary view: the actual impact comes from how communication is enacted, not just where it occurs. The LAP introduces a human-centred model that emphasises speech acts, listening, and trust management components that digital tools

alone cannot replicate. Reliance on digital tools can increase cognitive load, inhibit nonverbal communication, and reduce immediate feedback, all of which degrade communication quality in high-stakes settings such as healthcare and construction (Jones et al., 2022; Ghani et al., 2022; Sturm et al., 2022; Swart, Bond-Barnard, and Chugh, 2022).

The contribution of this study lies in its demonstration that communication quality is not only a behavioural concern but also a linguistic and cultural one. By adopting the LAP, project teams gain access to a set of distinctions that allow them to intervene meaningfully in their conversational environment.

Importantly, participants reported several novel and practical insights:

- Observability of language: Participants learned to locate breakdowns in conversations and intervene by asking clarifying questions or negotiating new conditions.
- Distinction between assessments and assertions: This reduced defensiveness and enabled richer conversations around feedback, uncertainty, and innovation.
- Trust is domain-specific: Teams developed nuanced strategies for trust repair based on observed breakdowns in sincerity, competence, or reliability.
- Mood as background for communication: Recognising the role of moods in shaping listening expanded participants' capacity to manage tension and foster psychological safety.

These insights represent a new contribution to the field. Prior literature has addressed communication as a process or a risk factor, but this study repositions communication as a deliberate, trainable practice with deep theoretical roots in speech act theory. By embedding the LAP into team culture, projects can transition from compliance-driven interaction to a mode of purposeful, accountable, and trust-centred collaboration.

7.10 Summary

The action research case studies effectively applied the LAP theory to construction teams, providing concrete insights into its real-world impact on commitment reliability and lean construction goals. By combining case studies with action research, the research went beyond theoretical analysis, allowing it to observe firsthand how the LAP principles transformed team

dynamics and collaboration. Through the LAP workshops and pre- and post-workshop assessments, this research documented how structured, explicit commitments improved reliability within teams and increased trust among team members.

This research revealed that the LAP's emphasis on reliable promises and clear requests directly strengthened commitment reliability, a cornerstone of lean construction's collaborative and efficiency-focused objectives. Unlike traditional studies, which often rely on hypothetical scenarios or self-reported data, this research actively engaged teams with the LAP in real-time, demonstrating how reliable commitments facilitated higher team cohesion. The findings underscore that translating the LAP theory into practice can provide valuable, actionable insights that can be powerful for achieving lean construction goals in practical settings.

This research revealed the importance of the LAP's impact on project communication. The action research case studies demonstrated how influential the LAP is in making clear requests, making more reliable commitments, and improving the overall communication flow on lean construction projects. The existing literature on communication and lean construction does not emphasise this aspect enough and has historically focused on applying the LAP to specific lean tools.

The next chapter will discuss the development and evaluation of a framework for using the LAP to enhance communication in project teams, which draws on the theoretical and empirical findings from this study.

Chapter 8: Framework Development and Evaluation

8.1 Introduction

This chapter presents the framework for enhancing communication in construction project teams through the application of the LAP. The framework has been developed through an integrated process that combines the theoretical foundations established in Chapters Two and Three with the empirical evidence generated from the two action case studies described in Chapters Five and Six, and the cross-case analysis in Chapter Seven. Its design responds directly to the persistent communication challenges identified in the literature and observed in practice, including low trust, unclear requests, unreliable promises, and ineffective coordination. It builds on the research finding that project teams benefit most when the LAP is applied as a comprehensive, integrated approach rather than as isolated tools or techniques.

The chapter begins by explaining how the framework was shaped. Then it describes each key component of the framework in detail, showing how it is connected to theory, observed challenges, and tested interventions. An implementation guide is included to demonstrate how the framework can be applied in real project environments.

This chapter directly addresses the research objectives concerned with reviewing the LAP and its influence on communication in project teams, evaluating its relationship with trust and reliable promising in project environments, assessing its potential contribution to advancing the lean construction agenda, and empirically investigating how it can be deployed to improve the coordination of commitments in construction projects. This chapter contributes to research objective five of the study.

8.2 Development of the Framework

The framework for improving communication in construction project teams using the LAP was developed through an integrated process that combined conceptual grounding with empirical investigation. Drawing heavily on the LAP, the framework was designed to address theoretical gaps in existing communication models and practical issues observed in the case studies. This is underpinned by evidence from the study that introducing project teams to the use of the LAP

through training workshops can serve as a practical framework for them to understand and improve team communication. The various components of the framework are discussed further.

8.2.1 Pre-existing Moods as an Antecedent

Pre-existing moods are included in the framework as an antecedent because they influence every aspect of communication and coordination in project teams. As discussed in the literature review on moods in Chapter Two, moods are enduring background states shaped by our history and assessments of what is possible in the future. These moods are not created solely within the project; they are often brought in from outside experiences and environments, yet they colour the way we listen, interpret, and respond in every project interaction.

The case study findings illustrated this clearly. In both projects, participants often entered meetings with moods formed long before the conversation began—whether resignation over repeated budget challenges in Case Study One or scepticism arising from prior mistrust in Case Study Two. These pre-existing moods shaped how requests, promises, and even neutral statements were received, often filtering them through doubt, defensiveness, or disengagement.

By recognising pre-existing moods as a starting condition in the framework, the connection between the theoretical foundations of LAP and its practical application becomes clear. Without awareness of these underlying emotional contexts, even well-structured speech acts and clear commitments may fail to achieve their intended effect. The literature and findings together underscore that mood awareness is not an optional skill but a prerequisite for the generative conversations required to build trust and coordinate reliable action in lean construction projects.

8.2.2 New Conceptualisation of the LAP

The first and most foundational component of this framework is the reconceptualisation of the LAP, which provides both the philosophical grounding and operational logic upon which the remainder of the framework is constructed. Rather than viewing communication as the passive transfer of information, the LAP positions language as a generative and performative act that enables individuals to coordinate action, form commitments, and cultivate trust. This reframing

offers a more powerful lens for diagnosing and improving the communicative patterns that underpin collaboration in complex project environments.

This conceptual shift builds directly on the theoretical exploration in Chapters Two and Three, where the LAP is presented as a departure from traditional sender-receiver models of communication. Instead, language is understood as the medium through which action is generated and organisational outcomes are shaped. Within this framework, core elements such as speech acts, CoS, listening, moods, and the domains of trust (see Sections 2.4, 2.5, and 2.9) are treated not as standalone tools, but as interrelated mechanisms that collectively define how effective coordination is either enabled or obstructed. It is this expanded, systemic view of the LAP that forms the conceptual backbone of the framework and justifies its integration into construction project teams seeking to improve performance through more intentional communication practices.

Complementing this theoretical base, the empirical findings from the case studies provided critical insights into the communication deficiencies within construction teams. These included unclear requests, unreliable promises, failure to recognise when negotiations were incomplete, and a general lack of awareness of team mood and emotional tone. These empirical observations justified the incorporation of additional framework elements aimed at building awareness and skills, such as mood recognition, active listening, and identifying historical biases that can influence perception and dialogue. The development process was closely tied to implementing training workshops with real project teams. These workshops served as both a method of intervention and an experimental setting where components of the framework could be tested, evaluated, and refined. Practical feedback from these sessions informed the framework's evolution, particularly the structuring of training content around topics such as trust, listening, moods, and speech acts. As these workshops progressed, it became increasingly clear which elements were effective in promoting reflection, communication, and transformation among team members and which aspects needed further development.

What emerged from this process was a structured framework, represented in Figure 8.1, that captures a progression from conceptual understanding to practical transformation. The

framework begins with a new conceptualisation of the LAP, which establishes the theoretical basis for action-oriented communication. This framework is a shift from Figure 2.2 in that it represents the new concept that all of the elements present in Figure 2.2 need to be present, and that for communication to be enhanced by the LAP, you cannot just implement pieces of the LAP, but rather, all the elements have to be present. The framework then moves into the phase of embedding project teams in the LAP through training, emphasising the role of structured learning interventions. This leads to observable transformations in team behaviour and communication patterns, ultimately resulting in measurable improvements in areas such as trust, clarity of requests, reliability of promises, and the quality of communication.

The framework was, therefore, not created in abstraction, but through a dynamic process that engaged both theory and practice. It reflects the interplay between structured academic analysis and on-the-ground realities, offering a comprehensive and implementable model for enhancing communication in construction project environments.

The development of this framework was directly shaped by the observed limitations of conventional communication practices in construction project teams and the practical insights generated through the research process. Existing models often treat communication as a technical process of information exchange, failing to capture its deeper function in generating coordinated action, shaping trust, and resolving breakdowns. Through both theoretical exploration and empirical engagement, it became clear that a more integrated and performative understanding of communication was needed, one that recognises language as action and coordination, not just content transmission.

In response, the framework introduces an expanded and unified conceptualisation of the LAP, in which communication is understood as a system of practices. These include the use of speech acts to initiate and negotiate commitments, the articulation of CoS, the recognition of trust as a multi-dimensional domain, and the influence of mood and listening on team dynamics. These components did not arise from abstract theorising alone; they were tested, refined, and validated through iterative cycles of workshop delivery and participant feedback during the case studies using action research methods.

Observed challenges, including unclear requests, broken promises, and an inability to recognise when coordination had failed, highlighted the limitations of fragmentary approaches to communication improvement. Teams lacked not just the tools, but the conceptual language to make sense of their breakdowns. This insight underscored the necessity of bringing the elements of the LAP into a coherent model that could support both diagnosis and transformation of team communication behaviours. Thus, the framework evolved organically from the intersection of theory and lived project experience, offering a practical architecture through which communicative action can be understood, enacted, and improved.

These empirical insights reinforce the relevance of the LAP not as an abstract theoretical concept, but as a practical framework for improving communication in real project settings. They also validate the inclusion of this component as foundational: without a reconceptualisation of communication as action, the deeper patterns underlying project dysfunctions remain hidden or misinterpreted.

All of the issues addressed in this component, from diagnosing unclear requests and unreliable promises, to recognising the influence of mood and historical bias, are grounded in the theoretical analysis of Chapters 2 and 3 and substantiated by the empirical data in Chapters 5 and 6. Their integration into a single conceptual model enables a more comprehensive understanding of communication and provides project teams with tangible tools and insights for enhancing collaborative performance.

The new conceptualisation of the LAP is the backbone of this framework. It improves upon earlier models by combining key elements of the LAP into a single, holistic system, drawing on both the theoretical synthesis of Chapters Two and Three and the empirical findings from Chapters Five and Six. This component is therefore both conceptually robust and practically grounded, providing project teams with a foundational understanding of communication as coordinated action and laying the groundwork for the transformation and improvement processes addressed in the subsequent components of the framework.

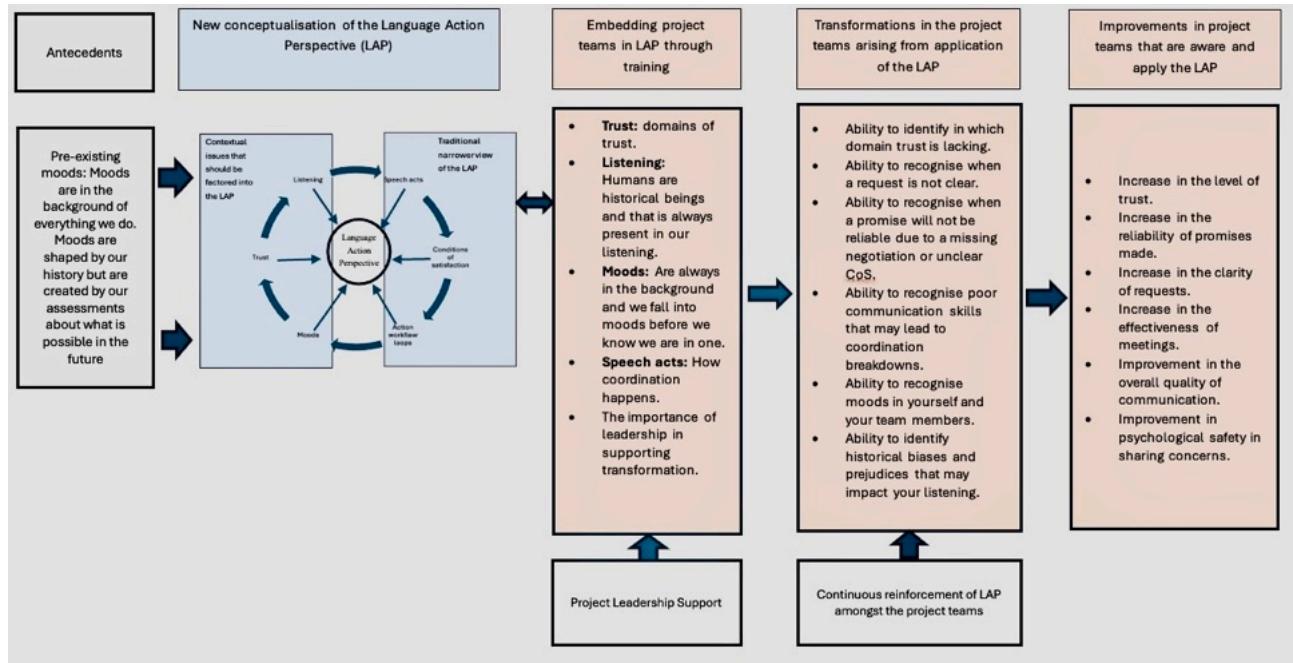


Figure 8.1: Framework for improving communication in project teams using the LAP

8.2.3 Embedding Project Teams in LAP Through Training

The second component of the framework focuses on embedding project teams in the LAP through structured training in the fundamentals of the LAP. This component is essential to the operationalisation of the framework because the mere conceptual understanding of the LAP is insufficient to bring about sustained change in communication practices. Deliberate training is required for teams to internalise and apply LAP principles in their daily project environments. This training fosters both intellectual understanding in participants and practical capability in using the skills in a workshop environment, which can then be applied in a project environment.

Including this component addresses the limitations identified in the literature review, where communication problems persist despite widespread awareness of their importance. As demonstrated in this research's theoretical and empirical dimensions, project teams often recognise that poor communication is a significant source of project inefficiency. Yet, they lack the tools, language, and structured learning opportunities to address it effectively. From a

theoretical standpoint, the existing literature reviewed established that the fragmented nature of communication training in construction has often failed to create a lasting shift in team dynamics. Most existing programmes focus narrowly on using the SAT and AWL to enhance technical communication (e.g., improving tools, process improvement, design, and document control), ignoring the more complex interpersonal and action-oriented aspects of team dialogue, such as commitment-making, mood awareness, and trust building, which are central to LAP.

The case studies in Chapters Five and Six, which present the empirical findings of this study, provide compelling evidence that teams benefit significantly from targeted LAP-based training interventions. For instance, during the action research cycles, training workshops were conducted to introduce project teams to core LAP concepts, including the domains of trust, the function of speech acts, mood and listening, and the importance of clear requests and reliable promises. These workshops revealed that when participants were given structured opportunities to reflect on and practice these concepts, they noticed and articulated previously unexamined patterns of team communication. Teams reported improved clarity in conversations, increased confidence in making and declining requests, and a greater awareness of how moods and listening dispositions shaped their interactions.

This framework component is therefore necessary not only to convey LAP principles but to embed them within the lived practices of project teams. Embedding implies more than instruction; it involves transformation through experiential learning, reflection, repetition, and coaching, which is how the workshops were structured. Without this training process, the LAP risks remaining an abstract ideal with little impact on team behaviour. By contrast, training enables participants to move from theoretical understanding to applied capability, supporting the development of specific skills such as identifying ambiguous speech acts, recognising when trust is eroding, or responding constructively to conflict rooted in negative moods.

The issues captured under this component, such as the need to understand trust domains, identify different types of speech acts, and build awareness of listening and mood, were selected because the existing literature revealed that it represents the areas where teams most commonly struggle, and where the literature showed the most significant potential for the impact of transformative

learning. These issues are grounded in theoretical insight from the literature review and empirical observation from the action case studies. They also reflect the researcher's direct engagement with teams during the action research process, which provided a first-hand view of the learning activities that resonated most strongly and had the most immediate effect on practice.

Embedding project teams in the LAP through training is a critical component of the framework because it bridges the gap between conceptual knowledge and applied practice. It ensures that the foundational ideas of the LAP are translated into real-world capability through guided learning. This component is grounded in a robust theoretical base and validated by empirical evidence, making it an indispensable part of the overall strategy for improving communication in construction project teams.

8.2.4 Transformations in the Project Teams Arising from the Application of the LAP

This third component of the framework focuses on the transformations that emerge within project teams as they begin to apply the LAP in their day-to-day practices. This stage is a vital link in the framework, marking the transition from conceptual understanding and structured training to the observable behavioural and cultural shifts that signal genuine uptake and internalisation of the LAP principles. Its role is to capture and describe the initial changes in team communication that arise when theoretical knowledge is actively applied in real project contexts.

The importance of this component lies not only in identifying what changes occur, but in recognising how those changes happen. While the conceptual basis of the LAP, as discussed in Section 8.2.2 and the structured training interventions covered in Section 8.2.3, provides the cognitive and procedural foundations, it is the experience of participating in the workshop environment that enables team members to transition from abstract theory to embodied practice. In this sense, the workshops serve as live laboratories, where teams can rehearse, experiment with, and reflect on LAP concepts in a supported, semi-structured setting. This experiential learning process is critical because the transformation the LAP encourages, such as increased awareness of trust dynamics, more precise articulation of requests and promises, and recognition

of emotional and historical influences on communication, cannot be fully achieved through theoretical instruction alone.

The workshops provided opportunities for teams to engage in dialogues that surfaced actual communication patterns and breakdowns. For example, participants practised making and evaluating speech acts, diagnosing trust issues, and reflecting on how mood and listening influenced their interpretation of others. In doing so, they not only learned about the LAP; they also learned through action by performing with the LAP, actively applying its principles to real-life scenarios drawn from their project environments. This practical engagement was essential to reinforcing the theoretical elements introduced in earlier chapters and allowed participants to discover, through trial and feedback, how LAP-based practices could shift both individual and group behaviours.

The transformations observed during and following these workshops were not superficial; they represented meaningful changes in how individuals interacted, coordinated, and understood one another. These included a growing ability to identify when a request was ambiguous, to recognise when a promise lacked proper negotiation or mutual understanding, and to intervene more confidently when coordination began to break down. Teams also demonstrated increased awareness of how their moods and listening dispositions shaped their communication, enabling a more reflective and responsive team culture.

These behavioural shifts were anticipated in the theoretical literature reviewed in Chapters Two and Three, where the LAP framework is positioned as a model capable of producing profound changes in organisational communication, but has primarily been limited to process design and improvement. However, the empirical evidence from Chapters Five and Six confirmed that such transformations only materialise when participants have the space to practice the theory through structured experiences. The workshops were deliberately designed to include reflection, group dialogue, simulated interactions, and real-time feedback, all of which helped teams move from knowing to doing.

The specific issues captured under this component, such as the ability to identify breakdowns in trust, the clarity of requests, the emotional climate of the team, and unconscious biases, are therefore included not just because they are conceptually significant, but because they emerged repeatedly during the workshop interventions as central to how the LAP is enacted in practice. They represent the early, visible signs that the LAP has begun to take root in a team's way of working, and they serve as indicators of transformation that can be used to assess progress and adjust future training or support.

This framework component reflects the transformative effects of applying LAP through guided experience. It is grounded in theory, supported by empirical research, and animated by the insights generated in live workshop environments. Without this component, the framework would not reflect the critical shift from theory to action. Including it ensures that the change process is conceptualised, experienced, embodied, and measured, making it an essential part of the overall strategy for improving communication in construction project teams.

8.2.5 Improvements in Project Teams that are Aware of and Apply the LAP

Within the framework outlined in Figure 8.1, the component improvements in project teams that are aware of and apply the LAP offer a fundamental and novel mechanism for addressing systemic issues in project environments. While communication has long been cited as a challenge in collaborative projects, this research demonstrates, theoretically and empirically, that the quality and structure of language itself are central to the production of trust, coordination, and reliable delivery. This perspective is not simply corrective; it is generative. It introduces a new approach to diagnosing and reshaping conversations that constitute effective teamwork.

This component of the framework, which focused on improving communication performance within project teams, draws directly from the empirical insights generated in Chapters Five, Six, and Seven. Across both case studies, and reinforced in the cross-case analysis, it became clear that improved project outcomes were closely associated with teams' ability to recognise and apply the fundamental elements of the LAP. Specifically, teams that began to understand and use distinctions such as speech acts, conditions of satisfaction, and domains of trust demonstrated noticeable improvements in communication clarity, coordination, and reliability.

Chapter Five identified how communication failures were frequently tied to ambiguous requests, unmet promises, and a general absence of shared understanding about what constituted a commitment. In particular, participants struggled to recognise when they were making or receiving a promise, or to clarify the conditions under which that promise would be considered complete. Similarly, Chapter Six revealed significant challenges in navigating trust and team mood; issues that directly affected the psychological safety and interpersonal reliability within the teams. These challenges were not resolved through general communication training, but began to shift only when teams were introduced to the integrated use of LAP-based distinctions.

As detailed in the cross-case analysis (Chapter Seven), the teams that engaged most deeply with these LAP distinctions, particularly through the practical language structures introduced in the workshops, began to self-diagnose communication breakdowns more accurately and address them constructively. The improvement in clarity of requests, reliability of promises, and recognition of trust dynamics was not merely anecdotal but consistent across both project environments. These findings informed the inclusion of this component in the framework as a critical output: it captures the kinds of improvements that become possible when project teams are actively applying the full suite of LAP practices in context.

The case studies in Chapters Five and Six offer the empirical grounding for this framework component. Before intervention, both project teams were experiencing significant dysfunction across five interrelated domains: trust, communication quality, clarity of requests, reliability of promises, and meeting effectiveness. These problems were not incidental; they were pervasive and persistent, mirroring the exact conditions that the LAP theory predicts will occur when communication lacks structure and intention.

In Case Study One, the team showed signs of resignation, poor cross-firm engagement, and deep mistrust over design authority and budgeting. Survey data collected before the LAP workshops showed an average trust rating of 2.56 out of 5 and a reliability of promises rating of 2.48. Interview data confirmed that requests were often unclear, and many participants avoided

difficult conversations altogether. From the LAP perspective, these issues stem directly from a lack of clear speech acts and an underdeveloped capacity to manage commitments.

Case Study Two revealed even deeper alignment with theoretical insights from LAP. With trust at 2.12 and communication quality at 2.14, the team was fractured, partly due to a fragmented owner team composed mainly of contract workers with misaligned goals. The data revealed that vague requests and broken promises had become normalised. The AWL provided participants with a new vocabulary and structure for diagnosing these failures. Through this, they began renegotiating expectations, establishing clearer commitments, and openly discussing trust as domain-specific competence, sincerity, reliability, and care, precisely as theorised in the LAP.

The shift post-intervention was not merely attitudinal but structural. Teams learned how to construct commitment-based conversations using new distinctions and insights. They practised giving and receiving assessments, formulating requests with explicit conditions of satisfaction, and using the AWL as a diagnostic tool. Participants began reframing difficult conversations not as interpersonal conflicts but as breakdowns in conversational structure that could be repaired.

This leads directly to the novel contribution of this component. While communication training is not new in project environments, this research shows that applying a philosophically and pragmatically rigorous language model, as articulated by the LAP, to construction project teams is both original and compelling. Before this work, the integration of the LAP into lean construction had mainly been unexplored, beyond theoretical speculation and the application of the LAP to enhance lean tools. The action research approach taken here, using real project environments to test, adapt, and validate these concepts, constitutes a significant step forward in the field.

Furthermore, this component shifts the discourse in project performance from one focused solely on tools and processes to one that recognises language as infrastructure. The LAP provides a model for enhancing conversations and creating the conditions under which collaborative design, trust-building, and reliable project delivery can flourish. This insight addresses gaps in lean

construction and project management literature, which have historically struggled to provide scalable methods for building high-functioning team cultures.

This component is indispensable because it reveals a hidden but foundational layer of project work: the linguistic acts through which work is coordinated and trust is built. The case studies demonstrate that once teams are trained to recognise and operate within this layer, they can self-correct, self-coordinate, and self-govern more effectively. Theoretically grounded, empirically validated, and practically applicable, this insight represents a significant and original contribution to the body of knowledge on collaborative delivery and lean construction. It invites future research to continue developing language-based frameworks for organisational performance and offers immediate implications for how we train, lead, and structure project teams.

8.2.6 Project Leadership Support

Strong leaders who have an understanding or curiosity about the LAP can provide a cultural influence on the importance of the LAP in team communication and dynamics. Strong leadership support is crucial to the successful implementation of any initiative. When project leaders visibly champion the workshop by introducing it, attending sessions, or actively reinforcing its relevance, it significantly increases engagement and commitment. Leaders set the tone that the training is not optional or peripheral but is central to project success.

The importance of leadership presence and advocacy was reinforced in the cross-case analysis (Section 7.2.2), where differences in leadership engagement shaped the depth of team participation and the sustained application of LAP practices. In the case where leaders were actively involved, participants demonstrated higher levels of openness, accountability, and follow-through on communication improvements. When project leaders actively participate in the training, they signal that communication is not a peripheral concern but a core part of project delivery and team performance. Their presence helps to legitimise the process, encouraging participants to take the sessions seriously and engage more openly.

Leadership involvement also fosters trust and psychological safety. When leaders join discussions, reflect on their communication practices, and show vulnerability, it encourages team members to do the same. This shared learning experience strengthens relationships across the team and helps to break down hierarchical barriers that can inhibit honest dialogue.

Leaders who are present in the workshops are better equipped to reinforce LAP concepts in day-to-day project routines. They can model improved practices in meetings, reference key ideas in coordination sessions, and support team members as they experiment with new behaviours. Project leadership should encourage participants to bring real, current project issues into the workshop. This permission empowers participants to use the training as a tool for problem-solving, not just learning, which reinforces its relevance and immediate value.

8.2.7 Continuous Reinforcement of LAP Amongst the Project Teams

Teams need to embody the practices of the LAP in their everyday work. This means that the adoption of LAP cannot be treated as a one-off training event, but must be continually reinforced through practice, reflection, and cultural reinforcement. Teams must unlearn their old ways of working, often shaped by reactive communication habits and vague commitments and instead learn new behavioural patterns grounded in the distinctions introduced during the workshops. These include making and managing requests, recognising conditions of satisfaction, attending to moods, and understanding trust as a domain of action.

Findings from Chapter Seven, and specifically Section 7.2, clearly illustrate that teams that made progress in transforming their communication were those who sustained the use of the LAP language and practices beyond the workshop setting. In contrast, when LAP concepts were not actively reinforced, teams tended to revert to previous patterns, resorting to ambiguous language, unacknowledged breakdowns, and missed opportunities to renegotiate or clarify commitments. These patterns suggest that without a mechanism for repetition and reinforcement, the uptake of the LAP tends to be shallow or short-lived.

Sustained transformation, therefore, depends not only on initial training but on the team's willingness and ability to integrate these practices into their ongoing project rituals, such as

planning meetings, coordination sessions, and issue resolution discussions. This requires leadership reinforcement, as emphasised in Section 7.2.2, where the influence of project leaders in normalising LAP practices was shown to be a key factor in continued adoption. Continuous reinforcement allows teams to internalise the LAP as a way of working, rather than a tool they occasionally use. When embedded successfully, LAP practices become part of how the team listens, plans, and builds trust, ultimately shaping a more coordinated and high-performing project culture.

8.3 Framework Implementation Guidance

To ensure the effective application of the LAP framework in design and construction project teams, this section offers comprehensive guidance on implementation. These recommendations are based on the empirical outcomes and reflective learning described in Chapter Seven. They are grounded in what was shown to be most effective when working with live project teams during the action research.

The structured training workshops were designed not only to teach LAP principles but to embed them through lived practical experience. Crucially, the success of these workshops depends on their ability to move beyond abstract instruction and engage participants in meaningful learning experiences. The most meaningful learning occurred when participants engaged in targeted exercises that allowed them to apply the LAP theory to real communication challenges they faced on their projects. Each module must, therefore, be designed to include practical, issue-driven exercises that surface and explore actual breakdowns, trust gaps, and coordination problems within the team. This approach ensures that the training is not only conceptual but also directly relevant and actionable.

8.3.1 Workshop Structure and Module Design

The LAP framework should be delivered in a modular format consisting of six integrated modules. Each module must include interactive exercises that allow participants to connect theory to their own project experience, enabling them to reflect on and resolve issues currently affecting team performance.

Table: 8.1 Module themes, concepts and key activities

Module	Module Theme	Key Concepts That Should Be Covered	Key Activities That Should Take Place
One	Introduction to Language Action	<ul style="list-style-type: none"> • Background of the LAP • Introduction of the Speech Acts • Assessments • Assertions 	Team members practice making assessments about the level and effectiveness of teamwork on the project
Two	The Action Workflow Loop	<ul style="list-style-type: none"> • Requests and Offers • Conditions of Satisfaction • Reliable Promising • The AWL 	Team members analyse typical project conversations, identify where communication broke down, and categorise speech acts. Participants begin mapping their coordination failures using LAP principles.
Three	Moods	<ul style="list-style-type: none"> • Background of moods • Expansive Moods • Restrictive Moods • Navigation of Moods 	Participants identify the current team moods, discuss how these affect decision-making and communication, and explore how unacknowledged moods may be influencing performance or contributing to conflict. Real project moments are dissected to examine emotional tone.
Four	Assessment Exercise	<ul style="list-style-type: none"> • Team members deliver positive assessments to each other • Team members deliver assessments for 	Team members provide honest assessments to one another about what they are doing well as teammates and

		improvement to each other	what they could improve upon.
Five	Listening	<ul style="list-style-type: none"> • Listening as a historical exercise • Listening for content • Listening for meaning • Listening for concerns 	Paired listening exercises using real examples from ongoing projects; participants reflect on moments when poor listening derailed coordination or created tension. Exercises explore assumptions and biases in listening styles.
Six	Trust	<ul style="list-style-type: none"> • Different types of trust in the LAP • Domains of Trust • Trust as a Mood 	Trust-mapping exercises involve participants reflecting on team relationships and identifying areas where trust is strong or lacking, based on real interactions. Case examples are drawn from current team dynamics.

8.3.2 Overall Duration and Scheduling

The LAP training programme can be delivered in two primary formats: as an intensive two-day training block or as a distributed series of modules delivered weekly over six weeks. While the two-day approach allows for efficiency and momentum, the six-week model offers advantages by providing participants with space to reflect, apply new concepts in real-time, and progressively build capability.

Spreading the training across six weeks enables participants to apply what they learn in each module and experiment with these ideas within the context of their everyday project work. They then return to the following session with reflections and real examples to explore, discuss, and analyse. This loop between learning, practice, and reflection significantly enhances understanding and retention, and it encourages behavioural change that is grounded in lived team experience.

However, the weekly model also presents challenges, particularly in maintaining consistency and full cohort participation over the entire duration. Project environments are often reactive and fast-paced, with personnel being pulled into urgent issues. Inconsistent attendance weakens the group learning dynamic, reduces trust-building, and risks fragmenting the shared vocabulary and practices that the training is designed to instil. Since the LAP is inherently relational, its impact depends on a stable and continuous group experience where trust, openness, and cumulative learning can take root.

In navigating these dynamics, the mode of delivery, whether in person or virtual, also plays a significant role. In-person delivery is strongly preferred where possible. It enables more natural interaction, facilitates more effective reflective exercises, and promotes greater responsiveness to non-verbal cues, which are often crucial when discussing interpersonal dynamics such as trust and mood. In-person settings also make it easier to read the emotional tone of the group, facilitate breakout discussions, and sustain energy across longer sessions.

That said, virtual delivery via platforms like Teams or Zoom can also be effective, particularly when logistical constraints or geographical dispersion make in-person gatherings difficult. Virtual delivery requires particular attention to engagement, as participants are more easily distracted, and building the depth of group cohesion can be more complex. Nonetheless, with skilled facilitation and proper design, virtual modules can still enable meaningful learning, particularly if teams are committed and have leadership support.

Regardless of the delivery mode, maintaining group continuity is essential. Project leadership plays a crucial role in reinforcing the importance of attending all modules and creating a culture in which the training is seen as a priority rather than a disruption. Scheduling sessions at the same time each week, ideally during protected blocks in the team's calendar, helps to anchor the programme and reduce scheduling conflicts. Sharing concise module summaries or reflection prompts between sessions also allows participants who miss a session to remain connected and catch up with minimal disruption to the group.

8.3.3 Cohort Size and Participant Selection

Effective workshops require a cohort size of 12 to 18 participants, allowing for both diverse perspectives and intimate, productive dialogue. Participants should include:

- Project leadership.
- Project managers from all participants' organisations.
- Site supervisors.
- Design team leads.
- Trade partner leads.

Selecting participants who are involved in both planning and delivery ensures that the LAP can be applied across communication layers within the team.

8.3.5 Embedding Through Practice, Reflection, and Real Project Engagement

A defining feature of effective LAP implementation is that learning must emerge from direct engagement with real project challenges. Chapter Seven showed that the workshops were most successful when participants could:

- Discuss real coordination failures or trust breakdowns.
- Reflect on how moods or poor listening shaped outcomes.
- Apply the LAP tools immediately to their team dynamics.

8.3.6 Lessons Learned and Recommendations for Future Implementation

The implementation of the LAP framework through workshop-based training has yielded important insights into what supports meaningful learning and sustained behavioural change within project teams. Drawing on facilitator reflections and participant experiences, this section summarises the key lessons that emerged from delivering the training and offers practical recommendations for strengthening future applications. These insights highlight the conditions under which the framework is most effectively embedded and the areas that require particular attention to maximise impact.

- Embedding the LAP depends on integrating theory with real-world team challenges, not just presenting concepts abstractly.
- Exercises must be highly participatory and issue-driven so that teams experience the relevance of the LAP to their everyday work.

- Trust and mood discussions unlocked critical team dynamics and should be given adequate time and support.
- SAT and CoS modules require repeated practice, as teams often default to vague or assumptive communication.
- Ongoing leadership involvement is essential to normalising LAP-based dialogue as a professional standard rather than an optional enhancement.

8.4 Framework Evaluation

The evaluation of the proposed framework was conducted through a structured presentation and reflective feedback session with a carefully selected group of academic experts and construction industry professionals. This evaluation was designed to critically test the practical relevance, conceptual completeness, and potential impact of the framework, and to gather insights into its strengths, limitations, and future applicability. It represented a final phase of participatory engagement, intended to bridge the gap between research and practice by allowing a diverse audience to scrutinise and respond to the framework in a focused, dialogic setting.

The evaluation took place as a live session in which the framework was presented and supported by commentary drawn from the research process, including summaries of case study findings, theoretical foundations, and practical implementation guidance. Participants were invited not simply to observe the presentation but to engage in a focused and open-ended conversation about the framework's design and relevance. The format resembled that of a facilitated focus group, enabling active reflection and peer discussion among attendees. This method was chosen over individual interviews or surveys because it allowed for the emergence of collective insights, cross-pollination of ideas, and the opportunity to clarify or challenge the framework in real time.

Participants were selected based on their experience and positional relevance. The group included approximately twelve individuals, with a mix of senior construction practitioners, project leaders, and academics specialising in construction management, lean methods, and organisational behaviour. Importantly, the cohort was composed of both those who had been involved in the earlier stages of the action research (including workshop participants from the case studies) and those external to the research, who were encountering the framework for the

first time. This combination ensured a balanced perspective: those familiar with the LAP could evaluate the accuracy and resonance of the framework based on lived experience, while external participants provided a fresh lens through which to assess clarity, accessibility, and generalisability.

The purpose of the evaluation was framed explicitly for the group at the beginning of the session: to test whether the framework was needed in the current construction context, whether it was helpful and practically usable, whether it felt complete or lacking in any critical way, and whether there were identifiable opportunities to strengthen or refine it. These core questions mirrored standard evaluative criteria used in practice-oriented research: need, usefulness, completeness, and potential for improvement. They were presented to the group after the walkthrough of the framework and were used to guide an open dialogue facilitated by the researcher.

The question of whether the framework was needed provoked a strong response. Participants with industry backgrounds affirmed that communication remains one of the most persistent and under-addressed problems in project delivery. There was widespread agreement that current approaches, whether focused on tools, checklists, or behavioural training, often failed to produce sustained improvements in coordination or trust. The framework's focus on language as action, and its grounding in distinctions such as speech acts, moods, and trust domains, was seen as a compelling and overdue intervention. Participants noted that while these ideas were not entirely new, they had never before been presented as a coherent, practice-focused framework designed specifically for project team environments.

In exploring the usefulness of the framework, participants discussed its applicability in the field. Industry professionals responded particularly positively to the inclusion of training modules and practical exercises that translated the conceptual ideas of LAP into observable behaviours and team routines. The sequencing of modules from foundational theory to real-time reflective practice was viewed as both intuitive and flexible enough to accommodate different team structures and delivery models. Some expressed that the framework could help bridge the divide

between project management and project leadership, particularly in addressing the interpersonal dimensions of trust and coordination that are often neglected in formal processes.

The discussion then turned to the completeness of the framework. Participants were asked whether any critical components appeared to be missing or underdeveloped. While there was consensus that the core concepts of LAP were represented effectively, several participants suggested that the interconnection between these elements could be further clarified. For instance, one participant noted the importance of making the dynamic between moods and listening more explicit. At the same time, another encouraged more visual or narrative guidance on how the framework unfolds over time within a live project. There were also suggestions to offer additional implementation scenarios for teams with varying levels of prior exposure to reflective practice or organisational learning.

Finally, the conversation addressed opportunities for improvement. Participants provided detailed and constructive feedback, including the suggestion to integrate more real-life case examples or vignettes drawn from the action research to illustrate the application of the framework's components in context. Others highlighted the importance of flexibility, noting that different organisations might need to customise specific terms or activities to better align with their culture or delivery approach. The session also prompted a discussion around the language used in the framework, particularly the accessibility of terms such as assertions, moods, and trust domains and whether additional plain-language explanations might increase the likelihood of widespread adoption.

Throughout the session, feedback was captured through detailed field notes and post-session reflections by the researcher. This input was later synthesised and used to refine both the explanatory narrative and supporting materials of the framework. As a result of this evaluation process, several minor but meaningful enhancements were made, including more precise articulation of the connection between components, the addition of more illustrative examples, and an emphasis on the importance of leadership support and ongoing reinforcement, both of which were also highlighted in the cross-case findings in Chapter Seven.

The evaluation of the framework served as a final, rigorous test of its conceptual validity, practical relevance, and readiness for dissemination. The session affirmed that the framework speaks directly to a critical and unresolved need in the construction industry: the need for a structured, action-oriented approach to communication that goes beyond information exchange to support meaningful coordination, trust building, and team alignment. The engagement of both internal and external stakeholders added depth and legitimacy to the process, and the feedback received confirmed that the framework not only reflects the findings of the research but also holds promise as a practical tool for transformation in construction project environments.

8.4.1 Framework Evaluation Results

The evaluation session yielded encouraging and insightful feedback, confirming the framework's practical value, conceptual grounding, and relevance to ongoing challenges in construction project communication. Participants expressed a strong consensus that the framework addressed a long-standing need in the industry and offered a novel, accessible way of improving communication and team coordination, particularly in complex, multidisciplinary project environments.

One of the most consistent themes across the feedback was recognition of the importance and timeliness of the framework. Both practitioners and academics agreed that communication remains a persistent challenge in construction projects, often contributing to delays, mistrust, and misaligned expectations. In this context, the LAP was seen as a highly relevant conceptual foundation, and participants affirmed that the framework offered a clear and practical structure for embedding the LAP into everyday project work. The model's focus on actionable distinctions around the LAP components was welcomed as a valuable and much-needed contribution to project communication strategies.

Participants also responded positively to the practical orientation of the framework, particularly the modular structure that allows teams to progressively engage with LAP concepts through structured training sessions and reflective exercises. The integration of theory and practice was viewed as a strength, helping teams move from abstract understanding to applied behaviour. Many noted that the framework could support not only communication but also broader team

development and culture change efforts. The session affirmed the framework's potential as a valuable tool for improving collaboration at both the project and organisational levels.

In terms of completeness, participants felt that the framework covered the essential dimensions required to bring about meaningful change in communication practices. The inclusion of interconnected concepts—such as trust, listening, and mood was seen as comprehensive, providing a well-rounded view of the human factors that influence team coordination. While there were some helpful suggestions for expanding the explanations of how these elements interrelate, these were not perceived as gaps or weaknesses, but rather as opportunities to enhance the explanatory guidance that accompanies the framework.

Several participants suggested that the addition of concrete examples or short case narratives could further enhance the clarity of the framework for new users. Suggestions were also made regarding terminology adaptation, highlighting the importance of using accessible language, especially for site-based teams or stakeholders unfamiliar with philosophical terms.

Another key outcome of the session was the affirmation of the framework's suitability for a range of project environments. Participants noted that the flexible structure makes it applicable to early-stage team alignment, mid-project course corrections, or post-project reflection and learning. Importantly, even participants unfamiliar with LAP before the session found the framework comprehensible and engaging, suggesting that the model succeeds in making advanced theoretical ideas accessible and relevant to practice.

Overall, the evaluation confirmed the framework's practical relevance, conceptual integrity, and capacity for real-world application. The feedback collected not only validated the direction of the research but also reinforced the framework's value as a tool that bridges theory and practice. Participants appreciated the opportunity to contribute to its ongoing refinement and expressed interest in seeing it introduced more widely within industry settings. These findings underscore the framework's potential to support lasting improvements in how project teams communicate, coordinate, and collaborate.

8.5 Summary

This chapter presented the development, structure, and evaluation of a framework designed to enhance communication within construction project teams by applying the LAP to their working methods. Grounded in both theoretical foundations and empirical evidence, the framework integrates key components, including speech acts, trust domains, mood awareness, and active listening, into a cohesive model of coordinated communication.

The chapter outlined the phased process of framework development, beginning with a reconceptualisation of the LAP, followed by embedding project teams in the approach through structured training, and observing behavioural transformations during application. The framework offers a practical and theoretically grounded model for enhancing collaboration and coordination in construction teams. The next chapter brings the thesis to a close by outlining its key contributions to knowledge and practice, reflecting on the research limitations, and proposing directions for future work in improving communication and coordination in project environments.

Chapter 9: Conclusion and Recommendation

9.1 Introduction

This conclusion chapter discusses the achievement of the research objectives for the study. The key findings from the study are then discussed, followed by an examination of their contributions to knowledge and practice. The limitations of the research and recommendations for further research on the LAP and its usefulness in promoting lean construction practice have also been discussed. This chapter contributes to Research Objective five of the study.

9.2 Summary of the Research

This research investigated the impact of the LAP on improving communication, trust, and the reliability of promises and how it can improve project teams in the construction industry. The research utilised a qualitative methodology, combining two case studies to capture the benefits of lean construction by introducing the LAP through interactive workshops.

Two case studies provided the empirical foundation for the research. The first focused on a healthcare project in the Pacific Northwest, where the project team faced challenges around budget constraints, poor communication, and mistrust between team members. The second examined a pharmaceutical project in the Southwest United States of America, where the pressure to deliver the project quickly impacted collaboration and provoked bad moods within the team. Participants in both case studies reported communication breakdowns, including unclear requests and unreliable commitments that produced a lack of trust and poor moods before the LAP workshops were delivered.

The workshops were designed to introduce the LAP principles and allow participants to practice those principles by participating in exercises that combined the LAP principles with discussion around actual project-specific problems. The workshops gave participants new skills to make clear requests, manage promises, and engage in more effective conversations. The teams learned to move from surface level discussions to meaningful, action-oriented conversations in the

workshops. The post-workshop surveys revealed significant improvements in all the measured areas, including trust, the overall quality of communication, clarity of requests, reliability of promises, and meeting effectiveness. Both case studies showed that the LAP can improve team communication practices by offering a new way to observe language and manage commitments, which can build trust within the team.

The discussion of the findings underscored that while the projects differed in what they were building and some underlying issues differed, both benefited from more effective communication and new skills to build and repair trust. The findings confirmed the core aims of the research questions by demonstrating that the LAP can effectively address many of the common communication challenges in construction project teams. Through the application of LAP, teams developed new skills in speech acts, managing commitments, and building trust, directly contributing to improved clarity in requests, greater reliability in promises, stronger team coordination, and more effective overall communication.

9.2.1 Research Objective One: To Review the LAP and its Influence on Communication in Project Teams.

The first research objective was to critically review the LAP and evaluate its influence on communication in project teams. This objective was addressed in the literature review found in Chapters Two and Three, which together established both the theoretical foundations of the LAP and its relevance to projects.

Chapter Two traced the origins of the LAP from speech act theory, pioneered by Austin and Searle, to its organisational applications developed by Flores and Winograd as discussed in Section 2.3. At the core of this perspective is the performative nature of language: requests, offers, promises, and declarations do not merely convey information but create coordinated action and shape social reality. The chapter demonstrated that many of the difficulties faced by project teams arise not from technical or procedural shortcomings but from communication breakdowns and the absence of explicit conditions of satisfaction. The LAP responds to these challenges by reframing communication as the management of commitments, providing a

structured approach for building trust, ensuring accountability, and improving the quality of interactions within teams.

The chapter also examined how listening, moods, trust, and psychological safety underpin the effective use of LAP. These elements contribute to the development of high-performing teams by creating an environment where misunderstandings are minimised, commitments are transparent, and coordination is more reliable.

Chapter Three extended this discussion by reviewing the LAP within the lean construction agenda. While lean practices emphasise collaboration, waste reduction, and reliable planning, their success is often undermined by fragmented communication and adversarial stakeholder relationships. Chapter Three demonstrated that the LAP strengthens lean practices by offering the conversational infrastructure necessary for genuine collaboration. By supporting the progression from conversations focused on possibility to conversations focused on action, the LAP enhances clarity in requests, reliability in commitments, and trust among stakeholders. This review confirmed that the LAP not only aligns with but also amplifies lean construction principles by embedding communication as a performative and accountable act.

Together, the review of the existing literature conducted in Chapters Two and Three supports the finding that the LAP provides both a robust theoretical foundation and a practical methodology for improving communication in project teams. By improving the fundamental communication elements within project teams, we can build new relationships based on trust. As trust improves, the overall mood of the project team also improves.

9.2.2 Research Objective Two: To Review Interrelationships Between the LAP and Lean Construction Agenda and Identify any Existing Research Gaps.

Chapter Three examined how the LAP has been applied in lean construction, revealing both promising alignments and notable gaps. Much of the existing work has focused on applying the LAP concepts to enhance specific lean tools, such as the LPS. Existing literature in this area provided evidence that the LAP can support more reliable workflows by increasing shared understanding and producing more transparent communication among team members. However,

the concentration on tool-level improvements in existing literature highlights a significant gap: the broader role of LAP as a holistic framework for communication and collaboration across entire project teams has received limited attention.

Section 3.4 of the thesis highlighted that despite lean construction's potential benefits, its adoption continues to be hindered by challenges such as fragmented communication, stakeholder misalignment, and resistance to change. The existing literature has shown that these challenges are frequently relational and conversational in nature; however, research in lean construction has tended to prioritise technical solutions and contractual models over structured communication frameworks. This reveals a gap in how lean theory addresses the social dynamics necessary for implementation. The LAP offers an avenue to fill this gap by introducing structured conversational practices for building trust, negotiating commitments, and sustaining accountability across organisational boundaries.

Section 3.5 demonstrated that collaboration is central to lean success, and the LAP supports this by providing a framework for conversations that move from possibilities to action. Nevertheless, the existing literature reveals that while the mechanics of collaboration specific to lean tools are well-documented in existing lean construction research, the quality and structure of the underlying conversations are rarely addressed. This neglect creates a gap between the application of the LAP to lean tools and the application to overall team dynamics.

Trust emerged in Section 2.9 and Section 3.5.12 as a further research gap. While existing lean construction literature recognises trust as essential, particularly in IPD projects, the literature rarely offers practical tools for diagnosing and repairing trust when it breaks down. The LAP addresses this deficiency through its focus on the domains of trust, as shown in Table 2.4, and by building conversations that explore breakdowns in those domains. The limited research in existing lean construction literature around trust as a conversational problem suggests that this potential remains underexplored.

A further gap arises in relation to the reliability of promises and conditions of satisfaction. Although lean construction emphasises predictability and reliable workflow, existing studies

have shown that project teams often struggle with vague commitments and non-committal language. The LAP offers a framework for negotiating explicit requests, offers, and promises, anchored in conditions of satisfaction, which can enhance the reliability of promises within teams. However, the literature review showed that this approach has yet to be widely adopted or tested beyond its application to lean construction tools.

While Chapters Two and Three demonstrated the strong conceptual alignment between the LAP and lean construction, they also revealed persistent research gaps. These include: (1) an overemphasis on lean construction tool level applications of the LAP at the expense of whole-team communication frameworks, (2) insufficient exploration of conversational practices as a foundation for collaboration, (3) a lack of practical approaches to building and repairing trust in project teams, and (4) limited integration of CbM practices into lean construction implementation strategies. Addressing these gaps provided the rationale for the empirical investigations in this study and confirmed the importance of further work to embed the LAP within lean construction practices.

9.2.3 Research Objective Three: To Evaluate the Relationship Between the LAP and Trust Within Project Teams and Empirically Investigate its Influence on the Successful Coordination of Commitments.

In Chapter Two, the existing literature established the close relationship between the LAP and trust, highlighting how clear requests, negotiated commitments, and reliable promises can serve as the foundation for stronger team relationships. Sections 2.2 and 2.3 traced the philosophical origins of LAP in speech act theory. In contrast, Section 2.4 demonstrated how speech acts and CoS are essential tools for fostering collaboration and trust. The AWL outlined in Section 2.5 was shown to be a key mechanism for identifying the flow of commitments within conversations, thereby supporting a CbM approach. Section 2.9 further examined the LAP in relation to the domains of trust, emphasising how communication practices directly influence whether commitments are accepted, fulfilled, or broken. Collectively, these theoretical insights highlighted the LAP's capacity to embed trust into project communications and to make the coordination of commitments more transparent and reliable.

The empirical investigations presented in Chapters Five and Six reinforced these theoretical insights by demonstrating how low levels of trust undermined the reliability of commitments before the workshops. In Case Study One, pre-workshop surveys revealed an average trust score of 2.56 out of 5 and a reliability of promises at 2.48 (Table 5.4). Participants described frequent use of vague or non-committal language, such as “I’ll try” or “maybe”, and admitted feeling pressure to make promises they knew could not be kept. This lack of trust translated into coordination breakdowns, with team members avoiding difficult conversations and failing to align on project objectives. Following the workshops, post-survey scores showed marked improvement, with both trust and reliability ratings increasing significantly as participants reported greater confidence in others’ commitments and began adopting more precise, promise-based language (Table 5.8).

A similar pattern emerged in Case Study Two, where trust between contractors, designers, and the owner’s representatives was initially low, with pre-workshop surveys averaging 2.12 on trust and 2.65 on reliability of promises (Table 6.3). Participants reported scepticism about whether commitments would be met and noted that unclear requests led to wasted effort and rework. The introduction of LAP principles, particularly the explicit negotiation of CoS, helped shift these dynamics. Post-workshop surveys revealed notable improvements: trust scores increased as participants became more transparent in their commitments, and the reliability of promises improved as vague language was replaced with clear agreements. Interviews confirmed that participants now saw promises as “actionable commitments” rather than tentative intentions, and this shift enabled better coordination of tasks and deadlines.

The cross-case analysis in Chapter Seven confirmed that trust was a decisive factor in determining whether teams could transition from discussion to coordinated action. In both case studies, higher trust scores after the intervention correlated directly with improvements in promise reliability and request clarity. Where trust improved, commitments became more reliable and workflows more predictable. The analysis further showed that trust and reliable commitments are mutually reinforcing: the act of making and keeping reliable promises builds trust, while trust encourages participants to engage in authentic commitment-making.

Taken together, the theoretical and empirical findings confirmed that the LAP provides both a framework and practices for linking trust with the coordination of commitments. By enabling teams to observe, evaluate, and improve their conversational practices, the LAP makes visible the role of trust in project communication and provides mechanisms to repair it when broken. The study demonstrated that trust is not simply a background condition for project teamwork but an active and measurable construct that directly shapes the coordination of commitments within construction project teams.

9.2.4 Research Objective Four: To Evaluate the Potential Contributions of the LAP to Advancing the Lean Construction Agenda and Assess the Effectiveness of Applying the LAP as an Approach for Improving Communication in Lean Construction Teams.

The findings from this research show that the LAP improves communication quality and strengthens the alignment between lean construction principles and practical project execution. By enabling teams to move from managing activities to managing commitments, the LAP supports lean construction's focus on reducing waste, enhancing accountability, and fostering continuous improvement. The research demonstrates that applying LAP provides a reliable framework for coordinating commitments in complex construction environments, leading to more predictable and successful project outcomes. The effectiveness of the LAP in improving lean construction projects lies in its ability to enhance communication by focusing on speech acts and producing positive moods and trust within teams. As discussed in Section 7.8.1, effective communication is essential in construction, where success depends on the alignment of multiple stakeholders with varying roles, conflicting priorities, and different expectations.

Before the LAP workshops, both action case studies highlighted persistent communication challenges within the project teams. Unclear requests, unreliable promises, and poor moods were common. These challenges led to misaligning actions within the project work in both action case study projects. The introduction of the LAP provided a structured framework for communication, enabling participants to transition from vague discussions to conversations for action. Team members learned to make clear requests, negotiate commitments, and use speech acts intentionally to create action, cultivate positive moods and build trust. This improved the overall quality of communication, as discussed in Section 7.3.

In traditional construction environments, coordination challenges frequently arise from fragmented communication and unclear commitments, leading to missed deadlines, rework, and strained stakeholder relationships. Before the LAP workshops in Chapters Five and Six, both case studies exhibited similar issues, including vague requests, unreliable promises, and low levels of trust, which led to unproductive meetings and misaligned efforts. Through LAP workshops conducted in both case studies, this study demonstrated that teams could transition from informal conversations to more deliberate conversations for action that aligned future actions with project goals. This shift was crucial in reducing ineffective coordination conversations, which is one of the critical objectives of lean construction.

As discussed in Section 7.3, the clarity of communication improved significantly following the LAP workshops, which directly impacted the teams' ability to coordinate actions effectively. Participants reported that clear requests reduced confusion around what actions needed to be taken, allowing tasks to be completed as intended and eliminating much of the rework caused by miscommunication. Focusing on making clear requests leads to more reliable promises that further improve communication by fostering greater accountability. Team members reported becoming more deliberate in their commitments, ensuring that promises were realistic and aligned with the project timeline. This shift increased the reliability of commitments across the team, reinforcing trust and improving workflow predictability.

The LAP also played a critical role in fostering trust within project teams, a fundamental component of lean construction. As discussed in Section 7.8.2, the LAP improved trust within the case study teams. In lean construction projects, trust is essential to a collaborative environment where team members must be comfortable challenging each other around design details, constructability and money. Trust between stakeholders is critical for collaboration, particularly in lean projects, where shared risks and rewards require high transparency. The case studies demonstrated that the LAP provided a practical framework for building, maintaining, and repairing trust by breaking it into observable domains, such as competence, sincerity, reliability, and engagement. By developing trust incrementally through reliable commitments, teams can engage in open, transparent conversations, which enhance collaboration and reduce the friction that leads to a low collaboration environment.

Meeting effectiveness improved in the case study teams after introducing the LAP. Lean practices are an essential part of collaboration on lean projects, and that collaboration often happens in project meetings. The participants in the case studies reported more efficient meetings that helped drive decision-making and aligned team members toward shared goals. Before the LAP workshops, meetings in both case studies were described as unproductive, with participants leaving without clear action items or commitments. Introducing the LAP's conversations for action helped transform meetings into forums for securing actionable commitments. This improved the alignment of team members around project milestones and helped to ensure that follow-up actions were clearly understood and tracked.

Chapter Seven discussed the combined effect of improved communication and trust-building, facilitated by the LAP, which strengthens the alignment between individual actions and the project's broader goals. This alignment is crucial in lean construction, where the success of each task depends on its seamless integration within the overall project workflow. The LAP's focus on speech acts provided a new way for managing this alignment within the case study teams, helping to ensure that each commitment was connected to the right project outcome.

9.2.5 Research Objective Five: To Develop, Evaluate, and Propose a Framework for Deploying the LAP to Improve Communication Amongst Construction Project Teams.

Based on the results of the case studies in Chapters Five and Six, deploying the LAP into project teams requires deliberate planning and integrating its principles into everyday project workflows. Effective deployment strategies include training and workshops, leadership alignment and support, and ongoing coaching around the practices. It is also essential that the principles of the LAP are embedded into project tools and routines so that they become standard practice rather than being perceived as another layer of tools or one-off processes.

As discussed in Chapters Five and Six, workshops and training sessions that introduce team members to the core concepts of the LAP create a foundation for understanding how these concepts can be used in practice. These interactive sessions enable participants to practice speech acts and develop skills for engaging in clear, action-oriented conversations. When participants

apply these practices to real project issues, rather than abstract examples, engagement in the workshops is higher, and the relevance of the LAP becomes clear in our everyday work.

Project leadership commitment was also shown to be critical. Leaders who adopt the LAP principles in their own communication set the tone for their teams, model desired behaviours, and demonstrate accountability through their own commitments. As discussed in Chapter Seven, leadership buy-in ensures that the LAP is sustained, fostering a culture of trust, transparency, and reliable commitments.

The framework developed in Chapter Eight consolidated these insights into a structured model for deployment. Section 8.3 introduced the deployment framework, shown in Figure 8.1, which positions the new model for the LAP as its central organising element. The framework in Figure 8.1 provides teams with a systematic process for developing workshops and implementing the LAP principles into project teams. This directly addresses one of the key gaps identified in the case studies: the lack of an established model for utilising the LAP to enhance communication across project teams.

Section 8.3 outlined the implementation guidance for embedding the LAP within project teams through interactive workshops. This framework responds directly to the findings in Chapters Five, Six, and Seven, where teams required structured practice, visible leadership commitment, and regular feedback loops to sustain improvements in communication.

The framework further emphasised the importance of continuous learning cycles, including regular retrospectives and feedback sessions, to ensure that the LAP does not remain a one-time intervention but evolves in tandem with the project. This feature of the framework ensures alignment with research objective five by embedding the LAP as an enduring cultural and communicative practice rather than a temporary training exercise.

The framework presented in Chapter Eight represents the culmination of the earlier research objectives: it translates the theoretical foundations of the LAP (Chapters Two and Three) and the empirical findings from the case studies (Chapters Five and Six) into a practical, actionable

guide for deployment. The study not only demonstrated the potential of the LAP but also developed a structured framework, articulated in Figure 8.1, for embedding it into project teams to improve trust, collaboration, and the coordination of commitments.

9.3 Conclusions of the Research

This research investigated the impact of the LAP on communication and trust within project teams. A detailed analysis of two case studies examined how introducing LAP principles influenced collaboration and improved project communication. The key findings of this study are:

- Structured communication practices introduced through LAP workshops significantly improved project teams' ability to coordinate actions.
- Trust is not a single entity but exists across multiple domains.
- Making clear requests and reliable promises to align actions with project goals is critical to producing effective coordination of commitments.
- Meetings became more effective when teams can move conversations from possibility to conversations for action by making a clear request or an offer.
- The LAP contributes to lean principles by enhancing communication, collaboration, and commitment among stakeholders in construction projects.

The following sections summarise the key conclusions drawn from the findings presented in the previous chapters.

9.3.1 The Impact of Structured Communication on Team Performance

The research demonstrated that structured communication practices introduced through LAP workshops significantly improved project teams' ability to coordinate actions. Before the workshops, communication among team members was often unclear and unproductive, leading to a lack of commitment that produced mistrust. The workshops enabled participants to use the speech acts to build a reliable and defined communication method, which fostered more actionable and commitment-based conversations.

9.3.2 Trust as a Multi-Dimensional Construct Influencing Collaboration

A critical finding from the case studies is that trust is not a single, unified concept, but rather exists across multiple domains, specifically, competence, reliability, sincerity, and engagement. The study revealed that a lack of trust in one or more of these domains was a significant barrier to effective collaboration in construction project environments. Through the workshops, participants were introduced to a framework that allowed them to observe, diagnose, and repair trust issues within these specific domains. This enabled a more targeted and constructive approach to rebuilding trust, as participants learned to recognise that a team member might be trusted in one domain while not in another.

This research contributes to the existing body of knowledge on trust in project-based and organisational contexts. Traditionally, trust has been treated as a generalised state, either present or absent, making it challenging to address in practical terms. By contrast, this study provides an actionable model that disaggregates trust into discrete, observable components. This domain-specific approach not only clarifies where trust is breaking down but also how it can be rebuilt using language-based interventions grounded in the LAP.

This study also extends existing trust theory by integrating it with communication practices. It shows how trust is not merely an attitude or belief but is constructed and reinforced in conversations.

9.3.3 The Role of Clear Requests and Reliable Promises in Project Coordination

The research highlighted the importance of making clear requests and reliable promises to align actions with project goals. Before the workshops, team members reported that it was often unclear what was being asked of them, that promises were rarely made, and that produced a low level of trust that work would be completed on time. The LAP provided a framework to shift conversations from vague possibilities to explicit commitments. This shift increased accountability and reduced the reliance on ambiguous language such as “I’ll try” or “maybe,” which undermined project coordination. The clarity of commitments enhanced the teams’ ability to create more reliable outcomes for coordination conversations.

9.3.4 Improved Meeting Effectiveness through Action-Oriented Conversations

The action case studies found that meetings became more effective after the workshops as participants reported being more aware of moving conversations from possibility to conversations for action by making a clear request or an offer. Before the workshops, participants reported that meetings were often dominated by unproductive discussions, with participants needing clarification about what was expected. The LAP framework transformed meetings into platforms for securing commitments, making explicit requests, and aligning actions. In follow-up interviews, participants reported that this improvement fostered more transparent communication, better decision-making, and smoother coordination across the project teams.

9.3.5 The LAP's Contribution to Implementing Lean Construction Principles

The LAP contributes to lean principles by enhancing communication, collaboration, and commitment among stakeholders in construction projects. The LAP emphasises the importance of language as a tool for creating action and building interactions between team members, which aligns closely with the objectives of lean construction: improving efficiency and reducing waste through effective teamwork and coordination.

One of the primary contributions of the LAP to lean principles is its focus on the role of language in facilitating clear communication among project participants. As discussed in Section 7.8.1, this can increase the shared understanding among team members. Monitoring linguistic actions during planning meetings can provide insights into how effectively team members communicate their commitments and expectations. This clarity is essential in lean construction, where misunderstandings can lead to delays and inefficiencies. By fostering a culture of open dialogue, the LAP enables stakeholders to articulate their needs and constraints, thereby enhancing the overall coordination of project activities (Retamal et al., 2021).

The LAP also supports the development of a collaborative environment, which is crucial for successful lean implementation. Effective coordination goes beyond mere information exchanges; it involves governing collective actions between team members. The LAP facilitates this by encouraging stakeholders to engage in meaningful conversations that align their

individual efforts with the project's goals. This alignment is vital for minimising waste and ensuring all parties are committed to the same objectives.

On lean construction projects, the ability to identify missing requests and unreliable promises is key to success (Salazar, Arroyo and Alarcón, 2020). The LAP dramatically enhances and improves the ability of teams to have the correct skills to do that effectively. This enhanced ability to observe these missing speech acts in project communication advances the lean construction agenda by improving shared understanding among team members. This, in turn, promotes the flow of information required on a lean project (Ebbs and Pasquire, 2018).

As discussed in Section 7.8.2, an enhanced level of trust is critical to successfully implementing lean in construction projects. The LAP outlines how to build and repair trust within project teams, which leads to more reliable promises and more open communication, which in turn enhances the shared understanding among team members.

9.4 Contribution to Knowledge

This research contributes new knowledge by extending the LAP beyond its established focus on speech acts, the AWL, and CoS, to incorporate trust, moods, and listening, resulting in a more comprehensive framework for project collaboration. The existing literature on the LAP has primarily centred on its foundational mechanisms for coordinating action: the application of speech act theory, the AWL, and CoS. These concepts, developed through the work of Austin, Searle, and Flores, provide a powerful model for understanding how commitments are created, managed, and completed through conversations. Within this framing, organisational performance and reliability are seen to depend on the ability of teams to make clear requests, offers, and promises and to fulfil them under agreed conditions. This literature has informed a significant body of research in linguistics, management, and lean construction, where the AWL and CoS are applied to design processes, coordination practices, and commitment-based management.

The findings of this research, however, extend the LAP by demonstrating that these structural elements alone are insufficient to explain or improve performance in project environments. The case studies revealed that the success of speech acts and commitment management is profoundly

shaped by relational and affective factors, specifically trust, moods, and listening. Trust determines whether commitments are believed and acted upon; moods shape the background in which conversations take place and whether they open or close possibilities for action; and listening is fundamental to ensuring that requests and promises are genuinely understood through our historical experiences. By integrating these dimensions with the established model, this study developed a new framework, presented in Chapter Eight, that captures both the structural mechanics of coordination and the human conditions that enable or undermine it. This synthesis contributes to knowledge by advancing the LAP from a primarily structural theory of communication toward a more holistic model of project collaboration, one that recognises the interplay between linguistic actions and the trust-based, emotional, and interpretive contexts in which they occur.

This thesis also contributes to the body of knowledge by advancing the understanding of how the LAP can be applied to improve communication, trust, and collaboration in construction project teams. It provides insights into integrating the LAP principles, including speech acts, listening, moods and trust within construction management. It extends the application of the LAP beyond its traditional domains in lean construction, which has historically focused on using it to enhance lean tools. The research bridges a gap between the use of the LAP to enhance and improve lean tools and the use of the LAP to improve the foundational elements of communication within project teams.

This study also advances the understanding of the process by which the LAP influences communication and collaboration in construction teams. It offers explanatory insights into the process-based mechanisms that underlie communication improvements and team performance.

This study also contributes to knowledge with the empirical validation of the LAP's impact on team dynamics and project outcomes through two in-depth case studies. The thesis demonstrates how structured communication practices foster clearer requests, reliable promises, and trust-building, which are essential for coordinating action in construction projects. The existing literature examined in Chapter Three found a lack of research on using the LAP as a comprehensive way to improve lean construction projects. These findings expand the existing

theoretical discourse on the LAP by providing case study evidence of how its principles can enhance team performance in the highly fragmented and fast-paced construction context.

The research also contributes to knowledge by showing how the LAP can enhance the lean construction agenda beyond improving lean construction tools, as discussed in Section 3.3. Integrating the LAP on lean construction projects can create a more collaborative and open environment around trust and communication. Previous research, as examined in Section 3.5.12, focused on increasing trust through the use of the LAP around specific lean tools. This integration of the LAP and lean construction demonstrates that improving communication is not merely an operational concern but a strategic necessity for implementing lean practices. It highlights the importance of managing commitments rather than tasks, thereby advancing the field's understanding of how conversation-based frameworks can reduce coordination waste, foster transparency, and promote continuous improvement in construction projects. In Section 2.5, CbM was discussed as it applies to other industries. However, the use of a CbM approach and its focus on outcomes rather than tasks was not present in the literature explored for Chapter Three. It is a missing piece of the existing LAP and lean construction research.

Another significant contribution is exploring trust as grounded in making assessments against specific trust domains. This allows people to observe how trust is built, maintained, and repaired within construction teams. This concept was examined in the literature as part of Section 2.9. However, there was a lack of existing research on how the LAP can improve trust within construction project teams. The framework in Section 2.9 enables project teams to assess and address trust breakdowns more precisely but has not been previously explored in the field of lean construction. This study advances knowledge in lean construction by demonstrating that trust is not a monolithic concept but can vary across different domains, influencing communication and team performance in specific ways, as shown in the case study results in Chapters Five and Six.

The findings of this research demonstrate that the LAP is not limited to specific sectors or narrowly defined project types. While this study applied the LAP in the context of lean construction projects; specifically a healthcare facility (Chapter Five) and a pharmaceutical manufacturing expansion (Chapter Six). The underlying principles of LAP, namely the

management of commitments through speech acts, the use of explicit conditions of satisfaction, and the targeted building and repair of trust, are universally relevant to any project-based environment where coordinated action among diverse stakeholders is essential. The LAP's foundation in human communication (Section 2.2) means it can be adapted to a wide range of industries, including engineering, IT systems delivery, product development, and service delivery, as it addresses the universal challenge of aligning people's intentions with their actions through language. This study contributes to knowledge by showing, through empirical data and qualitative insights from workshop interventions, that LAP can be operationalised as a structured communication and commitment-management framework within lean project delivery systems. Before this research, there was limited evidence connecting the LAP specifically to the operational needs of lean construction, such as reducing coordination waste (Section 3.5.5), improving the reliability of workflow, and enabling trust repair in multi-company project teams. This research extends the theoretical domain of the LAP by integrating it with lean construction tools and showing, in practice, how the two can reinforce one another to achieve measurable improvements in team performance.

The case studies revealed several barriers to successful LAP adoption. Teams entrenched in traditional communication habits often default to vague requests and non-committal language, undermining the reliability of promises (Sections 5.4.3 and 6.4.3). Organisational silos and contractual misalignments common in construction can hinder the open exchange of concerns and the negotiation of realistic commitments. High-pressure project environments create a bias toward quick yes responses instead of well-negotiated agreements, leading to overcommitment and subsequent breakdowns in trust. Resistance to changing meeting structures and the absence of formal onboarding into LAP practices were also recurring challenges (Sections 5.7.5, 6.4.5).

From both case studies, several critical success factors emerged. Visible leadership commitment to using LAP principles was essential for creating a culture where explicit commitments and trust repair were valued (Sections 5.5.2, 6.5.2). Embedding the LAP concepts into existing lean tools and routines, such as LPS meetings, helped normalise the new communication behaviours. Providing targeted training on speech acts (Table 2.1) and the trust domains framework, reinforced through practice during live project issues, accelerated adoption. Creating safe

environments for frank dialogue, as in the trust and assessment exercises, enabled participants to address long-standing relational breakdowns, improving both team cohesion and workflow reliability.

This research makes a methodological contribution by employing a hybrid approach that combines multiple case studies with action research methods, providing a robust model for studying communication in dynamic project settings, as discussed in Chapter Four. The participatory nature of the action research process, combined with pre- and post-intervention analysis, offers a blueprint for future researchers exploring communication frameworks in other industries. This approach enhances the rigour of qualitative research in project management and provides deeper insights into how theoretical constructs like the LAP can be observed in action. The existing literature explored in Chapter Three did not find any use of the action research methods and case studies to explore the LAP in the broader lean construction project environment.

This thesis contributes to knowledge by deepening the understanding of communication frameworks in construction, advancing the integration of the LAP with lean methodologies, and offering new insights into trust in project teams. It provides a theoretical and practical foundation for future research on communication-based management frameworks in lean construction that addresses the gaps in the existing literature explored in Chapter Three. This research highlights the significant influence the LAP can have on collaboration and trust, which are critical to success in lean construction projects. It builds on the existing literature around these issues discussed in Chapter Two and fills in the gaps around these domains missing from the literature in Chapter Three. These contributions demonstrate the potential of the LAP to transform how projects are managed, moving from a focus on tasks to a focus on commitments, relationships, and outcomes, thus offering a pathway to more effective and sustainable project delivery.

9.5 Contribution to Practice

This research demonstrates that applying the LAP in lean construction projects can directly inform and improve day-to-day project delivery practices. The findings from both case studies in Chapters Five and Six show that targeted LAP training can be operationalised in several

interrelated ways that go beyond general improvements in communication, trust, and collaboration.

Firstly, the adoption of explicit CbM processes, as introduced in Section 2.5, enables teams to move systematically from discussions into negotiated, reliable promises. This provides a repeatable structure for tracking commitments, reducing missed deadlines, and improving schedule predictability, directly supporting lean principles of reliable workflow.

Secondly, the introduction of speech-act distinctions in Table 2.3 into regular project conversations ensures that action items are precise, accountable, and aligned with agreed conditions of satisfaction. As evidenced in both case studies (see Tables 5.4 and 6.4), this intervention can reduce rework caused by vague or misunderstood requests, particularly in potentially contentious processes such as design clarifications and pay application approvals.

The findings also highlight that trust in project teams is domain-specific rather than absolute. Using the trust domains framework discussed in Section 2.9, and applied during the workshops, project leaders can diagnose where trust is lacking and target interventions accordingly. This allows for repairing trust in specific areas without undermining existing strengths, as seen in the cross-functional resolution between the owner finance team and contractor, as demonstrated in Section 6.5.2.

Embedding LAP principles into meeting facilitation practices transforms meetings from primarily informational exchanges into coordinated action sessions. By using explicit requests, negotiating commitments, and tracking fulfilment, meetings became a primary mechanism for advancing coordinated work, thereby reducing coordination waste as defined in Section 3.5.5.

The research also shows that LAP tools, such as conversations for possibility, can be used to surface and resolve misalignments in priorities between different firms, a critical factor in IPD-like environments where contractual relationships may not enforce collaboration. In both case studies, this approach improved cross-functional problem-solving and reduced the defensive posturing observed in pre-workshop conditions (Tables 5.3 and 6.2).

Finally, applying LAP principles during onboarding creates a shared language for commitments, decision-making, and trust-building across diverse organisations. As seen in the pre-workshop conditions (Sections 5.3 and 6.2), the lack of such a shared language contributed to early-phase coordination waste. Integrating the LAP into onboarding could accelerate new team member integration, reducing this waste and improving team cohesion from the outset.

By embedding these LAP-derived practices into lean project delivery systems, practitioners can achieve measurable improvements in how commitments are made, tracked, and fulfilled in complex construction environments. The result is not simply better communication in a generic sense, but a demonstrable shift toward trust-based, commitment-driven collaboration that enhances workflow reliability, reduces waste, and aligns with the foundational aims of lean construction.

The development of the framework in Chapter Eight makes a direct contribution to practice by offering project teams a structured and repeatable method for embedding the LAP into everyday project delivery. By positioning the new understanding of the LAP from Figure 2.3 at the centre of the framework, it provides practitioners with a clear process for implementing the LAP into projects through the development of LAP workshops. The framework translates the theoretical underpinnings of the LAP and the lessons from the case studies into actionable guidance for practitioners. In doing so, it equips project leaders and teams with practical strategies for fostering trust, strengthening accountability, and improving the coordination of commitments. This contribution extends beyond theory to provide a tangible resource for enhancing communication practices in construction projects, aligning team culture with lean construction and LAP principles while addressing persistent issues of mistrust, unreliable promises, and poor collaboration.

9.7 Contribution to Project Management Research Methodology

This study contributes meaningfully to the field of project management research by demonstrating how combining action research methods with a multiple case study methodology can produce insights that traditional observation-only-based methods are less equipped to reveal.

By actively engaging with project teams in real-world settings, this research moved beyond observation and into the realm of intervention, where new patterns of behaviour, communication, and coordination could emerge in response to structured facilitation. This methodological integration enhanced the study's rigour by grounding it in lived experiences while still offering the analytical structure needed to identify transferable insights.

The action research component allowed for dynamic participation with the project teams as they engaged with the LAP. Through facilitated workshops, participants did not merely describe the challenges they were facing; they actively experimented with new modes of speaking and listening, of making and negotiating promises, and of building trust. This participatory dynamic enabled the researcher to observe transformation as it happened. In contrast to retrospective or survey-based research methods, which often capture only perceptions or outcomes, this study captured the processes by which change was generated. It documented not just what the problems were, but how teams addressed those problems in real time, and what conditions allowed those improvements to take root.

Equally important was the use of multiple case studies, which enabled a comparative analysis of how different teams in different contexts responded to the same interventions. Although each case study involved distinct project types, contractual arrangements, and organisational dynamics, the research uncovered recurring patterns such as the breakdown of trust, the lack of clarity in requests, and the unreliability of commitments that cut across both settings. These cross-case consistencies strengthened the findings by suggesting that the observed issues were not isolated or incidental, but systemic within project environments that lack a shared language for action.

The research also brought forward a new way of thinking about project management, less as a system of plans and controls, and more as a network of conversations. From this perspective, outcomes are not simply the result of technical processes but are shaped by how effectively individuals and teams coordinate their actions through language. This conversational model of project management, drawn from the LAP, provides a lens through which complex human

dynamics such as trust, mood, and commitment can be understood as integral to project performance rather than peripheral to it.

The study also advanced the rigour of project management research by anchoring theory in practice, and by observing the live dynamics of change. The integration of action research methods and case study methodology enabled the exploration of context-specific phenomena while also identifying general themes, offering both depth and relevance. In doing so, the study contributes not only to academic knowledge but also to the ongoing evolution of project management as a discipline rooted in human coordination and shared commitments.

9.7 Research Limitations

While this thesis provides valuable insights into the impact of the LAP on improving communication, trust, and coordination within construction projects, several limitations must be acknowledged. Recognising these limitations helps contextualise the findings and offers direction for future research.

9.7.1. Limited Scope of Case Studies

The research draws conclusions based on two case studies, which, while providing in-depth insights, represent a narrow subset of the broader construction industry. Both case studies involved projects in the United States of America with distinct characteristics; one focused on healthcare construction, and the other focused on pharmaceutical facilities. As a result, the findings may not fully capture the nuances of other sectors or cultural contexts. The small sample size limits the generalizability of the results across different types of construction projects and geographical regions.

9.7.2 Short-Term Evaluation of Impact

The study assessed the impact of the LAP workshops through pre- and post-workshop evaluations over a limited period as a cross-sectional study and was not longitudinal by design. While the workshops demonstrated immediate improvements in communication, trust, and commitment management, the long-term sustainability of these improvements remains to be determined. A more extended observation period would provide greater insight into how well

these practices are maintained and whether the benefits are sustained throughout the project lifecycle.

9.7.3 Participant Bias and Engagement Levels

The success of the LAP workshops relies heavily on the active participation and openness of the participants. In both case studies, some participants entered the workshops with varying scepticism or discomfort, which may have influenced their engagement and learning outcomes. Moreover, attendance was limited to selected project team members, and the exclusion of some team members may have restricted the full impact of the interventions.

9.7.4 Environmental and Contextual Constraints

External factors, such as the physical environment and organisational dynamics, posed challenges during the workshops. Participants reported discomfort with environmental conditions, including room temperature and noise distractions, which may have affected their focus and engagement. Additionally, pre-existing organisational tensions, such as conflicts between teams and misaligned objectives, while providing a rich background for the workshop conversations, presented obstacles that needed to be resolved during the workshops, limiting the immediate effectiveness of the LAP interventions.

9.7.5 Reliance on Self-Reported Data

The research relied heavily on self-reported data from interviews, surveys, and workshop feedback to assess changes in communication and trust levels. While these methods provided valuable qualitative insights, they are inherently subjective and susceptible to biases such as social desirability or participants' desire to present the workshops in a positive light. The absence of more objective metrics, such as project performance data or external evaluations, limits the ability to rigorously quantify the impact of the LAP interventions.

9.7.6 Challenges of Embedding LAP into Daily Practices

Although the workshops successfully introduced the LAP principles, embedding these practices into the teams' daily routines was not evaluated. Some participants may have reverted to previous communication habits, especially under pressure to meet project deadlines. This

limitation reflects the difficulty of sustaining behavioural change in dynamic project environments without continued support, follow-up, or leadership reinforcement.

9.7.7 Context-Specific Challenges of Lean Integration

The research aimed to explore the synergies between the LAP and lean construction methodologies, yet the practical integration of these two frameworks was challenging. Both case studies revealed obstacles to adopting lean practices, such as fragmented communication between stakeholders and the poor management of promises. In addition, the research was not conducted with any specific lean tools but focused on a team's foundational communication practices. This impact on the lean tools and methods adopted by the project team was not measured.

9.8 Recommendations for Further Research

Given the limitations identified in this study, several areas for future research have been highlighted. Expanding the scope and depth of investigations into the LAP within construction project management can help address the gaps identified and further enhance the applicability and effectiveness of the LAP in real-world contexts. The following recommendations outline directions for future research.

9.8.1 Expand the Scope Across Different Sectors and Regions

The current research is limited to two case studies in the healthcare and pharmaceutical sectors within the United States of America. To improve the generalizability of the findings, future research should examine the LAP's impact across a wider variety of construction projects, including infrastructure, residential, and commercial developments. Additionally, conducting studies in diverse cultural and geographical contexts can provide insights into how regional factors influence the effectiveness of the LAP in other project environments and sectors.

9.8.2 Longitudinal Studies to Assess Sustainability of LAP Practices

This research offers valuable insights into the immediate impact of LAP interventions but needs long-term data on the sustainability of improvements. Future studies should adopt longitudinal designs, following project teams throughout the entire project lifecycle and even into subsequent

projects. This approach would provide a deeper understanding of whether the behavioural changes introduced through the LAP are maintained over time and how they affect long-term project performance.

9.8.3 Broaden Participation Selection

The involvement of only select team members limited the potential impact of the LAP workshops. Future research should explore senior leadership's and other stakeholders' involvement in LAP interventions, such as clients, trade partners, and suppliers. A broader focus would assess how integrating the LAP practices at all levels of the project hierarchy influences communication and commitment across the entire network of stakeholders.

9.8.4 Develop Objective Metrics for Evaluating the LAP Impact

While this study relied on qualitative methods such as interviews, surveys, and self-reported data, future research should incorporate quantitative metrics to assess the impact of LAP interventions more rigorously. This could include tracking improvements in key performance indicators such as project timelines, budget adherence, rework levels, or customer satisfaction, providing more objective evidence of the LAP's effectiveness. There is also a need for more exhaustive quantitative testing across a larger sample size of projects. This would give more statistical significance to patterns and interrelationships from the relatively small sample size examined in this study.

9.8.5 Investigate Strategies for Embedding LAP into Daily Practices

This research revealed challenges in sustaining LAP practices within dynamic project environments. Further research is needed to explore practical strategies for embedding LAP principles into daily routines, such as developing follow-up programs, coaching sessions, or digital tools to support LAP-based communication. Investigating how continuous learning and reinforcement can maintain behavioural changes would also offer practical insights for project managers and team leaders.

9.8.6 Explore Deeper Integration with Lean Construction

Integrating the LAP with lean construction principles offers significant potential but also reveals challenges related to resistance to change and misaligned communication. Future studies should examine how the LAP can better align with lean tools like the LSP, TVD, IPD and visual management. Research could focus on how these frameworks can complement each other to enhance collaboration, reduce waste, and increase commitment reliability. Research could also focus on how the LAP can increase psychological safety within project teams.

9.8.7 Examine the Role of Digital Communication Tools in LAP Deployment

With the increasing reliance on digital tools in construction projects, future research should investigate how LAP principles can be applied within virtual and hybrid communication environments. Understanding how digital platforms affect speech acts, trust-building, and reliable promises would offer new insights into adapting the LAP to modern, distributed project teams.

9.8.8 Synergies between the LAP and Artificial Intelligence Prompts

The LAP offers a promising framework for improving how users interact with AI systems like ChatGPT by emphasizing the performative nature of language through the use of speech acts such as promises, requests, and declarations. By designing prompts that explicitly reflect these speech acts, it is possible that users can potentially generate more precise and contextually aligned AI responses. Future research could explore how integrating LAP principles into prompt engineering or AI training might enhance the adoption of the LAP in lean construction teams, especially in environments using a commitment-based communication approach.

9.9 Summary

This conclusion chapter synthesises the key findings, contributions, limitations, and recommendations from this research on the LAP in construction project management. The study explored how the LAP, through structured communication practices, improves collaboration, trust, and team performance. Two in-depth case studies demonstrated the practical impact of the LAP principles on reducing misunderstandings, fostering accountability, and aligning project actions with goals. These insights revealed that the LAP provides a robust framework, as

developed in Chapter Eight, for overcoming communication challenges in construction project environments.

The thesis contributes to practice and knowledge by extending the LAP beyond its traditional applications and integrating it with lean construction principles. The research highlights that trust is a multi-domain construct providing new ways for project teams to assess and repair trust breakdowns. The findings also emphasise the importance of action-oriented conversations in enhancing meeting effectiveness and reducing coordination waste, directly supporting lean construction goals.

However, the research faced several limitations, such as the narrow scope of the case studies, short-term evaluations, and reliance on qualitative data, which constrain the generalizability and long-term assessment of the findings. Additionally, challenges in embedding LAP into daily practices and aligning it seamlessly with lean methodologies underscore the need for further investigation.

This thesis demonstrates that the LAP offers a transformative approach to improving communication, trust, and accountability in construction project teams. Its integration with lean construction principles provides a pathway to more effective project delivery. While further research is needed to address the identified limitations, this study lays the foundation for the LAP to become a critical component of project management practices, enhancing collaboration and performance in complex, dynamic environments.

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Appendices

Appendix 1.1: LAP Workshop Observation Template

LAP Workshop Observation Template

Date: *[Enter the date of the observation]*

Observer: *[Enter your name or initials]*

Subject: *[Describe the program/event being observed]*

Context: *[Provide a brief description of the observation setting and any relevant background information]*

Number of people in attendance: *[Enter the number of people attending the event]*

Observation

Environment: *[Note down the environmental factors that may influence the observation. For example, noise level, lighting conditions, temperature, etc.]*

Interactions: *[Record any interactions between the subject and other individuals or objects. Note the nature of these interactions and any noteworthy details.]*

Emotional response: *[Document any emotional responses observed, including everyone involved. Describe facial expressions, body language, and verbal cues if applicable.]*

Patterns or themes: *[Identify recurring patterns, themes, or trends that emerge during the observation. Note similarities or consistencies that may be relevant.]*

Notable quotes: [Record any significant statements or quotes from participants.]

Reflections: [Take a moment to reflect on the observation and note any personal insights, questions, or hypotheses that arise from the data collected.]

Additional observations: [Include any additional observations or details not captured in the previous sections but relevant to the overall observation.)

Concluding remarks: [Write a brief summary or conclusion based on the observation. Highlight any key findings or observations that stood out during the process.]

Signs of engagement

Active participation: (Observing attendees actively participating in discussions, asking questions, or sharing their thoughts and ideas during the program.

Interactions and conversations: Noticing attendees engaging in discussions with each other or the facilitators)

Body language: (Observing positive body language such as nodding, leaning forward, making eye contact, or showing attentive postures, indicating that participants are actively listening and interested in the program.)

Asking for further resources: (Attendees expressing interest in obtaining more information or resources related to the program's topic by asking for book recommendations, requesting specific materials, or seeking guidance on further learning opportunities.)

Collaboration and networking: (Witnessing participants engaging in collaborative activities, group discussions, or networking with each other, indicating a desire to connect with like-minded individuals or build relationships.)

Expressions of appreciation: (Receiving positive feedback, expressions of gratitude, or testimonials from participants, either during or after the program, indicating that they found value in the experience and felt engaged.)

Appendix 1.2: Pre-Workshop Interview Question Template

Introduction

- Explain to workshop participants why we are here and what we are doing.

Background

- Tell me about yourself and your career.

Role

- What is your role on the project?
- What are you paying attention to in your work?

Connections

- Who do you interface most in your work?
- How do you get work done?

Concerns about project

- What are you concerned about regarding the project?
- How would you describe the quality of communication on this project?
- Are you being listened to?
- When people ask you to do things, is it clear what you are being asked to do?
- Do people make promises on this project? Do you? Are those promises kept?
- How would you describe the trust in this project?
- Are meetings effective?

Conclusion

- Is there anything else you would like to share?
- Is there something we haven't asked about that we should know?

Appendix 1.3 Post-Workshop Interview Questions Template

Post Workshop Interview Questions

Introduction

- Explain to workshop participants why we are here and what we are doing.

Background

- In general, how did the workshops go for you?
- What did you learn?

Role

- Do you see your role differently after the workshops?
- What are you paying attention to in your work? Is that different from before the workshops?

Connections

- Who do you interface most in your work? Has that relationship improved after the workshop?
- How do you get work done? Is that different from before the workshop?

Concerns about project

- What are you now concerned about regarding the project? How did the workshop change this?
- How would you describe the quality of communication on this project after the workshop?
- Are you being listened to? Are you a better listener?
- When people ask you to do things, is it clear what you are being asked to do? Has that improved after the workshop?
- Do people make promises on this project? Do you? Are those promises kept? How has the workshop changed that?
- How would you describe the trust in this project? Has it improved or gone down since the workshop? Why?
- Are meetings more effective now?

Conclusion

- Is there anything else you would like to share?
- Is there something we haven't asked about that we should know?

Appendix 1.4 Pre and Post Workshop Survey Questions

Pre and Post Workshop Survey Questions

On a scale of 1-5 with 5 being the highest and 1 being the lowest rate, the following statements:

1. How would you rate the level of trust within the team?
2. How would you rate the quality of communication within the team?
3. How would you rate the reliability of promises made by the team?
4. How would you rate the clarity of requests within the team?
5. How would you rate the meeting's effectiveness on the project?