From learning to action: exploring barriers and strategies for embedding lessons learned through a social learning lens.

OSOBAJO, O.A., LAWANI, A., OKE, A., KAMUDYARIWA, X.B. and ADEBAYO, Y.

2025

From learning to action: Exploring barriers and strategies for embedding lessons learned through a social learning lens

Abstract

Purpose

Considering the increasing rate of project failure, the importance of lessons learned in achieving project success cannot be overestimated and the question of whether organizations and project teams learn lessons remains unaddressed. Besides, there is no clarity on how project-based organizations learn lessons and implement lessons learned, including barriers and challenges. Using a Social Learning perspective, this study explores how project-based organizations can capture lessons and embed them, including the implementation barriers.

Design/methodology/approach

To answer the research question, the study adopted a qualitative research design to explore the perceptions and experiences of project practitioners. Semi-structured interviews were conducted to uncover individual project practitioners' views and opinions about lessons learned in the project environment to facilitate project success.

Findings

The findings indicate that effective application of lessons learned and knowledge sharing significantly enhance project success by fostering a culture of collective learning and continuous improvement. The key barriers identified are misinterpretation of lessons learned, lack of mentoring, knowledge hiding, non-participation from relevant stakeholders, and lack of a collaborative environment.

Originality/value

The study utilized SLT as a novel approach to understanding the barriers to learning in projects and how lessons learned can be acquired, disseminated, and utilized among project team members.

Keywords: Knowledge management; project; project management; lessons learned; project success; project life cycle.

1. Introduction

Project-based organizations (PBOs) increasingly focus on 'Lessons Learned' to avoid repeating the mistakes that hinder performance (Rhodes and Dawson, 2013). The concept of lessons learned is vital in project management and recognized as fundamental to quality assurance, knowledge management, and maturation of project management practices (Murray-Webster and Dalcher, 2019). For effective lessons learned and knowledge management, the Project Management Institute (PMI) and the Association for Project Managers (APM) emphasized the need for a gate review, a control point where go or no-go decisions are made as projects move through stages. During this process, knowledge of what went according to plan, areas that require improvement, and plans to address problems are identified before moving on to the next project phase (Jugdev, 2012), providing project teams with an opportunity to learn lessons (Rhodes and Dawson, 2013). In project management, learning from previous projects and implementing the learning effectively on future projects is difficult to achieve. For many project-based organizations (PBOs), learning from projects has been an ongoing issue as the process and/or framework to transfer learning from one project to another is lacking (William, 2008; Carrillo et al., 2013).

While projects are termed unique and rarely identical, the repetitive process and the project management approach, including tools and techniques, in managing projects provide platforms for learning (Carrillo et al., 2013). This creates an opportunity for knowledge sharing among project team members and embedding knowledge within organizations. Individual knowledge in the form of tacit knowledge within a project can be captured and documented as explicit knowledge for PBOs (Osobajo and Bjeirmi, 2021). The process of learning is complex; however, organizations can utilize/exploit knowledge gained from project delivery if it is effectively captured through lessons learned (Duffield and Whitty, 2015; Ononuju et al., 2019). Project practitioners, especially in PBOs, recognize the importance of capturing lessons to avoid costly project errors by embracing best practices with time- and/or money-saving potential (Ononuju et al., 2019; Aisheh, 2021). If documented, project experiences are of business relevance for PBOs (Mainga, 2017), providing project managers and project team members with an opportunity to learn from the actual experiences of others while fostering the organization's commitment to project management excellence.

While lessons learned is attracting increasing attention from project practitioners, Paver and Duffield (2019) referred to lessons learned as the 'elephant in the room' that requires further discussion and research. This argument supports earlier studies that reported discontent and dissatisfaction among project practitioners with the process of learning lessons (Klakegg, 2010). One obvious explanation is that lessons were identified but not acted upon and embedded into the organization's culture and practices (Hubert, 2012). Although many PBOs engage in some form of lessons learned, investing in this process can yield little or no visible benefits (McClory et al., 2017) due to the lack of implementation (Hubert, 2012). With projects failing to achieve stakeholders' expectations (Aisheh, 2021), the perception that lessons learned contribute to project success is questionable. Nonetheless, research has focused on how organizations can better capture and implement lessons learned to drive change and

improvement (Carrillo et al., 2013; Ononuju et al., 2019; Aisheh, 2021). Studies have attempted to explain the constraints to capturing and implementing lessons learned in projects to achieve project success (Carrillo et al., 2013; Ononuju et al., 2019); however, knowledge of the difficulties experienced by PBOs in adopting lessons learned and how to capture and embed is fragmented in project management research (Hubert, 2012).

Therefore, this study explores lessons learned in project management to identify barriers and how PBOs apply lessons learned to facilitate project success. Based on the views of project practitioners and the Social Learning Theory (SLT) lens, this study demonstrates how lessons can be captured and embedded within organizations. SLT provides a unique theoretical lens to explore behavioral issues in projects regarding knowledge capturing, information sharing, and communication behavior. In this study, social learning is perceived as a process of social interactions and open communication for knowledge creation and sharing among project practitioners within and across PBOs (Reed et al., 2010).

This study, therefore, expands the existing knowledge and offers guidelines to project practitioners on how lessons learned can contribute to project success, including ways to integrate them into an organization's project practice. The study aims to answer two questions:

1. What are the barriers to implementing lessons learned and their impact on project success?
2. How can lessons learned be captured and embedded for knowledge creation to drive project success?

Identifying the barriers to embedding lessons learned, from a behavioural perspective will help deepen our understanding of why organizations often struggle to institutionalize knowledge gained from past experiences despite the recognized value of such practices. Understanding

these barriers will contribute to the ongoing efforts to develop a learning framework and a systematic learning process in project management (Argote and Miron-Spektor, 2011).

The rest of the paper is organised as follows - Section 2 presents a literature review of existing research on lessons learned and the theoretical background guiding the study. The research method employed for this study is described in Section 3, followed by the study's findings and discussion in Sections 4 and 5 respectively. Lastly, the study's implications, limitations and areas for future research are highlighted in Section 6.

2. Literature Review and theoretical underpinning

2.1 Organizational Learning Process

Organizations learn regardless of whether there is a formal and systematic or informal and unstructured learning process within the organization. In an organization, learning happens through modification of the organization's knowledge resulting from its experience (Madsen and Desai, 2010). While learning does not necessarily translate to the effective functioning of an organization, organizational learning explains how people and organizations learn by reflecting on the consequences of their actions (Iftikhar et al., 2022; Rupčić, 2018).

Nonetheless, evidence shows that learning occurs at individual, organizational and inter-organizational levels (Rupčić, 2018). Learning at the individual level occurs experientially and involves pattern recognition from past actions and events (Iftikhar et al., 2022). Learning at the organizational level is complemented by individual learning and facilitated through the process of intuiting, interpreting, integrating, and institutionalizing learning (Wiewiora et al., 2020). While individual and organizational learning can occur within an organization, both forms of learning can also occur across organizations and sectors, particularly in project management.

Learning occurs at multiple levels within an organization, underscoring the role of individuals and the social context of learning (Duffield and Whitty, 2016). An organization's learning evolves through the behavior and learning of its people which involves conscious interaction due to experience, interrelationships and task implementation to foster knowledge acquisition by providing access to different perspectives and opinions (Todorava et al., 2014). Organizations learn from their members or by ingesting new members with the knowledge they seek, emphasising the importance of the people factor (i.e., project team members) in the learning process (Duffield and Whitty, 2016). The interconnectivity of a learning process with the opportunity for knowledge sharing shows that learning in this respect is instrumental in improving project performance and practices of individuals and organizations.

Lessons are learned throughout the project lifecycle and provide opportunities for knowledge creation and dissemination to foster continuous improvements. The knowledge created must be documented and agreed upon through the organizational knowledge management system, giving it business relevance for future projects (Mainga, 2017; Carrillo et al., 2013). Lessons learned are highly desirable for projects and project organizations (Ononuju et al., 2019) when turned into knowledge that can be shared for the group's benefit because they contribute to the organization’s development by reducing potential failures and reinforcing positive results (Carrillo et al., 2013). When identified, documented, and communicated, lessons are invaluable organizational assets and aid organizations in decision-making and knowledge creation (Project Management Institute, 2017). This formal approach ensures that project members continually learn from projects.

Project failure has been linked to the project teams’ inability to learn lessons and share knowledge (Duffield and Whitty, 2015). Capturing lessons learned helps with understanding what went right, what went wrong and what needs to be improved, implying the importance of

identifying both failures and successes during project delivery. Positive experiences tend to be the primary focus over negative ones as they are perceived to be personal and emotional to discuss. This may be due to the concerns of losing relevance, which may delay and/or undermine the learning process (McCann and Buckner, 2004; Wu and Lin, 2013). A delay in capturing lessons and/or inability to capture lessons negatively impact learning quality with negative consequences on individual, project, and organizational performance (Pemsel and Wiewiora, 2013).

Understanding the culture of an organization is essential before engaging in lessons-learned processes because culture plays an important role in learning and the determination of learning mechanisms (Williams, 2008). However, Duffield and Whitty (2015) highlighted a lack of a monitoring system for learning among team members, limiting organizations' ability to identify and share lessons. Factors, such as process, project team reluctance, workload duplication, the perceived value of lessons, internal competition and legal issues have been identified as obstacles to capturing lessons (Carrillo et al., 2013). With people being reluctant to admit failures, obtaining information on lessons learned during meetings and workshops can be challenging. Similarly, lack of time, clear guidelines, resources and management support were reported as the main barriers to lessons learned (Shokri-Ghasabeh and Chileshe, 2014).

While lessons can be instrumental in improving future projects and project management practices, the challenges of adequately capturing and implementing lessons learned suggest the need for further investigation (Carrillo et al., 2013). Organizations can take advantage of best work practices, mirror innovative approaches in project management, and avoid repeating the same errors when experience gained through lessons learned is communicated and shared in subsequent projects. The process of communicating learning fosters social interactions among project team members (Argote and Miron-Spektor, 2011). Despite the recognition that

learnings occurring in projects are transferred to the organization in the form of knowledge (McClory et al., 2017), in practice, organizational learning from projects rarely happens, and when it does, it fails to deliver the intended results (Klakegg et al., 2010).

2.2 Project Success

Project managers are responsible for delivering projects within budget, on time and with the required functions and features (Sanchez and Terlizzi, 2017) all of which are important aspects in defining the project's overall success. The concept of project success has evolved over the years and has been defined in several ways. One of the earliest frameworks used to describe success is Slevin and Pinto's (1986) diagnostic behavioral instrument, in which 10 project success factors were identified from a survey of project managers. The framework categorizes 10 success factors into strategic (mission, top management support, project schedule/plans) and tactical (client consultation, personnel, technical tasks, client acceptance, monitoring and feedback, communication, and troubleshooting) subgroups and mapping them to the project life cycle. Shenhar et al. (1997) expanded this view by identifying four dimensions of success, which include project efficiency, impact on customers, business success and preparing for the future. However, the narrow view of defining success as a measure of time, cost and quality/scope and argued that project success comprises extensive objectives from the standpoint of stakeholders throughout the project life cycle was refuted. This was supported by Volden and Welde (2022) who argue that project success should be considered from a more extensive view which consists of three levels of success (operational, tactical and strategic).

A common thread in these studies is the reasoning that the established project management success is not a comprehensive measure of a project's true success. However, Serrador and Turner (2015) revealed that meeting time, scope and budget goals (project management success or project efficiency) constitutes project success. This supports the explanation of project

success as an integrated concept with long- and short-term implications. Accordingly, Pinto et al. (2022) indicated that project success should be measured as a project's life extension, measuring project success as a stakeholders/benefit extension, and expanding the definition of project success due to the context.

2.3 Social learning theory

Social Learning Theory (SLT) aligns with several other related ideas such as knowing in practice (Cook and Brown, 1999), situated learning (Lave and Wenger, 1991) and community of practice (Brown and Duguid, 1991). The concept articulates learning as a continuous social accomplishment that develops due to the interaction among individuals in the course of their daily activities as opposed to something that occurs in the human mind. According to Bandura (1977), social learning is an individual learning process through the imitation of a role model that takes place in a social context and is influenced by social norms. While this notion emphasizes learning occurring at an individual level within a social context, Reed et al. (2010) reported that the lack of conceptual clarity about the theory makes it challenging to establish whether true learning occurs and how it occurs, including its impacts. While Reed et al. (2010) identified three fundamental issues regarding how social learning is defined in the literature, those issues are considered irrelevant in this study. This is so because this study considers the project environment as a social context and explores processes of learning in projects and their outcomes as perceived by project stakeholders. As a result, this study perceives social learning as a learning process through interaction between project stakeholders within the same social contexts, networks, and/or a community of practices (Reed et al., 2010). By implication, learning occurs if there are observable changes in an individual's understanding of the community, their relationship to it, and future actions.

According to Bandura (1986), SLT has three underlying elements: personal, behavioural, and environmental. These elements are perceived to be interconnected in influencing behavior and learning among individuals. Personal elements comprise individual cognitive abilities, attitudes, and perceptions that can enhance motivation and persistence in learning. This includes self-efficacy (the belief in one's ability to carry out a certain task) in learning, which is reported to have an impact on a person's motivation and achievements. Schunk and DiBenedetto (2016) recounted individual resilience and active engagement in people who have confidence in their abilities. Although early descriptions of SL focused on self-efficacy as the main cognitive element shaping behavior, other cognitions such as attributions, anticipated consequences, and values have been associated with effective learning behaviors (Schunk and DiBenedetto, 2020).

Behavioural elements refer to individual observable and measurable actions and reactions. Individuals learn by observing the experiences of others and are likely to imitate behavior that is being rewarded (Bandura, 1986). It was found that individuals are likely to replicate their peers' behavior since observation is crucial in learning (Schunk and Zimmerman, 2012). However, for behavioral learning to be effective, it is important to implement appropriate feedback mechanisms and remove institutional barriers constraining social learning (Reed et al., 2010).

Environmental elements are the physical and social context where learning occurs, which is important in creating an enabling context for individual observation (Bandura, 2001). These elements also define the space where activities and interactions occur, which could positively or negatively influence behavior. While the lack of an inclusive and supportive environment can limit learning (Salomon and Perkins, 1998), a setting that fosters individual collaboration, interaction, and engagement would produce a positive impact (Giannetto et al., 2013). SLT has

been conceptualized as an intentional process of dialogue and interaction among stakeholders (Fernandez-Gimenez et al., 2008) and the process of developing relational capacities through understanding and collaborating.

Learning thus occurs through a triadic relationship consisting of individual cognitive abilities, observable actions and reactions, and the social context meaning any intervention to enhance learning must consider the three elements holistically. For learning to occur, individual participation is essential, fostered using collective knowledge and actions through combined formal and/or informal social networks (Deville, 2012). Organizations foster reflective learning through the active participation of individuals, which directly impacts organizational learning and communities of practice. Studies have reported that collective learning produces better results than individual learning (Surowiecki, 2004), suggesting the need for PBOs to create an environment of learning that drives project success. This study expands this idea by exploring the barriers to learning from past projects and discussing effective strategies for capturing and embedding lessons learned using SLT.

3. Methods

The investigation adopted a qualitative research design as it allows researchers to speak with participants to understand and capture their views, actions and motivations in detail (Myers, 2019). Qualitative research was also preferred due to the exploratory nature of this study, providing the opportunity to explore the perceptions and experiences (Hennink et al., 2020) of project practitioners more extensively. Individual project practitioners from different industries with over four years of professional experience in managing projects were purposively chosen for the study.

3.1 Data collection

Data collection for the study was guided by two research questions relating to: the barriers to implementing lessons learned, and how lessons learned can be captured for knowledge creation to drive project success. To answer the research questions, semi-structured interviews were adopted for data collection to uncover project practitioners' views and opinions about the practice and use of lessons learned to facilitate project success. The interview format allowed for the collection of rich information while probing participants' experiences and views on the subject. Adopting semi-structured interviews provides the flexibility to explore individual participants' personal experiences in their social context consistent with Bandura's (1977) SLT that learning occurs in a social context. This method provided a deep-dive approach to uncovering research participants' lived experiences (Kallio et al., 2016), which the SLT emphasizes as important in understanding the social interactions and shared experiences in the learning process (Bandura, 2001).

A total of 15 research participants with extensive involvement and engagement in project activities were interviewed. The number of interviews conducted was not predetermined, instead, recruitment continued until there was sufficient information to answer the research questions with no new information being generated (Bowen, 2008). Recruitment took place between May and August 2023 through the Association for Project Management and Project Management Institute local branches. The research participants were project managers, senior project managers and project directors involved in managing projects. Each participant was interviewed individually; the average length was just over 60 minutes.

3.2 Data analysis

In this study, we adopted an analytical framework (Figure 1) for data processing and data analysis (Creswell 2014). This approach allows interview transcripts to be categorized based on themes pertinent to the research questions (Merriam and Tisdell, 2015). The data analysis

process was facilitated using NVivo 12, a qualitative data analysis software package for in-depth thematic analysis (Clarke and Braun, 2017) and to capture key themes from the transcripts.

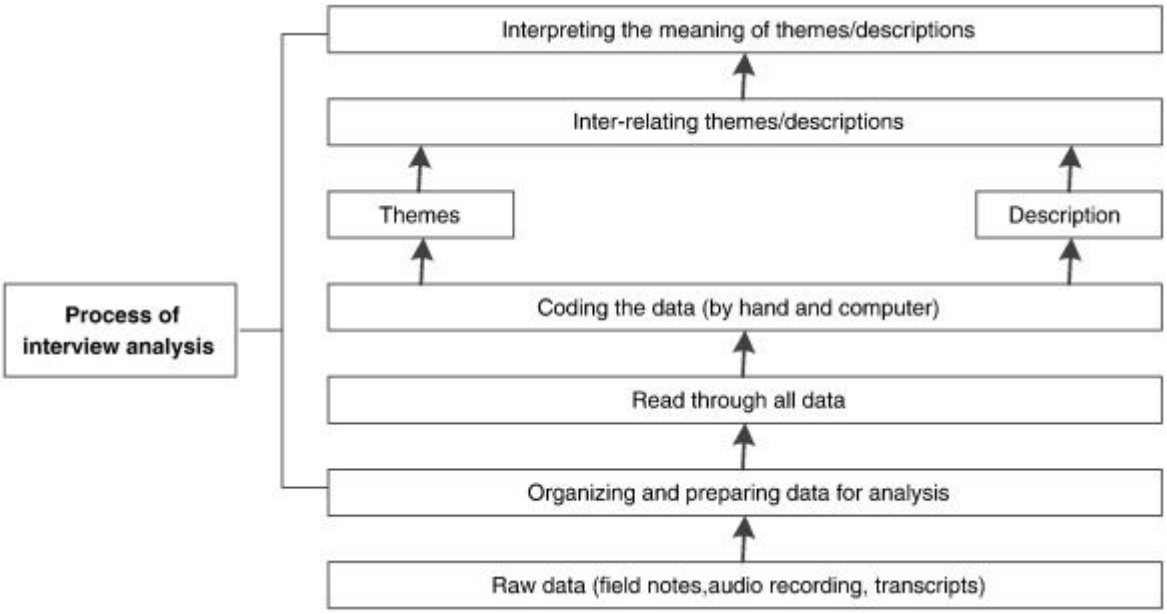

Figure 1: Interview analysis of the study.

Thematic analysis as used in this study is consistent with Naeem et al. (2023) and Braun and Clarke (2006) and allows for a systematic and structured way of identifying patterns in the data set and interpreting them for their inherent meaning (Naeem et al., 2023). The thematic analysis method allows for an inductive approach and the emergence of themes and codes relevant to the research questions. This provides an opportunity to relate the generated codes with the research questions and then classify them through an iterative thinking process, moving back and forth as required while reflecting on the relevant literature (Xu and Zammit, 2020). The codes became the building blocks to the development of themes reflecting the individual, observable actions and the contextual factors underlying SLT.

4. Results

4.1 Participants' Experiences and Perceptions

The results show that all the research participants are project managers (8), senior project managers (4), and project directors (3) with extensive work experience ranging from 4 to over 30 years. The results further show that the research participants have attained undergraduate (6) and postgraduate (9) qualifications, are members of project management professional bodies, and possess certification and/or advanced training in project management, suggesting their practical competency and expertise in tools and methodologies for project performance and optimization (Morris, 2013). This is consistent with Crawford's (2005) argument that experience is a fundamental indicator of professional competence and success in project management, as the length of time spent managing projects contributes to a practitioner's ability to foresee challenges and respond effectively.

The next section reports the analysis of 15 project professionals' experiences and perceptions regarding lessons learned in a project management context. From the analysis, the most common criteria in capturing lessons and translating them into action are what we broadly classified into three dimensions: individual, behavioural, and contextual (Figure 2).

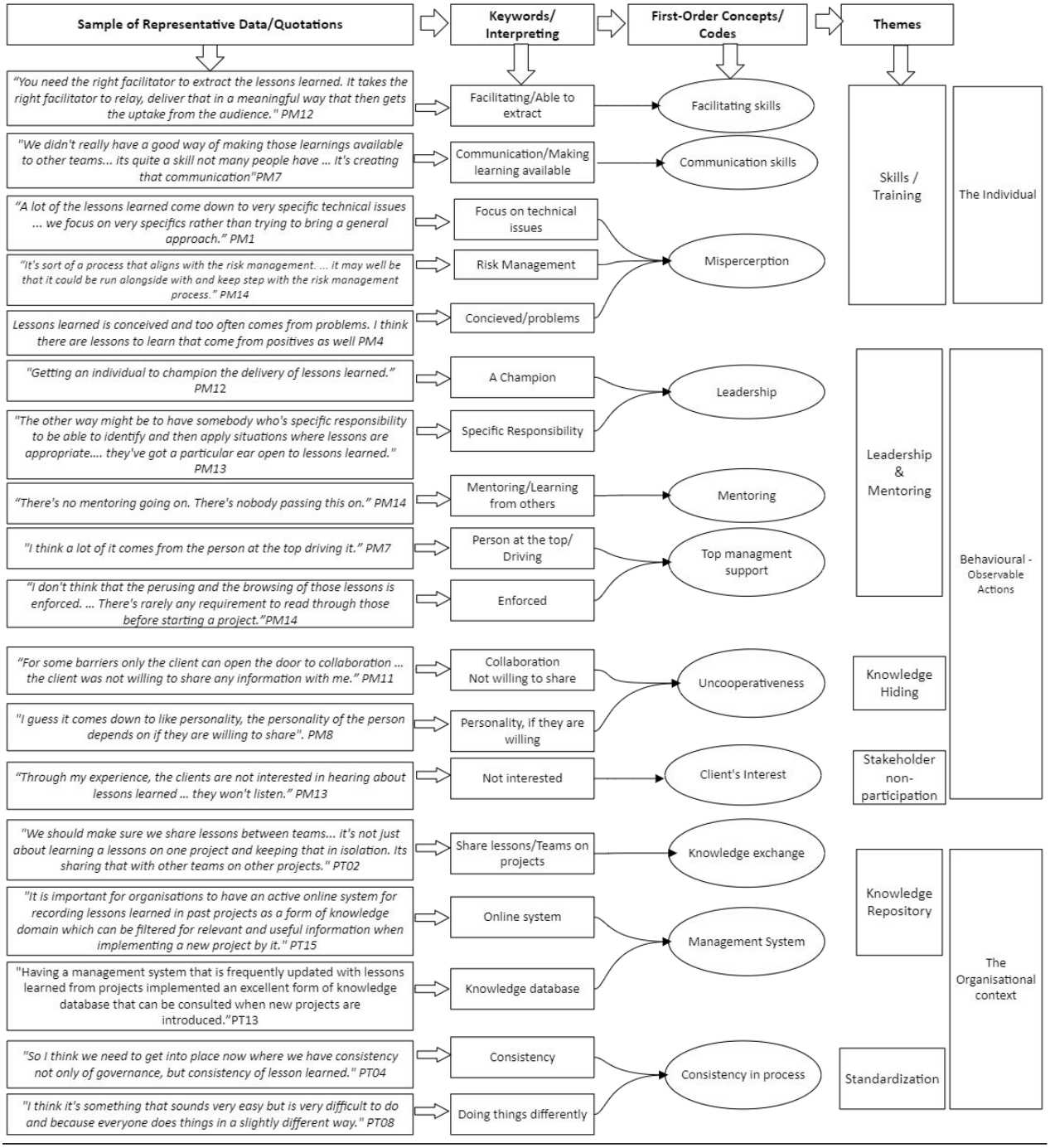

Figure 2: Thematic analysis results

These dimensions explain personal and institutional criteria, including barriers and facilitators, for capturing and implementing lessons learned in a project management environment. While the individual dimension is personal to actors and captures people's perceptions of lessons learned and skills/training, the behavioral dimension explains managerial support in the form of leadership/mentoring, knowledge sharing/hiding, and the reluctance of stakeholders to

engage/participate. The contextual dimension is very important and highlights institutional processes and systems installed by organizations for capturing lessons and embedding lessons learned. While the contextual dimension involves knowledge repository and standardization, it underpins the other two dimensions and demonstrates an environment where people can nurture their skills and collaborate effectively to achieve project success. Using the research questions, these three dimensions are further discussed below to understand the barriers to implementing lessons learned and how lessons are captured/embedded.

4.2 Individual Dimension

4.2.1 *Misperception of Lessons Learned*

Many participants were quick to refer to risk management when discussing lessons learned. At the core of risk management is identifying what could go wrong, evaluating the range of risk responses and deciding the most appropriate action (Hopkin, 2018). For many, risk management could not be separated from lessons learned as it is a central aspect of the process.

Participant PM9 stated, *"To have a good risk management in your project you need to have experience in lessons learned and that's where we introduce lessons learned and risk management."*

This limited conceptualisation of lessons learned suggests that even when captured, lessons learned tend to be only decoded in the risk register, as reported by PM7 - *"I try to take the lessons learned and we then typically translate them into the risk register."*

It was also noted that lessons learned were predominantly considered where technical issues occurred meaning most review processes were with the technical team. Participant PM5 mentioned *"You would formally capture all the lessons learned with a technical group…"*

Some responses suggested that only technical problems were reflected upon. For instance, PM6 stated, *"The lessons we learn, naturally are technical lessons"*.

Another barrier to lessons learned resulting in difficulty gathering information comes about when project practitioners conceive lessons learned as something negative. According to Participant PM4, *"Lessons learned is conceived and too often comes from problems."* This can reduce their efficacy as teams try to prevent getting a reputation for doing things wrong. This view ignores the fact that negative lessons learned are useful in enhancing future project performance and in supporting key project decisions (Paver and Duffield 2019).

4.2.2 Facilitation and communication skills

Facilitation skills are important in two ways; the ability to extract information from relevant individuals and the ability to filter and extract relevant information to share with those engaged in lessons learned. The former can be accomplished formally or informally with the express purpose of enabling individuals to open up and share relevant information. As noted by participant PM6, "*actually what needs to be done is somebody to come in and set up a 10 min conversation*". These conversations are a start in generating useful information for lessons learned. The latter skill involves working with the provided data as noted by PM14 "*the output from [workshops] those are analysed and sorted and filtered, and then they are normally either put into some sort of database or they are passed selectively or made selectively available for other project teams within the organization to learn them*". It is necessary to have an individual with the skills to determine what information will be most useful to the project and then communicate it to the team.

It is important to note that facilitation can be a multifaceted and complicated role. Facilitators who can be referred to as knowledge brokers require immense skills to communicate the

necessary information and enable its best dissemination (Tokede et al., 2022). This was also emphasised by PM12 who observed "*You can identify where things can be improved but the challenge is taking that and translating it and delivering it to an audience. It takes the right facilitator to relay and deliver that in a meaningful way that then gets the uptake from the audience*". When recipients of lessons learned can relate to the facilitator, it makes the process of absorbing these lessons easier as further noted by PM12 "*It comes back to the same, the right facilitator delivering the same message to all stakeholders*".

Communication is a fundamental aspect of lessons learned as noted by Carrillo et al. (2013). Participants agreed on this with PM4 noting "*going through a project you have to communicate all the time. Tell them where you are, what stage you're at… to me, communication is number one*" while PM5 iterated how "*communication is key to success*". There are various stages in the project where communicating lessons learned can best benefit the lessons learned process. One aspect of communication skills involves being cognisant of the best point to communicate lessons learned in a project for them to be most effective. PM14 noted a couple of these "*So there are points within the project where you formally have a point where you learn lessons. So, these are normally at the end of a stage… or where you have an incident*". A further observation was made on the simplicity of communication possible at any point in the project with PM14 referring to it as "*the sort of natural communication way where somebody is talking to their colleagues about a project and saying oh, we made a mistake here*".

PM12 further highlighted that the communication process can also play a role in project outcomes by stating that "*creating that communication, extracting lessons learned and distributing them actually facilitates project success*". Through effective communication lessons learned can positively impact the outcome of a project.

4.3 Behavioural Dimension

4.3.1 A lack of mentoring and top management support

Mentoring, the process of training or advising, is an interactive, trusted and committed relationship between a more experienced person and one with less experience where the former shares their skills, knowledge and experience through observation and interaction (Atkisson, 2022) with the latter. Participant PM14 reported limited passing on information, suggesting knowledge was not being transferred. "*There's no mentoring going on. There's nobody passing this on*." PM14

With regards to top or senior management support, it was shown that project management-related activities tend to be positively influenced by support from top management. Participant PM7 states *"It will be interesting to see if that changes in the project culture within Company A…. I think a lot of it comes from the person at the top driving it."* In the same vein, another participant concurred "*I don't think that the perusing and the browsing of those lessons is enforced. ... There's rarely any requirement to read through those before starting a project*."PM14.

4.3.2 Knowledge hiding

Knowledge hiding is not the mere lack of knowledge sharing but can be considered as an intentional attempt by an individual to hide or conceal knowledge (Connelly et al., 2012). Participants reported several reasons for knowledge hiding by project practitioners. A response from participant PM8 states "*So I guess it comes down to like personality, the personality of the person depends on are they willing to share and which I am, I guess there's probably other people here maybe a bit more like well, if I share that, then I maybe lose my value"*. This response highlighted two reasons for knowledge hiding; personality and the fear of losing value. Individuals within projects hide knowledge for fear of losing their responsibility and

role within the projects. Creating a psychologically safe environment where project practitioners can feel comfortable to share knowledge whether positive or negative would enable the lessons learned process within project-based organizations.

4.3.3 Stakeholder non-participation

The lack of participation or interest from stakeholders can significantly hinder the lessons-learned process within projects. Participants noted that stakeholders may not engage due to a lack of interest or perceived irrelevance of lessons learned. Participant PM13 stated "*Through my experience, the clients are not interested in hearing about lessons learned. So, you can talk about them till you're blue in the face, but they won't listen. They've just got a project they want to deliver*". Likewise, participant PM2 explained "*Sometimes the stakeholders, the outside stakeholders didn't see the point of that. We just did it and gave them the results of the lessons learned and if they were still unsure, I would point out well these are the things that the team got right this time, and they got those wrong".* Insufficient communication about the lessons learned process may lead stakeholders to undervalue the process. Therefore, to foster stakeholder participation, it is crucial to communicate the importance and benefits of lessons learned to both the projects and the stakeholders. According to participant PM10 *"Success at the end of that is having something that is robust, well defined, clear and all the stakeholders buy into it. It's really important you get all the stakeholders to buy in*" PM10.

4.3.4 Leadership/Learning Champion

A crucial role in the lessons-learned process is that of the champion as they tend to spearhead the process and drum up implementation support (Love et al., 2011). The project manager tends to be the more easily identified practitioner with responsibility for lessons learned. This is because the role of overseer of the project allows them to observe outside of the silos created

by the different project roles as noted by PM7 "*unless you were the project manager or project director, there are very few people in that project that will have visibility of everything that happened*". Participants recognised the importance of the project manager's role with PM2 further emphasising "*it is the project manager's responsibilities to make sure that at the very least each team at the end of the project does lessons learned and gets benefit from it*". PM3 noted what was expected of the project manager "*we've got a lessons learned database and it's incumbent upon the project managers to make sure that all lessons learned throughout the full life cycle of the project are identified and uploaded into the database*".

Championing the lessons learned cause is not limited to just project managers. Participants acknowledged that at times those in higher supervisory or management positions may spearhead the knowledge sharing. PM4 stated that "*doing some training on project management and also mentoring for project team members*" was a good means of knowledge sharing. Team members can also champion lessons learned in some situations where they join a new project team or the team preparing for a new project manager. This was explained by PM2 when he stated, "*Chances are that teams going to get split up and go into other projects. And if those team members have benefited from the lessons learned, they will carry that to the next project, and hopefully encourage the project manager there that why, don't we do lessons learned*".

As suggested by the data, champions come through a variety of roles and play a significant role in ensuring the lessons-learned process occurs. Leadership is a critical success factor, in addition to responsibilities and organizational culture when collecting and disseminating lessons learned (Williams, 2008).

4.4 Contextual Dimension

4.4.1 Lack of a collaborative environment

The lack of a collaborative environment for stakeholders to share insights and experiences can significantly hinder the lessons learned process within projects. Participants noted that organizations might be performing below the expected capacity when project stakeholders operate in silos, leading to valuable lessons remaining isolated and a lack of potential benefit to other project stakeholders. PM03 stated, "*We can be more efficient as an organization in knowledge management if we create a collaborative environment in lessons learned capturing and sharing."* The lack of a collaborative environment not only leads to the isolation of valuable lessons but also results in repeated mistakes and loss of knowledge. PM14 observed that "*.....everyone being a part of the lessons learned discussion is important to avoid repeated mistakes and loss of knowledge. For this to happen, organizations must create an environment that easily allows team members to come together*."

As the data suggests, without a collaborative environment for the participative sharing of lessons learned among project team members, the organization can miss opportunities to influence future project performance in a timely manner.

4.4.2 Knowledge Repository

Knowledge repositories play an important contribution in the management and utilisation of lessons learned in project and project management. They offer a centralized approach to managing an organization's knowledge retention for future project outcome enhancement. Research participants emphasised the need for organizations to create a knowledge repository where project team members can document their experiences, insights, and best practices. For example, PM13 stated that *"Having a management system that is frequently updated with*

lessons learned from projects implemented presents an excellent form of knowledge database that can be consulted when new projects are introduced."

Research participants emphasized how project practitioners can turn a knowledge repository into a valuable asset through the accumulation of knowledge for improving future project outcomes as evidenced by PM1 *"You're talking about maybe two, three years down the line, then you have this excellent database and you can then start to modify your own procedures and say, Right, this is what we're looking to get."* The efficacy of the knowledge repositories can be reduced when proper consideration is not paid to appropriate review and implementation opportunities. PM14 pointed out: "You *know, you may have read the lessons in that database 3 to 4 months ago and it's really difficult to think, Oh yeah, I said I wouldn't do this because by then you're already into the situation and the seeds are already sown."*

4.4.3 Standardization

Fostering consistency through standardization was pointed out by most research participants as crucial to successful lessons learned capturing and implementation. The need for consistency is a recurring theme in the discussion on standardization. For example, PM4 states *"We need to get into a place now where we have consistency not only of governance but the consistency of lessons learned. Lessons learned for me is the best way to improve on your technique, improve on your performance and also the best way for people to learn."*

The role of standardization in mitigating the difficulties faced by project practitioners in capturing and streamlining relevant data was also expressed *"It's probably one of the worst experiences of my life, I'll be honest…, we needed to pool the right information out of here. How did we do it? …… we tried to come up with a kind of standardized way where we can actually pull information"* PM1. Integrating lessons learned into the project lifecycle was

discussed by PM9, *"It should be a part of the kickoff meeting. Yeah, you have a standard kick-off form and you go through the scope of work, schedule, risks, etc.* while some participants spoke about promoting efficiency through established standardized best practices. For example, *"I think it's (standardization) very, very valuable because we often or almost always try and not reinvent the wheel,"*. PT11.

5 Discussion

The results suggest that the identified dimensions of lessons learned can be both barriers to learning and mechanisms to capture/embed lessons in the project environment. The results further show that these dimensions are interconnected and occur within and across organizations, contributing to the overall project and organizational performance.

While individuals may misinterpret and misperceive learning in projects, organizations must install a formal and structured system to better capture and communicate lessons within and across projects and organizations. This conclusion is consistent with existing studies that effective communication could mitigate misinterpretations of lessons and guide project team members' efforts towards achieving a common objective, making it a key determinant of project success (Zwikael et al., 2014).

With effective communication, project managers can facilitate information sharing among team members, retain knowledge, and apply lessons learned for project success (Zwikael et al., 2014). Our study shows that information sharing and communication are learning's critical success factors, it is incumbent on PBOs to foster a conducive environment for project team members to learn lessons, express themselves freely, and share their thoughts on project status/performance and project management practices. This will promote a learning collaborative environment, removing structural and infrastructural barriers to the individual

and organizational ability to learn lessons. Providing the psychological safety net through an open and inclusive learning environment where mistakes are seen as learning opportunities instead of failures could increase lessons learned and embeddedness (Edmondson, 2018).

To achieve this goal, the behavior of leaders, especially project managers and team leads, is an important factor in how lessons are captured, codified, and translated to achieve project success. According to our study, mentoring creates and encourages a learning environment for project team members to acquire new knowledge and skills by imitating and replicating leaders' actions. This aligns with Ajmal et al. (2010) who affirmed that mentoring fosters a learning culture in the project environment, increasing the possibility for knowledge acquisition and transfer within and across projects and PBOs. Mentoring programs should be embedded into projects and project management frameworks for experienced and less experienced project practitioners to effectively capture, disseminate and apply lessons learned, leading to sustained project success (Garavan et al., 2012).

Learning champions contribute to integrating and fostering acceptable organizational learning behaviors and practices. Assigning learning champions, as role models, demonstrates organizational and leadership commitment to lessons learned and implementation, enhancing project team members' confidence and self-efficacy in sharing information and learning best practices. This aligns with Kim and Park's (2020) affirmation that the effectiveness of organizational learning and knowledge management practices is significantly influenced by top management support and commitment to lessons learned. Top management behaviors, such as facilitating open communication, enforcing lessons learned practices and advocating appropriate training programs, align with SLT's emphasis on observational learning, where individuals mirror their leader's behaviors.

Our results indicate that organizations must provide knowledge repositories and standardization to facilitate the learning process as part of their support and commitment to individual and organizational learning. Knowledge repositories are important because they provide a structured platform for capturing, storing, and sharing lessons learned. Ajmal et al. (2010) postulate that knowledge repositories are important in integrating lessons learned into organizational procedures and processes to enhance their ability to innovate and adapt.

Standardized documentation, processes, and procedures make understanding expectations easier for project team members while fostering a culture of best practices and continuous improvement. Bolisani and Handzic (2014) added that standardization is vital in creating a stable environment where team members can improve and adapt to existing project management methods. This further suggests that standardization creates a consistent approach that minimizes deviations from project goals and follows best practices.

While this study extends the concept of lessons learned by showing how learning can be captured and embedded into PBOs' project practices using SLT, it further argues that organizations and project leaders should remove institutional barriers to lessons learned and implementations.

6. Theoretical and Practical Contributions

This study offers several theoretical and practical contributions. First, the study contributes to the ongoing theoretical discussion on barriers and the potential contribution of lessons learned to project success by applying the SLT to the context of project management. The integration of the SLT presents a novel approach to understanding the barriers to learning in projects and how lessons learned can be acquired, disseminated and utilised among project team members. By emphasising the role of communication and facilitation skills, standardization, knowledge

repositories, and learning champions in learning processes, the study augments the understanding of how project practitioners can effectively capture and apply lessons learned to increase the probability of project success.

Second, the study identifies the barriers to effective lessons learned and knowledge sharing within projects, such as misperception of lessons learned, lack of mentoring, lack of top management support, knowledge hiding and stakeholder non-participation and classifies them according to the SLT dimensions. The findings explain why these barriers occur and how they impede project success, contributing to the existing literature on the factors that obstruct the transfer of knowledge within projects.

Third, from a practice perspective, the study offers actionable directions for improving lessons learned and knowledge management practices within projects and project management environments. By highlighting effective strategies for capturing and embedding lessons learned, project practitioners are availed of practical guidelines that can foster more efficient knowledge management. Ultimately, it focuses on improving project success rates by ensuring that valuable lessons learned are effectively captured, disseminated and utilised among project team members.

7. Conclusions, limitations and research agenda

This qualitative study explored the barriers to implementing lessons learned and how to capture and embed them from a Social Learning perspective. The findings indicate that effective application of lessons learned and knowledge sharing significantly enhance project success by fostering a culture of collective learning and continuous improvement. The key barriers identified are misinterpretation of lessons learned, lack of mentoring, knowledge hiding, non-participation from relevant stakeholders and lack of a collaborative environment. Overcoming

these barriers requires building trust among project team members, appointing learning champions, standardizing learning processes and implementing robust knowledge management repositories. In addition, the study highlights the importance of top management support in fostering an inclusive environment where lessons learned are valued and can be shared freely and actively utilised. Top management plays a crucial role in cultivating open communication and trust essential for effective knowledge sharing. By harnessing elements, such as knowledge repositories and mentorship, organizations can improve their lessons learned process and improve their prospects of project success.

The study however has limitations that need to be acknowledged. First, it relied on qualitative interview data, possibly introducing bias and subjectivity. Future studies could embrace quantitative or mixed methods to provide a more objective assessment of SLT application in exploring the barriers to implementing lessons learned and the impact on project success. A quantitative approach could especially be employed to validate the findings across a wider sample.

Second, the study was conducted with a sample drawn from a limited number of United Kingdom industries (Oil and gas, Chemicals, Energy, and Telecoms), which may not fully capture the diversity of experiences across different organizational and industry contexts. Future studies could benefit from a broader sample drawn from more diverse industries. This could take on the form of a longitudinal study to explore and understand the impact of lessons learned on project success.

Third, the study primarily considers the views and opinions of project managers, potentially overlooking the perspectives of other relevant stakeholders such as project team members, suppliers and clients. Future studies could provide a detailed understanding and knowledge of

lessons learned barriers and contributions to project success by including the perspectives of stakeholders.

References

Aisheh, Y.I.A., 2021. Lessons learned, barriers, and improvement factors for mega building construction projects in developing countries: review study. Sustainability, 13(19), p.10678.

Ajmal, M., Helo, P., & Kekäle, T., 2010. Critical factors for knowledge management in project business. Journal of Knowledge Management, 14(1), 156-168.

Argote, L. and Miron-Spektor, E., 2011. Organizational learning: From experience to knowledge. Organization Science, 22(5), pp.1123-1137.

Atkisson, C., 2022. Mentors matter: Association of mentors with project success in the Apache Software Foundation Incubator. Plos one, 17(8), p.e0272764.

Bandura, A. and Walters, R.H., 1977. Social learning theory (Vol. 1, pp. 141-154). Englewood Cliffs, NJ: Prentice Hall.

Bandura, A., 1986. Social Foundations of Thought and Action: A Social Cognitive Theory. Englewood Cliffs, NJ: Prentics-Hall.

Bandura, A., 2001. Social cognitive theory: An agentic perspective. Annual review of psychology, 52(1), pp.1-26.

Bolisani, E. and Handzic, M. eds., 2014. Advances in knowledge management: celebrating twenty years of research and practice (Vol. 1). Springer.

Bowen, G.A., 2008. Naturalistic inquiry and the saturation concept: a research note. Qualitative research, 8(1), pp.137-152.

Brown, J.S. and Duguid, P., 1991. Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. Organization Science, 2(1), pp.40-57.

Carrillo, P., Ruikar, K. and Fuller, P., 2013. When will we learn? Improving lessons learned practice in construction. International journal of project management, 31(4), pp.567-578.

Clarke, V. and Braun, V., 2017. Thematic analysis. The Journal of Positive Psychology, 12(3), pp.297-298.

Connelly, C.E., Zweig, D., Webster, J. and Trougakos, J.P., 2012. Knowledge hiding in organizations. Journal of organizational behavior, 33(1), pp.64-88.

Cook, S.D. and Brown, J.S., 1999. Bridging epistemologies: The generative dance between organizational knowledge and organizational knowing. Organization Science, 10(4), pp.381-400.

Crawford, L., 2005. Senior management perceptions of project management competence. International journal of project management, 23(1), pp.7-16.

Creswell, J.W., 2014. Research Design: Qualitative, Quantitative, and Mixed Method Approaches (4th ed.), Sage Publications, Inc., Thousand Oaks, CA

Deville, C.W., 2012. Perception of knowledge transfer within informal social networks. Walden University.

Duffield, S. and Whitty, S.J., 2015. Developing a systemic lessons learned knowledge model for organizational learning through projects. International journal of project management, 33(2), pp.311-324.

Duffield, S.M. and Whitty, S.J., 2016. Application of the systemic lessons learned knowledge model for organizational learning through projects. International journal of project management, 34(7), pp.1280-1293.

Edmondson, A.C., 2018. The fearless organization: Creating psychological safety in the workplace for learning, innovation, and growth. John Wiley & Sons.

Fernandez-Gimenez, M.E., Ballard, H.L. and Sturtevant, V.E., 2008. Adaptive management and social learning in collaborative and community-based monitoring: a study of five community-based forestry organizations in the western USA. Ecology and Society, 13(2).

Garavan, T. N., Carbery, R., & Rock, A., 2012. Mapping talent development: definition, scope and architecture. European journal of training and development, 36(1), 5-24.

Giannetto, D., Chao, J. and Fontana, A., 2013. Gamification in a social learning environment. In Proceedings of the Informing Science and Information Technology Education Conference (pp. 195-207). Informing Science Institute.

Hennink, M., Hutter, I. and Bailey, A., 2020. Qualitative research methods. Sage.

Hopkin, P., 2018. Fundamentals of risk management: understanding, evaluating and implementing effective risk management. Kogan Page Publishers.

Hubert, C., 2012. The new edge in knowledge: How knowledge management is changing the way we do business. In Offshore Technology Conference (pp. OTC-23620). OTC.

Iftikhar, R., Ahola, T. and Butt, A., 2022. Learning from interorganizational projects. International Journal of Managing Projects in Business, 15(1), pp.102-120.

Jugdev, K., 2012. Learning from lessons learned: Project management research program. American Journal of Economics and Business Administration, 4(1), p.13.

Kallio, H., Pietilä, A.M., Johnson, M. and Kangasniemi, M., 2016. Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. Journal of advanced nursing, 72(12), pp.2954-2965.

Kim, E.J. and Park, S., 2020. Transformational leadership, knowledge sharing, organizational climate and learning: an empirical study. Leadership & organization development journal, 41(6), pp.761-775.

Klakegg, O.J., Williams, T., Walker, D., Andersen, B. and Magnussen, O.M., 2010. Early warning signs in complex projects. Project Management Institute.

Lave, J. and Wenger, E., 1991. Situated learning: Legitimate peripheral participation. Cambridge university press.

Love, P., Edwards, D., Love, J. and Irani, Z., 2011. Champions of practice: context and habitus for unbounded learning in construction projects", Facilities, Vol. 29 No. 5/6, pp. 193-208.

Mainga, W., 2017. Examining project learning, project management competencies, and project efficiency in project-based firms (PBFs). International Journal of Managing Projects in Business, 10(3), pp.454-504.

McCann, J.E. and Buckner, M., 2004. Strategically integrating knowledge management initiatives", Journal of Knowledge Management, Vol. 8 No. 1, pp. 47-63.

McClory, S., Read, M. and Labib, A., 2017. Conceptualising the lessons-learned process in project management: Towards a triple-loop learning framework. International Journal of Project Management, 35(7), pp.1322-1335.

Merriam, S.B. and Tisdell, E.J., 2015. Qualitative research: A guide to design and implementation. John Wiley & Sons.

Morris, P.W., 2013. Reconstructing project management. John Wiley & Sons.

Murray-Webster, R. and Dalcher, D., 2019. APM body of knowledge (No. 7th ed). Association for Project Management.

Myers, M.D., 2019. Qualitative research in business and management. Qualitative research in business and management, pp.1-364.

Naeem, M., Ozuem, W., Howell, K., & Ranfagni, S., 2023. A step-by-step process of thematic analysis to develop a conceptual model in qualitative research. International Journal of Qualitative Methods, 22, 16094069231205789.

Ononuju, C.N., Amade, B., Amaeshi, U.F., Adu, E.T. and Iringe-koko, P.K., 2019. Extent of the application of lessons learned in construction projects: The Nigerian experience. International Academic Journal of Information Sciences and Project Management, 3(3), pp.45-58.

Osobajo, O.A. and Bjeirmi, B., 2021. Aligning tacit knowledge and competitive advantage: a resource-based view. International Journal of Knowledge Management Studies, 12(3), pp.203-226.

Paver, M., & Duffield, S., 2019. Project management lessons learned "the elephant in the room". The Journal of Modern Project Management, 6(3).

Pemsel, S. and Wiewiora, A., 2013. Project management office a knowledge broker in project-based organizations. International journal of project management, 31(1), pp.31-42.

Pinto, J. K., Davis, K., Ika, L. A., Jugdev, K., & Zwikael, O., 2022. Coming to terms with project success: Current perspectives and future challenges. International Journal of Project Management, 40(7), 831-834.

Project Management Institute, 2017. We Asked the Project Management Community: What Lesson Did You Learn from a Project Management Mistake? (2017). PM Network, 31(2), 20–21.

Reed, M.S., Evely, A.C., Cundill, G., Fazey, I., Glass, J., Laing, A., Newig, J., Parrish, B., Prell, C., Raymond, C. and Stringer, L.C., 2010. What is social learning?. Ecology and society, 15(4).

Rhodes, L. and Dawson, R., 2013. Lessons learned from lessons learned. Knowledge and process management, 20(3), pp.154-160.

Rupčić, N., 2018. Challenges of the levels of learning", The Learning Organization, Vol. 25 No. 4, pp. 281-287.

Salomon, G. and Perkins, D.N., 1998. Chapter 1: Individual and social aspects of learning. Review of research in education, 23(1), pp.1-24.

Sanchez, O.P. and Terlizzi, M.A., 2017. Cost and time project management success factors for information systems development projects. International Journal of Project Management, 35(8), pp.1608-1626.

Schunk, D. H., & DiBenedetto, M. K., 2020. Motivation and social cognitive theory. Contemporary educational psychology, 60, 101832.

Schunk, D.H. and DiBenedetto, M.K., 2016. Self-efficacy theory in education. In Handbook of motivation at school (pp. 34-54). Routledge.

Schunk, D.H. and Zimmerman, B.J., 2012. Self-regulation and learning. Handbook of Psychology, Second Edition, 7.

Serrador, P. & Turner, R., 2015. The relationship between project success and project efficiency. Project Management Journal, 46(1), 30-39

Shenhar, A.J., Levy, O. and Dvir, D., 1997. Mapping the dimensions of project success. Project management journal, 28, pp.5-13.

Shokri-Ghasabeh, M. and Chileshe, N., 2014. Knowledge management: Barriers to capturing lessons learned from Australian construction contractors perspective. Construction Innovation, 14(1), pp.108-134

Slevin, D.P. and Pinto, J.K., 1986. Project implementation profile: new tool for project managers, Project Management Journal, Vol. 17 No. 3, pp. 57-70.

Surowiecki, J., 2004. The wisdom of crowds: why the many are smarter than the few and how collective wisdom shapes business, economies, societies and nations. New York: Anchor.

Tokede, O., Ahiaga-Dagbui, D. and Morrison, J., 2022. Praxis of knowledge-management and trust-based collaborative relationships in project delivery: mediating role of a project facilitator, International Journal of Managing Projects in Business, Vol. 15 No. 4, pp. 595-618.

Volden, G.H. and Welde, M., 2022. Public project success? Measuring the nuances of success through ex post evaluation. International Journal of Project Management, 40(6), pp.703-714.

Wiewiora, A., Chang, A. and Smidt, M., 2020. Individual, project and organizational learning flows within a global project-based organization: exploring what, how and who", International Journal of Project Management, Vol. 38 No. 1, pp. 201-214.

Williams, T., 2008. How do organizations learn lessons from projects—And do they?. IEEE Transactions on engineering management, 55(2), pp.248-266.

Wu, L.W. and Lin, J.R., 2013. Knowledge sharing and knowledge effectiveness: learning orientation and co-production in the contingency model of tacit knowledge. Journal of Business & Industrial Marketing, 28(8), pp.672-686.

Xu, W., & Zammit, K., 2020. Applying thematic analysis to education: A hybrid approach to interpreting data in practitioner research. *International journal of qualitative methods*, *19*, 1609406920918810.

Zwikael, O., Pathak, R. D., Singh, G., & Ahmed, S., 2014. The moderating effect of risk on the relationship between planning and success. International Journal of Project Management, 32(3), 435-441.