

## Wise Leadership for Virtual Team Learning: The Mediating Role of Organisational Storytelling within Educational Organisations

Abdullah Fathi Aziz Ali<sup>1</sup> 

<sup>1</sup> Representative Office of the Ministry of Education, Duhok, Kurdistan Region, Iraq.

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### **Abstract**

*The increasing reliance on virtual teams has transformed organisational learning from an individual activity into a collective capability that depends heavily on effective leadership and knowledge-sharing practices. Despite extensive research on leadership and team learning, limited attention has been devoted to understanding how Wise Leadership (WL) promotes Virtual Team Learning (VTL) through Organisational Storytelling (OS), particularly within educational organisations. Addressing this gap, the present study develops and empirically tests an integrated conceptual model examining the direct and indirect relationships among WL, OS, and VTL in the Representative Offices of the Iraqi Ministry of Education operating in the Kurdistan Region. Data were collected using a structured questionnaire administered to employees and team leaders working in virtual teams. The proposed model was analysed using Structural Equation Modelling (SEM) to assess both the measurement and structural models. The findings demonstrate that WL exerts a significant positive influence on OS and VTL. Furthermore, OS significantly enhances VTL and partially mediates the relationship between WL and VTL, indicating that leaders who effectively communicate organisational experiences through meaningful narratives substantially strengthen collaborative learning processes. The study contributes to the leadership, knowledge management, and organisational learning literature by introducing one of the first empirical models integrating WL, OS, and VTL within a single framework. Practically, the findings highlight the importance of developing leaders' practical wisdom and storytelling capabilities to improve knowledge sharing, collaboration, and continuous learning in virtual educational environments.*



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©Author, 2025, CA: Abdullah F. A. Ali, [abd89f@gmail.com](mailto:abd89f@gmail.com).

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## **1. Introduction**

Organisations increasingly compete through their ability to create, share, and continuously renew knowledge rather than through physical resources alone. In such environments, the capacity of teams to learn collectively has become a fundamental organisational capability that determines adaptability, innovation, and long-term sustainability (Abdulmuhsin & Ali, 2022). As organisations continue to digitalise their operations and rely on geographically dispersed employees, particularly following the global transformation initiated by the COVID-19 pandemic, virtual teams have evolved from an operational alternative into a strategic organisational necessity (Garro-Abarca et al., 2021; Newman, 2020). Consequently, understanding how leaders can stimulate learning within virtual teams has become one of the most important challenges in contemporary organisational and knowledge management research.

Team learning has long been recognised as the cornerstone of organisational learning because organisations ultimately learn through the collective learning processes of their members rather than through isolated individual activities (Senge, 1990). Edmondson (1999) conceptualised team learning as an ongoing process involving questioning, reflection, experimentation, feedback seeking, collaborative problem-solving, and collective interpretation of experiences. Unlike individual learning, team learning emerges through continuous social interaction that enables members to construct shared understanding, exchange tacit and explicit knowledge, challenge existing assumptions, and jointly develop innovative solutions. These collaborative processes are particularly critical within virtual teams, where knowledge exchange relies heavily on digital communication technologies rather than face-to-face interaction (Edmondson, 2008; Kozlowski & Bell, 2012).

The rapid expansion of virtual work has significantly altered the dynamics of leadership and organisational learning. Information and communication technologies have enabled organisations to establish geographically dispersed teams capable of collaborating across organisational, cultural, and national boundaries while simultaneously reducing operational costs and increasing organisational flexibility (Vendrell-Herrero et al., 2020). However, virtual collaboration also introduces substantial managerial challenges, including geographical separation, reduced social interaction, communication ambiguity, knowledge fragmentation, cultural diversity, and diminished opportunities for informal learning (Bell et al., 2012; Hambley et al., 2007). These challenges became particularly evident during the COVID-19 pandemic, when educational institutions rapidly transitioned to remote working arrangements and virtual collaboration, placing unprecedented demands on leaders responsible for maintaining team learning and organisational effectiveness (Gallego et al., 2021).

Existing research consistently demonstrates that leadership represents one of the most influential antecedents of team learning. Various leadership approaches, including transformational

leadership, empowering leadership, ethical leadership, shared leadership, and leader humility, have been shown to encourage collaborative learning by promoting trust, knowledge sharing, psychological safety, and collective reflection (Bouwman et al., 2018; Chamtitigul & Li, 2021; Li et al., 2017; Wibowo & Hayati, 2019). Nevertheless, contemporary organisations increasingly operate in environments characterised by uncertainty, complexity, and rapid technological change, conditions that demand leadership extending beyond traditional motivational or transactional approaches. These circumstances have directed scholarly attention towards Wise Leadership (WL), which emphasises practical wisdom (phronesis), ethical judgement, contextual understanding, long-term thinking, and collective value creation (Nonaka & Takeuchi, 2019). Wise leaders not only facilitate knowledge creation but also enable individuals and teams to interpret complex situations, make sound judgements, and coordinate organisational learning across multiple organisational boundaries (Ali & Abdulmuhsin, 2021).

Alongside leadership, Organisational Storytelling (OS) has emerged as a powerful mechanism for transferring tacit knowledge, reinforcing organisational identity, and facilitating collective learning. Stories enable leaders to communicate experiences, values, lessons learned, and strategic intentions in ways that formal procedures and written documents cannot easily achieve (Denning, 2021). OS therefore represents a practical implementation of the knowledge personalisation strategy, allowing employees to internalise complex knowledge through narratives that stimulate emotional engagement, shared understanding, and behavioural commitment (Khdour et al., 2020). Within virtual environments, storytelling may become even more valuable because it compensates for the absence of physical interaction by creating meaningful social connections that support collaboration and knowledge exchange through digital communication technologies.

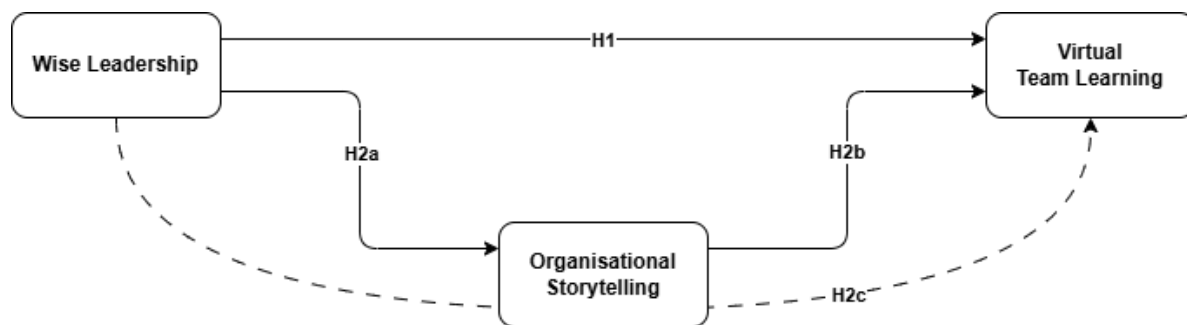
Despite growing scholarly interest in leadership, storytelling, and team learning, several important gaps remain within the existing literature. First, previous research has predominantly investigated the influence of leadership styles such as transformational, ethical, empowering, humble, or shared leadership on team learning and team performance (Chiu et al., 2020; Klaic et al., 2020). Comparatively little empirical attention has been devoted to WL, despite its theoretical relevance for managing knowledge-intensive organisations under conditions of uncertainty (Nonaka & Takeuchi, 2019). Second, although OS has been recognised as an important communication and knowledge-sharing practice, it has rarely been examined as a mediating mechanism through which leadership capabilities influence Virtual Team Learning (VTL). Most existing studies consider storytelling independently from leadership or examine its influence on organisational performance rather than collaborative learning (Denning, 2021; Khdour et al., 2020). Third, empirical studies integrating WL, OS, and VTL into a unified theoretical framework remain virtually absent from both the Scopus and

Web of Science literature. To the best of the author's knowledge, no previous study has simultaneously examined these three constructs within educational organisations operating under extensive virtual collaboration.

These limitations are particularly important in educational institutions, where learning constitutes the primary organisational mission. During periods of disruption such as the COVID-19 pandemic, educational organisations were required to sustain collaboration, knowledge sharing, and continuous learning despite physical separation and rapidly changing operational conditions. Representative Offices of the Ministry of Education therefore provide an appropriate empirical context for investigating how WL capabilities can enhance VTL through OS.

Accordingly, this study develops and empirically tests an integrated conceptual model linking WL, OS, and VTL – see Figure 1. Specifically, the study investigates the direct influence of WL on VTL, examines the effect of WL on OS, evaluates the influence of OS on VTL, and tests the mediating role of OS in explaining how WL enhances collective learning among virtual teams. By integrating these constructs, the study contributes to leadership theory, organisational learning, and knowledge management literature while providing practical guidance for educational organisations seeking to strengthen collaborative learning in digitally mediated environments.

**Figure 1. The conceptual model of study**



**Source:** Author's own work

The remainder of this paper is organised as follows. Sections 2 and 3 review the theoretical foundations and develop the research hypotheses, Section 4 presents the research methodology, Section 5 reports the empirical findings, Section 6 discusses the results in relation to existing theory and prior empirical research. Finally, Sections 7 and 8 present the study's conclusions, theoretical and practical implications, limitations, and recommendations for future research.

## **2. Theoretical Background**

### *2.1 Wise Leadership*

The increasing complexity, uncertainty, and interconnectedness of contemporary organisational environments have challenged the adequacy of traditional leadership theories that primarily emphasise authority, charisma, or transactional exchanges. Digital transformation, knowledge-intensive work, global virtual collaboration, and rapidly changing stakeholder expectations require leaders who can navigate ambiguity while simultaneously creating social value and fostering continuous learning (Ali & Abdulmuhsin, 2021). Consequently, scholars have increasingly recognised WL theory as a contemporary leadership paradigm capable of addressing these multifaceted organisational challenges through the integration of practical wisdom, ethical judgement, knowledge creation, and collective learning (Nonaka & Takeuchi, 2019; Nonaka et al., 2008). Unlike conventional leadership models that often focus on achieving predetermined organisational objectives, WL emphasises the continuous pursuit of the common good by balancing organisational performance with human development, ethical responsibility, and long-term sustainability.

WL theory originates from the Japanese knowledge-based view of the firm developed by Nonaka and colleagues, which integrates the Aristotelian concept of *phronesis* (practical wisdom) into organisational leadership. Practical wisdom extends beyond technical expertise or analytical intelligence by enabling leaders to make context-sensitive judgements under conditions characterised by uncertainty, ambiguity, and incomplete information (Nonaka & Takeuchi, 2019). Rather than relying exclusively on formal rules or rational optimisation, wise leaders synthesise explicit knowledge, tacit experience, ethical values, intuition, and contextual understanding to determine the most appropriate course of action for achieving organisational and societal wellbeing. This perspective positions leadership not merely as directing followers but as facilitating the dynamic creation, integration, and application of knowledge across multiple organisational levels (Nonaka et al., 2008).

A distinctive characteristic of WL theory is its conceptualisation of leadership as a socially distributed process rather than an individual attribute. Leadership emerges through continuous interactions among organisational members who collectively generate knowledge, construct shared meanings, and respond adaptively to evolving environmental conditions. This post-heroic perspective contrasts sharply with earlier leadership approaches that concentrated predominantly on the personal characteristics or authority of formal leaders (Alimo-Metcalfe, 2013; McQuade et al., 2020). Instead, wise leaders cultivate collaborative environments in which knowledge flows freely, diverse perspectives are respected, and organisational learning becomes embedded within everyday practice. Such environments enable employees to participate actively in organisational problem-solving while

strengthening trust, commitment, and shared responsibility for collective outcomes (Ali & Abdulmuhsin, 2021).

Nonaka and Takeuchi (2019) propose that WL is manifested through six interrelated capabilities that collectively enable effective organisational knowledge creation. These capabilities include the ability to judge what constitutes the common good, create shared contexts (Ba) for knowledge exchange, perceive the essence of complex situations, communicate organisational visions through meaningful narratives, exercise political judgement to mobilise collective action, and cultivate practical wisdom among others (Ali & Abdulmuhsin, 2021). Together, these capabilities transform leaders from traditional decision-makers into facilitators of organisational knowledge ecosystems that continuously generate innovation, resilience, and adaptive capability. Importantly, Ba serves as a dynamic social context where individuals share experiences, integrate tacit and explicit knowledge, and collaboratively develop new organisational understanding, thereby reinforcing collective intelligence and sustained organisational learning (Nonaka & Takeuchi, 2019; Nonaka et al., 2008).

The theoretical foundations of WL also emphasise several behavioural characteristics associated with effective leadership under uncertainty. Wise leaders demonstrate humility by recognising the limits of their own knowledge while remaining open to alternative viewpoints and continuous learning. They exhibit strong ethical awareness by prioritising fairness, integrity, and long-term societal value over short-term organisational gains (Ali & Abdulmuhsin, 2021). Furthermore, self-awareness enables them to critically reflect upon their assumptions and decisions, whereas balanced judgement allows them to integrate conflicting perspectives before determining appropriate organisational actions. These behavioural attributes strengthen interpersonal trust, psychological safety, and collaborative relationships, thereby encouraging employees to contribute ideas, share knowledge, and engage constructively in organisational learning processes (Govindji, 2015; Meeks & Jeste, 2009; Nonaka & Takeuchi, 2019).

Within digitally enabled and geographically dispersed work environments, WL theory provides an especially relevant framework for understanding how leaders support organisational adaptability and collective learning. Virtual teams frequently encounter challenges related to geographical separation, communication barriers, cultural diversity, and knowledge fragmentation. Wise leaders address these challenges by fostering trust, creating shared understanding, facilitating open dialogue, and encouraging knowledge sharing across organisational boundaries (Abdulmuhsin & Tarhini, 2020; Ali & Abdulmuhsin, 2021). Through their emphasis on ethical judgement, contextual awareness, distributed leadership, and continuous knowledge creation, wise leaders establish conditions that enable virtual teams to transform individual expertise into collective capability. Consequently, WL theory provides a robust theoretical foundation for explaining how leadership behaviours stimulate

collaborative learning and create the organisational conditions necessary for effective VTL in knowledge-intensive environments (McKenna & Rooney, 2019; Nonaka & Takeuchi, 2019).

## *2.2 Organisational Storytelling*

OS has emerged as a powerful communication and knowledge management mechanism that enables organisations to create shared meaning, preserve collective memory, and strengthen collaborative learning. While organisations traditionally relied upon formal documents, policies, and procedures to disseminate information, scholars increasingly argue that stories communicate knowledge more effectively because they combine factual content with human experiences, emotions, values, and contextual understanding (Denning, 2021). Stories transform abstract organisational concepts into memorable narratives that employees can easily understand, internalise, and apply in their daily activities. Consequently, OS extends beyond simple communication and functions as a strategic capability that facilitates knowledge sharing, cultural integration, employee engagement, and organisational adaptation within increasingly complex and dynamic business environments (Ali & Abdulmuhsin, 2021).

OS refers to the deliberate or spontaneous sharing of narratives that describe organisational events, experiences, successes, failures, challenges, and lessons learned by organisational members. These narratives may be communicated formally through leadership speeches, training programmes, corporate communications, and knowledge repositories, or informally through everyday conversations and social interactions among employees (McCarthy, 2008). Regardless of their form, stories provide employees with contextualised interpretations of organisational reality by illustrating how decisions are made, how values are enacted, and how organisational members should respond to uncertain or challenging situations. Unlike explicit procedural knowledge, stories preserve tacit knowledge by embedding practical experience within meaningful contexts, thereby making complex organisational knowledge easier to comprehend and transfer across individuals and teams (Abdulmuhsin & Ali, 2022).

From a knowledge management perspective, storytelling represents one of the most effective mechanisms for transferring tacit knowledge, which is inherently difficult to codify using conventional documentation. According to Nonaka's knowledge creation theory, tacit knowledge develops through personal experience, intuition, judgement, and social interaction, making interpersonal communication essential for organisational learning. Stories facilitate this process by allowing experienced organisational members to communicate practical insights, contextual understanding, and accumulated wisdom that cannot easily be captured through manuals or databases alone (Nonaka & Takeuchi, 2019; Nonaka et al., 2008). Consequently, storytelling supports the externalisation of tacit knowledge,

enabling individuals to collectively construct shared mental models, strengthen organisational memory, and stimulate continuous knowledge creation.

The effectiveness of OS depends not only upon the content of individual stories but also upon their authenticity, credibility, emotional appeal, and contextual relevance. Effective stories typically portray realistic organisational experiences, involve identifiable individuals, present meaningful challenges, and demonstrate how particular values or behaviours contributed to successful or unsuccessful outcomes (Morgan & Dennehy, 1997). Such narratives encourage reflection rather than passive information reception by enabling employees to interpret situations from multiple perspectives and derive personally meaningful lessons. Moreover, organisational stories often function as informal governance mechanisms by communicating expected behaviours, reinforcing organisational culture, and clarifying acceptable norms without relying exclusively on formal rules or hierarchical control (Abdulmuhsin & Tarhini, 2020; Ali & Abdulmuhsin, 2021).

Leadership scholars increasingly recognise storytelling as a distinctive leadership competency because narratives possess the unique capacity to inspire, persuade, and mobilise organisational members more effectively than purely analytical communication. Leaders employ stories to articulate strategic visions, explain organisational change, reinforce ethical values, and reduce uncertainty during periods of transformation (Abdulmuhsin & Ali, 2022). Rather than simply instructing employees what actions to perform, leaders use stories to explain why particular actions matter, thereby strengthening employees' emotional commitment and cognitive understanding of organisational objectives (Denning, 2021). Narrative communication also enhances trust because authentic stories reveal leaders' experiences, vulnerabilities, and learning journeys, encouraging reciprocal openness and stronger interpersonal relationships between leaders and followers.

Within knowledge-intensive and digitally connected organisations, storytelling assumes even greater strategic importance because geographically dispersed employees often lack opportunities for direct observation and informal interaction. Virtual environments can fragment knowledge, weaken social cohesion, and reduce opportunities for experiential learning. OS compensates for these limitations by creating shared narratives that transcend geographical, cultural, and functional boundaries (Abdulmuhsin & Tarhini, 2020; Ali & Abdulmuhsin, 2021). Through digital communication platforms, leaders can disseminate stories that preserve organisational identity, encourage knowledge exchange, strengthen psychological connectedness, and foster collective learning despite physical separation. Stories therefore become an important social mechanism through which virtual teams develop shared understanding, coordinate collaborative action, and transfer experiential knowledge across dispersed organisational members (Hartman et al., 2019; Tsoukas & Hatch, 2016).



Accordingly, OS represents substantially more than an organisational communication technique; it constitutes a strategic knowledge-sharing process that integrates cognition, emotion, and social interaction to facilitate organisational learning. By translating experience into meaningful narratives, storytelling enables organisations to preserve collective wisdom, reinforce shared values, stimulate reflection, and support collaborative knowledge creation. These characteristics make OS a theoretically important mechanism through which wise leaders can transfer practical wisdom and cultivate learning-oriented behaviours, particularly within virtual teams where direct interpersonal interaction is inherently constrained.

### *2.3 Virtual Team Learning*

The rapid expansion of digital technologies, globalisation, and flexible work arrangements has transformed virtual teams from an organisational alternative into a strategic necessity. Organisations increasingly depend on geographically dispersed teams to integrate specialised expertise, accelerate innovation, and respond effectively to complex and rapidly changing business environments. Consequently, the ability of virtual teams to learn collectively has become a critical determinant of organisational adaptability, innovation, and long-term competitiveness (Gilson et al., 2013; Kozlowski & Bell, 2012). Unlike conventional co-located teams, virtual teams rely extensively on information and communication technologies (ICTs) to coordinate activities, exchange knowledge, and solve problems across geographical, temporal, and organisational boundaries. This dependence on technology fundamentally reshapes how learning occurs, making VTL an increasingly important theoretical construct within organisational behaviour and knowledge management research (Ali & Abdulmuhsin, 2021).

VTL refers to the dynamic process through which geographically dispersed team members collectively acquire, share, integrate, and apply knowledge to improve individual capabilities, team effectiveness, and organisational performance. Rather than representing the aggregation of individual learning, VTL reflects an emergent team-level capability that develops through continuous interaction, collaboration, knowledge exchange, collective reflection, and adaptive problem-solving (Van der Haar et al., 2013; Wilson et al., 2007). This perspective aligns with the systems view of organisational learning, which regards teams as the fundamental units through which organisational knowledge is generated, refined, and institutionalised. As Senge (1990) famously argued, organisations learn only when their teams learn, making collective learning a prerequisite for organisational renewal and sustainable competitive advantage.

The theoretical foundations of VTL draw upon organisational learning theory, social constructivism, and knowledge management perspectives. Organisational learning theory proposes

that learning emerges through continuous cycles of experience, reflection, experimentation, and knowledge application (Argote & Miron-Spektor, 2011). Within virtual environments, these processes are mediated by digital communication platforms that facilitate collaboration despite physical separation. Social constructivist theory further suggests that knowledge is co-created through dialogue, shared experiences, and social interaction rather than transferred as static information (Decuyper et al., 2010). Accordingly, VTL depends upon the team's ability to establish shared mental models, psychological safety, mutual trust, and effective communication practices that enable dispersed members to collaboratively interpret information and develop collective understanding despite geographical and cultural differences.

Unlike traditional face-to-face teams, virtual teams operate under conditions characterised by reduced social presence, limited informal interaction, asynchronous communication, cultural diversity, and technological dependence. These characteristics introduce significant barriers to effective learning, including knowledge fragmentation, communication ambiguity, reduced interpersonal trust, coordination difficulties, and limited opportunities for spontaneous knowledge sharing (Charlier et al., 2016; Hertel et al., 2005). Furthermore, virtual teams often consist of members possessing diverse professional backgrounds, functional expertise, and cultural perspectives, increasing both the potential for innovative learning and the complexity of achieving shared understanding. Consequently, effective VTL requires intentional mechanisms that promote open communication, collaborative problem-solving, continuous feedback, and coordinated knowledge integration across dispersed organisational members (Abdulmuhsin & Tarhini, 2020; Ali & Abdulmuhsin, 2021).

Scholars generally conceptualise VTL as a multidimensional process encompassing knowledge acquisition, knowledge sharing, collective reflection, experimentation, and behavioural adaptation. During knowledge acquisition, team members seek relevant information from internal and external sources. Knowledge sharing subsequently enables individuals to exchange expertise and experiences through collaborative interaction, while collective reflection encourages critical evaluation of existing assumptions and practices (Abdulmuhsin & Ali, 2022). Experimentation facilitates the development and testing of alternative solutions, whereas behavioural adaptation allows teams to modify routines, improve coordination, and respond effectively to environmental changes (Kozlowski & Ilgen, 2006; Rebelo et al., 2019). Together, these learning behaviours contribute to the development of shared cognition, transactive memory systems, and collective intelligence, thereby strengthening both team performance and organisational learning capabilities.

Leadership plays a particularly influential role in facilitating VTL because dispersed environments provide fewer opportunities for spontaneous coordination and interpersonal support. Effective leaders establish psychologically safe climates that encourage open dialogue, constructive

feedback, knowledge sharing, and collaborative experimentation. They also reduce uncertainty by clarifying shared objectives, facilitating communication across technological platforms, and promoting trust among geographically dispersed members (Abdulmuhsin & Ali, 2022). Contemporary leadership research increasingly suggests that leadership behaviours emphasising collaboration, ethical judgement, knowledge creation, and distributed decision-making are especially valuable for supporting virtual learning processes under conditions of uncertainty and complexity (McKenna & Rooney, 2019; Nonaka & Takeuchi, 2019).

Thus, VTL represents a strategic organisational capability that enables dispersed teams to transform individual expertise into collective knowledge through continuous interaction, reflection, and collaboration. Its effectiveness depends not merely on technological infrastructure but on the quality of leadership, communication, trust, and knowledge-sharing practices that sustain collaborative learning across geographical and organisational boundaries. Consequently, understanding the antecedents of VTL has become increasingly important for explaining how contemporary organisations develop adaptive, innovative, and knowledge-driven virtual workforces capable of sustaining competitive advantage in digitally connected environments.

### **3. Hypotheses Development**

#### *3.1 Wise Leadership and Virtual Team Learning*

The relationship between WL and VTL is grounded in the proposition that effective learning within geographically dispersed teams depends not only on technological infrastructure but also on leadership behaviours that cultivate trust, facilitate knowledge integration, and create psychologically safe environments for collaboration (Ali & Abdulmuhsin, 2021). As organisations increasingly rely on virtual teams to execute complex and knowledge-intensive tasks, leadership has become a decisive factor in transforming dispersed individual expertise into collective intelligence. WL theory provides a compelling theoretical lens for explaining this process because it conceptualises leadership as an ethical, knowledge-centred, and socially embedded practice that enables continuous learning under conditions of uncertainty and complexity (Nonaka & Takeuchi, 2019). Rather than directing employees through formal authority, wise leaders facilitate collaborative knowledge creation by encouraging dialogue, reflection, and shared meaning among organisational members.

From a knowledge-based perspective, VTL is fundamentally a social process requiring the continuous exchange, integration, and application of both explicit and tacit knowledge. However, geographical dispersion, reduced face-to-face interaction, cultural diversity, and reliance on digital communication frequently impede these learning processes by limiting interpersonal trust, reducing spontaneous knowledge sharing, and increasing communication ambiguity (Charlier et al., 2016;

Gilson et al., 2013). Wise leaders address these challenges by creating organisational conditions that compensate for the limitations of virtual work. Specifically, they cultivate shared contexts (Ba) in which dispersed team members feel psychologically safe to exchange ideas, question assumptions, and collectively construct new knowledge despite physical separation (Nonaka et al., 2008). Through these shared learning spaces, virtual teams become capable of developing common mental models and collaborative routines that strengthen collective learning performance.

One of the central mechanisms linking WL to VTL is the leader's capacity to exercise practical wisdom (phronesis). Practical wisdom enables leaders to interpret complex situations holistically, balance competing stakeholder interests, and make context-sensitive judgements rather than relying exclusively on predetermined procedures (Nonaka & Takeuchi, 2019). Virtual environments frequently expose teams to rapidly changing priorities, technological disruptions, and ambiguous information that cannot always be resolved through formal organisational rules. Wise leaders therefore encourage adaptive learning by helping team members interpret uncertainty, integrate diverse viewpoints, and develop innovative solutions collaboratively. Their emphasis on contextual judgement fosters reflective learning, enabling teams to continuously adapt their knowledge and behaviours in response to emerging organisational challenges (Abdulmuhsin & Ali, 2022; Abdulmuhsin & Tarhini, 2020; Ali & Abdulmuhsin, 2021).

Furthermore, wise leaders strengthen VTL by promoting humility, openness, and ethical behaviour throughout collaborative processes. Leadership humility encourages recognition that valuable knowledge resides throughout the organisation rather than exclusively within formal leadership positions (Govindji, 2015). Consequently, team members become more willing to contribute ideas, acknowledge mistakes, seek assistance, and learn from colleagues possessing complementary expertise. Similarly, ethical leadership behaviours reinforce fairness, mutual respect, and integrity, thereby enhancing interpersonal trust - a critical antecedent of knowledge sharing and collaborative learning within virtual teams. When employees perceive leaders as trustworthy and genuinely committed to collective wellbeing, they are more likely to participate actively in dialogue, experimentation, and shared problem-solving activities that underpin effective team learning (Abdulmuhsin & Ali, 2022).

WL also enhances VTL by facilitating continuous knowledge creation rather than merely knowledge dissemination. According to Nonaka and colleagues, leaders serve as catalysts who connect individuals, teams, and organisational units, enabling knowledge to flow across structural and functional boundaries (Nonaka et al., 2008). This bridging role becomes particularly significant in virtual teams, where knowledge is often distributed across multiple geographical locations and professional disciplines. Wise leaders actively encourage interdisciplinary collaboration, establish

mechanisms for collaborative reflection, and support the integration of diverse perspectives into coherent organisational knowledge. Such leadership behaviours promote higher-order learning processes, including collective reflection, experimentation, adaptive problem-solving, and innovation, which ultimately strengthen team effectiveness and organisational resilience (Ali & Abdulmuhsin, 2021).

The principles of social learning theory further reinforce this relationship by suggesting that employees acquire behaviours through observing credible role models (Bandura, 1986). Wise leaders demonstrate openness, reflective thinking, ethical judgement, and collaborative problem-solving through their daily interactions, thereby providing behavioural models that employees emulate during virtual collaboration. Over time, these behaviours become embedded within team norms, encouraging continuous knowledge sharing, constructive feedback, and collective learning across dispersed organisational members. As learning behaviours become institutionalised, virtual teams develop stronger adaptive capabilities and improved performance in complex knowledge-intensive environments (Abdulmuhsin & Ali, 2022).

Empirical studies consistently support the positive influence of leadership behaviours characterised by humility, ethical conduct, knowledge facilitation, and collaborative decision-making on team learning outcomes. Research demonstrates that leaders who encourage dialogue, psychological safety, and knowledge exchange significantly enhance team learning, innovation, and adaptive performance, particularly within complex and virtual work settings (Abdulmuhsin & Tarhini, 2020; Ali & Abdulmuhsin, 2021; Li et al., 2017; McKenna & Rooney, 2019; Nonaka & Takeuchi, 2019). Consequently, WL theory provides a robust theoretical explanation for understanding how leaders cultivate the cognitive, behavioural, and social conditions necessary for effective VTL. It is therefore reasonable to propose that WL positively influences VTL by fostering collaborative knowledge creation, ethical interaction, contextual judgement, and continuous organisational learning. Therefore:

*H1: Wise leadership has a direct positive effect on virtual team learning.*

### *3.2 The Mediating Role of Organisational Storytelling*

Although WL theory proposes that leaders directly influence organisational learning through practical wisdom, ethical judgement, and knowledge creation, contemporary knowledge management research increasingly suggests that this influence is rarely realised through leadership behaviours alone. Instead, leaders require effective social mechanisms that enable employees to interpret, internalise, and disseminate knowledge across organisational boundaries (Abdulmuhsin & Ali, 2022). Among these mechanisms, OS has emerged as one of the most powerful vehicles for transforming

leadership wisdom into collective learning because it converts abstract principles, tacit knowledge, and lived experiences into meaningful narratives that employees can understand, remember, and apply in their daily work (Denning, 2021). Consequently, OS provides a theoretically compelling explanation of how WL behaviours are translated into enhanced VTL, positioning storytelling as a critical mediating mechanism within knowledge-intensive organisations.

From the perspective of WL theory, practical wisdom (phronesis) extends beyond possessing superior judgement; it also encompasses the leader's ability to communicate that wisdom in ways that inspire understanding, reflection, and collective action (Nonaka & Takeuchi, 2019). Wise leaders recognise that knowledge is socially constructed rather than merely transmitted, requiring employees to engage actively in interpreting experiences and deriving shared meaning. OS facilitates this process by embedding practical wisdom within authentic narratives that illustrate how organisational values, ethical principles, and strategic decisions are enacted in real organisational contexts. Rather than communicating knowledge through abstract instructions or formal procedures, wise leaders employ stories to demonstrate how complex problems have been successfully navigated, thereby enabling employees to acquire contextual understanding that supports future decision-making and collaborative learning (Abdulmuhsin & Tarhini, 2020; Ali & Abdulmuhsin, 2021).

The mediating role of OS can also be explained through knowledge creation theory. According to Nonaka and colleagues, organisational knowledge develops through continuous interaction between tacit and explicit knowledge, facilitated by socialisation, externalisation, combination, and internalisation processes (Nonaka et al., 2008). Storytelling represents one of the most effective mechanisms for externalising tacit knowledge because it transforms leaders' personal experiences, intuition, and practical judgement into narratives that can be shared, discussed, and collectively interpreted by organisational members. In doing so, stories bridge the gap between individual wisdom and collective organisational knowledge, allowing dispersed employees to access rich experiential insights that would otherwise remain embedded within individual leaders. Consequently, storytelling strengthens the knowledge conversion processes that underpin VTL by making tacit knowledge accessible across geographical, functional, and cultural boundaries (Abdulmuhsin & Ali, 2022).

Within virtual teams, the mediating role of storytelling becomes particularly important because physical separation often reduces opportunities for informal interaction, observational learning, and spontaneous knowledge exchange (Ali & Abdulmuhsin, 2021). Digital communication technologies facilitate information transfer but frequently struggle to convey the contextual richness, emotional nuance, and experiential depth necessary for effective collaborative learning. Organisational stories compensate for these limitations by creating shared cognitive and emotional reference points that strengthen collective understanding among geographically dispersed team members. Through stories,

leaders communicate organisational history, explain strategic decisions, reinforce cultural values, and illustrate effective responses to uncertainty, thereby reducing ambiguity and enhancing knowledge integration across virtual teams (Abdulmuhsin & Tarhini, 2020; Ali & Abdulmuhsin, 2021). As team members collectively interpret these narratives, they develop shared mental models that facilitate coordinated action, collaborative problem-solving, and continuous learning despite geographical distance.

Furthermore, OS reinforces several psychological conditions that are essential for VTL. Authentic narratives foster interpersonal trust by revealing leaders' experiences, challenges, and learning journeys, thereby reducing perceived hierarchical distance and encouraging reciprocal openness among team members (Ali & Abdulmuhsin, 2021). Stories also promote psychological safety by normalising learning through experimentation, acknowledging mistakes as opportunities for improvement, and demonstrating that uncertainty is an inherent characteristic of organisational life rather than a source of individual failure. These psychological outcomes encourage employees to participate more actively in knowledge sharing, reflective dialogue, and collaborative experimentation, all of which represent fundamental dimensions of VTL (Denning, 2021; Edmondson, 1999). Thus, storytelling enhances the social environment through which WL exerts its influence on collective learning processes.

The mediating function of OS is also supported by social learning theory (Bandura, 1986), which argues that individuals learn not only through direct experience but also through observing and interpreting others' behaviours and experiences. Organisational stories provide symbolic models that illustrate desirable leadership behaviours, ethical decision-making, collaborative problem-solving, and effective responses to organisational challenges. As employees internalise these narratives, they develop behavioural expectations and learning orientations that reinforce knowledge sharing and collective learning within virtual teams. In this way, storytelling transforms leadership values into shared organisational practices that extend beyond the leader's immediate interactions (Abdulmuhsin & Ali, 2022).

Therefore, OS serves as the critical relational mechanism that connects WL with VTL by translating leaders' practical wisdom into collective organisational knowledge. Through authentic narratives, wise leaders externalise tacit knowledge, strengthen shared understanding, reinforce organisational values, and cultivate trust, psychological safety, and collaborative reflection among dispersed employees. Consequently, storytelling amplifies the positive influence of WL on VTL by facilitating knowledge creation, enhancing social interaction, and enabling geographically dispersed teams to transform individual experiences into collective learning capabilities. Therefore, it is theoretically justifiable to propose that OS mediates the positive relationship between WL and VTL,

providing the social and cognitive processes through which leadership wisdom is transformed into sustained collaborative learning and organisational adaptability. Thus:

*H2a: Wise leadership has a direct positive effect on organisational storytelling.*

*H2b: Organisational storytelling has a direct positive effect on virtual team learning.*

*H2c: Organisational storytelling mediates the positive relationship between Wise leadership and virtual team learning.*

## **4. Methodology**

### *4.1 Data Collection*

Data were collected using a quantitative, cross-sectional survey design, which is widely recognised as an appropriate methodological approach for examining relationships among latent organisational constructs measured through employees' perceptions (Hair et al., 2022). A cross-sectional design was considered particularly suitable because the study sought to investigate the direct relationship between WL and VTL, as well as the mediating role of OS, at a single point in time. This design enables the systematic collection of standardised responses from a relatively large population while facilitating statistical examination of theoretically specified relationships among multiple constructs.

The empirical investigation was conducted within the Directorates of the Ministry of Education operating in the Kurdistan Region of Iraq, specifically the representative offices located in Erbil, Duhok, and Sulaymaniyah. These organisations provided an appropriate research context because they increasingly relied on virtual teamwork and digital communication technologies following the organisational changes associated with the COVID-19 pandemic. The transition towards remote collaboration created an environment in which leadership, organisational communication, and virtual learning processes became particularly salient, thereby offering an appropriate setting for examining the proposed conceptual framework.

Prior to the full-scale survey, preliminary field visits and informal discussions were conducted with managers responsible for human resource administration in the three representative offices. These consultations served several purposes, including confirming the practical relevance of the research problem, ensuring that the proposed constructs reflected organisational realities, and facilitating access to potential respondents. Furthermore, the interviews assisted the author in refining the wording of several questionnaire items to improve clarity and contextual suitability without altering their underlying theoretical meaning.

The survey instrument was administered using a mixed-mode approach consisting of both electronic and paper-based questionnaires. The electronic version was developed using Google Forms



and distributed through official organisational communication groups after obtaining the necessary administrative approvals. Simultaneously, printed questionnaires were personally distributed to employees working on-site to maximise participation while avoiding duplicate responses. Employing both administration modes increased accessibility, reduced geographical barriers, and enhanced response rates by allowing participants to complete the questionnaire through their preferred communication channel.

Data collection was undertaken over a six-month period extending from March to August 2023. Participation was entirely voluntary, and respondents were informed about the academic purpose of the study, the anonymity of their responses, and the confidentiality of all collected information before completing the questionnaire. No personally identifiable information was requested, thereby minimising social desirability bias and encouraging honest responses. The online survey also reduced interviewer bias while providing participants with the flexibility to complete the questionnaire at a convenient time, an important consideration given the geographical dispersion of employees and the continuing operational restrictions associated with the pandemic (Cantrell & Lupinacci, 2007; Liu, 2008).

#### *4.2 Study Sample*

The target population comprised all employees working within the Representative Offices of the Ministry of Education located in the three governorates of the Kurdistan Region of Iraq, namely Erbil, Duhok, and Sulaymaniyah. These representative offices were established by the Iraqi Ministry of Education in 2014 to maintain the continuity of educational services following the large-scale internal displacement caused by the security crisis in northern Iraq. Since their establishment, these organisations have played a pivotal role in coordinating educational activities, supporting displaced teaching staff, managing virtual administrative operations, and facilitating distance education, particularly during the COVID-19 pandemic. Their extensive reliance on technology-enabled teamwork made them an appropriate empirical setting for investigating WL, OS, and VTL.

The total population consisted of 483 employees, distributed across the three representative offices, including educational supervisors, administrative personnel, and technical staff. Based on conventional sample size determination procedures for finite populations, a minimum sample of 193 respondents was considered sufficient to achieve a 95% confidence level with an acceptable margin of sampling error. Prior to data collection, an a priori statistical power analysis was also conducted to ensure adequate statistical power for testing the proposed structural relationships. The analysis indicated that a minimum of approximately 190 participants would provide a statistical power of 0.90 for detecting significant relationships among the study constructs at the specified significance level.

Consequently, the achieved sample exceeded both the minimum sample size requirement and the statistical power threshold recommended for structural equation modelling research.

Given the practical constraints associated with accessing respondents across geographically dispersed organisations, the study employed a convenience sampling strategy. Although convenience sampling is classified as a non-probability sampling technique, it is widely adopted in organisational behaviour and management research where comprehensive sampling frames are unavailable or organisational access is restricted. Furthermore, this approach was appropriate because the study focused on employees who had direct experience of working within virtual teams and regularly used information and communication technologies (ICTs) to accomplish organisational tasks.

A total of 250 questionnaires were distributed to eligible employees across the three representative offices using both electronic and paper-based formats. Following two successive data collection periods of approximately one month each, 240 completed questionnaires were returned, representing a response rate of 96.0%. After careful data screening, eight questionnaires were excluded because the respondents indicated that they had not used communication technologies to collaborate with colleagues during the study period, which conflicted with the inclusion criteria for investigating VTL. Consequently, the final analytical sample consisted of 232 valid responses, yielding an effective response rate of 92.8%, substantially exceeding the minimum sample size required for statistical analysis.

The final sample demonstrated considerable demographic diversity regarding gender, age, educational attainment, organisational tenure, team roles, and geographical location. Respondents represented both team leaders and team members from the three representative offices, all of whom reported regular use of ICTs in performing collaborative work. This diversity enhanced the representativeness of organisational experiences captured by the study and provided a robust empirical basis for examining how WL influences VTL through OS within educational organisations operating in technology-mediated environments.

### *4.3 Measures*

The measurement instrument was developed following an extensive review of the leadership, OS, and organisational learning literature to ensure strong theoretical alignment and content validity. All measurement items were adapted from previously validated scales and refined to suit the organisational context of the Representative Offices of the Ministry of Education in the Kurdistan Region of Iraq. Prior to the main survey, the questionnaire underwent expert evaluation by academics specialising in business administration, organisational behaviour, and knowledge management to assess item clarity, content relevance, construct representativeness, and linguistic appropriateness.

Minor wording modifications were subsequently introduced without altering the theoretical meaning of the original measures. The final questionnaire consisted of two sections: the first captured respondents' demographic characteristics, whereas the second measured the three principal latent constructs investigated in this study.

The independent construct, WL, was conceptualised as leaders' capability to combine practical wisdom, ethical judgement, contextual understanding, and knowledge creation to guide organisational members towards achieving the common good (Abdulmuhsin & Ali, 2022; Abdulmuhsin & Tarhini, 2020; Nonaka & Takeuchi, 2019). The construct was operationalised using 15 measurement items representing six complementary dimensions: good judgement, sharing contexts with others, grasping the essence of situations, reconstructing underlying assumptions, realising the common good, and cultivating wisdom. These dimensions collectively capture the multidimensional nature of WL by emphasising contextual decision-making, collaborative knowledge creation, ethical responsibility, and continuous leadership development.

The mediating construct, OS, was measured using 25 items adapted primarily from Hartman et al. (2019) to assess employees' perceptions of storytelling effectiveness within virtual organisational environments. The construct comprised five dimensions: user requirements, emotional appeal, perceived realism, technical characteristics, and interaction. Together, these dimensions evaluate both the communicative and technological aspects of OS, including narrative quality, emotional engagement, realism of presentation, digital delivery quality, and interactive communication. This multidimensional operationalisation reflects the contemporary view that storytelling represents a strategic knowledge-sharing mechanism rather than merely a communication tool.

The dependent construct, VTL, was operationalised using 35 measurement items adapted from established organisational learning literature, particularly the work of Ali and Abdulmuhsin (2021), (Abdulmuhsin & Ali, 2022), Chiu et al. (2020) and related studies on team learning processes. The construct incorporated five dimensions: knowledge sharing, co-construction and constructive conflict, boundary-crossing value management, team reflexivity, and knowledge storage and retrieval. These dimensions collectively represent the behavioural processes through which virtual teams acquire, integrate, reflect upon, preserve, and utilise knowledge to enhance collective performance and continuous learning. The multidimensional structure recognises VTL as a dynamic and collaborative capability extending beyond individual knowledge acquisition.

All questionnaire items were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The five-point response format was selected because it provides an appropriate balance between measurement sensitivity and respondent simplicity while reducing response fatigue and improving data quality. Furthermore, the use of previously validated

measurement scales adapted to the study context enhances construct validity, facilitates comparisons with prior research, and supports the subsequent assessment of reliability and validity within the structural equation modelling framework.

#### *4.4 Statistical Analysis*

The data were analysed using a multistage statistical procedure to ensure the robustness of both the measurement model and the structural model. Initially, all completed questionnaires were screened for completeness, response consistency, and eligibility before statistical analysis. Responses from participants who did not meet the study's inclusion criteria, particularly those without experience using information and communication technologies (ICTs) for collaborative work, were excluded from the final dataset. Subsequently, the remaining data were coded and entered into IBM SPSS Statistics for preliminary statistical analyses, while AMOS was employed to estimate the measurement and structural models using covariance-based Structural Equation Modelling (CB-SEM). This analytical approach was considered appropriate because the study sought to simultaneously assess the psychometric properties of multiple latent constructs and examine a theoretically specified mediation model.

The statistical analysis commenced with descriptive statistics to summarise respondents' demographic characteristics and describe the distribution of the study variables. Frequencies, percentages, means, and standard deviations were calculated to provide an overview of participants' profiles and their perceptions regarding WL, OS, and VTL. Correlation analysis was subsequently conducted to examine the magnitude and direction of the associations among the study constructs and to provide preliminary evidence supporting the proposed conceptual relationships.

Following the preliminary analyses, the psychometric quality of the measurement model was rigorously evaluated through Confirmatory Factor Analysis (CFA). The assessment included examining indicator reliability, construct reliability, convergent validity, and discriminant validity. Internal consistency reliability was evaluated using Cronbach's alpha ( $\alpha$ ) and Composite Reliability (CR), whereas convergent validity was assessed through the Average Variance Extracted (AVE) and standardised factor loadings. Discriminant validity was examined by comparing the relationships among latent constructs to ensure that each construct captured a conceptually distinct organisational phenomenon. Collectively, these procedures established the reliability and validity of the measurement scales before testing the structural relationships among the constructs.

The structural model was then estimated using Structural Equation Modelling (SEM) to evaluate the hypothesised direct and indirect relationships. Standardised path coefficients, critical ratios, and probability values were examined to determine the significance of the proposed hypotheses.

Particular attention was devoted to assessing the mediating effect of OS on the relationship between WL and VTL. The mediation analysis enabled the decomposition of the total effect into its direct and indirect components, thereby providing a more comprehensive understanding of the underlying causal mechanisms linking leadership behaviour with VTL outcomes.

Model adequacy was further assessed using multiple goodness-of-fit indices commonly recommended in covariance-based SEM research. These included the Chi-square to degrees-of-freedom ratio ( $\chi^2/\text{df}$ ), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Goodness-of-Fit Index (GFI), Root Mean Square Error of Approximation (RMSEA), and Standardised Root Mean Square Residual (SRMR). Employing multiple fit indices provides a more comprehensive evaluation of model performance than reliance on a single statistic and enhances confidence in the validity of the proposed theoretical framework (Hair et al., 2022). Thus, this integrated analytical strategy provided a rigorous basis for validating the measurement model, testing the proposed hypotheses, and evaluating the mediating role of OS within the conceptual framework.

## **5. Results**

### *5.1 Sample Demographics*

The final sample consisted of 232 valid responses from employees working in the Representative Offices of the Ministry of Education in Duhok, Erbil, and Sulaymaniyah. The demographic profile indicates that the sample was sufficiently diverse and suitable for examining leadership, storytelling, and VTL. Males represented 67.24% of respondents, while females accounted for 32.76%. In terms of age, the largest group was between 36 and 45 years old (38.79%), followed by those aged 26-35 years (31.03%), suggesting that most respondents were professionally mature yet still active users of digital work practices.

Educationally, most respondents held a bachelor's degree (60.78%), followed by diploma holders (22.84%), master's degree holders (10.78%), higher diploma holders (3.88%), and PhD holders (1.72%). This educational profile suggests that respondents possessed adequate academic and cognitive capacity to understand the questionnaire items and provide reliable judgements about their organisational reality. Regarding work experience, 46.98% had 1-10 years of experience, while 34.05% had 11-20 years. Moreover, 75.86% participated as team members and 24.14% as team leaders. All respondents reported using information and communication technologies in their work, confirming the relevance of the sample for studying VTL. Geographically, 43.10% worked in Duhok, 42.24% in Erbil, and 14.66% in Sulaymaniyah – see Table 1.

**Table 1. Demographic characteristics of the respondents**

| Demographics              | Category              | Frequency | Percentage % |
|---------------------------|-----------------------|-----------|--------------|
| Gender                    | <i>Male</i>           | 156       | 67.24        |
|                           | <i>Female</i>         | 76        | 32.76        |
| Age (#years)              | <i>Less than 26</i>   | 12        | 5.17         |
|                           | <i>26–35</i>          | 72        | 31.03        |
|                           | <i>36–45</i>          | 90        | 38.79        |
|                           | <i>46–55</i>          | 45        | 19.40        |
|                           | <i>More than 55</i>   | 13        | 5.60         |
|                           | <i>Diploma</i>        | 53        | 22.84        |
|                           | <i>BSc</i>            | 141       | 60.78        |
| Educational qualification | <i>Higher diploma</i> | 9         | 3.88         |
|                           | <i>MSc</i>            | 25        | 10.78        |
|                           | <i>PhD</i>            | 4         | 1.72         |
|                           | <i>1–10</i>           | 109       | 46.98        |
| Work experience (#years)  | <i>11–20</i>          | 79        | 34.05        |
|                           | <i>21–30</i>          | 31        | 13.36        |
|                           | <i>More than 30</i>   | 13        | 5.60         |
|                           | <i>Team leader</i>    | 56        | 24.14        |
| Role in team              | <i>Team member</i>    | 176       | 75.86        |
|                           | <i>Yes</i>            | 232       | 100.00       |
| ICT use                   | <i>No</i>             | 0         | 0.00         |
|                           | <i>Duhok</i>          | 100       | 43.10        |
| Representative office     | <i>Erbil</i>          | 98        | 42.24        |
|                           | <i>Sulaymaniyah</i>   | 34        | 14.66        |

**Source:** Author's own work

## 5.2 Testing the Measurement Model

Before testing the structural relationships, the measurement model was assessed to ensure that the scales used in the study were psychometrically sound. The study first examined the theoretical validity of the questionnaire through expert review. The initial instrument was developed from established measures related to WL, OS, and Team Learning, then translated, revised, and evaluated by academic specialists in administrative sciences. Their feedback led to minor refinements in wording, deletion, and item clarity, thereby improving the theoretical and linguistic suitability of the measurement tool for the study context.

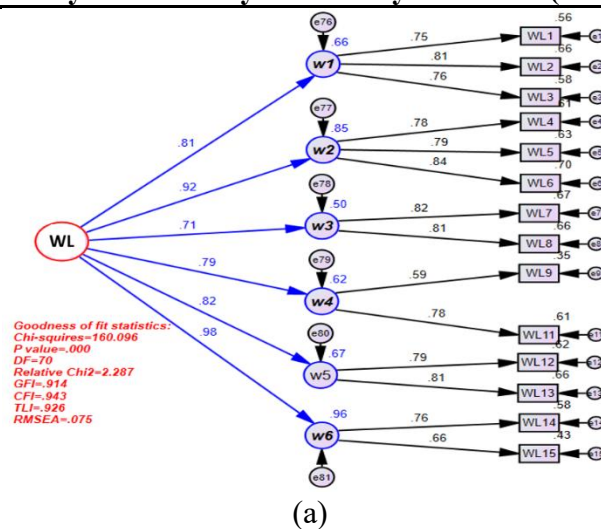
A preliminary test–retest procedure was also conducted using 12 participants from the Duhok Representative Office. The questionnaire was administered twice, with a one-week interval between the two rounds. The correlation coefficients between the two administrations ranged from 89.55% to 95.66%, indicating a high level of temporal stability and confirming that the instrument could consistently capture respondents' perceptions.

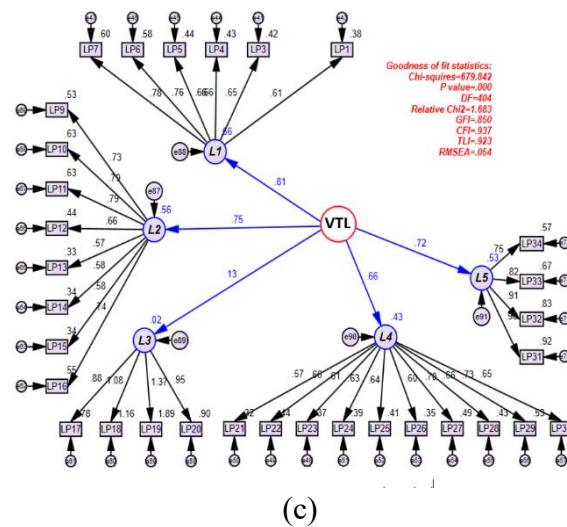
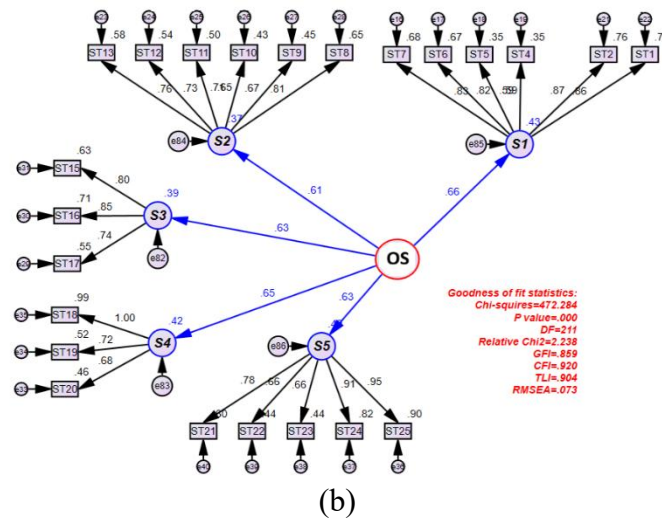
The exploratory factor analysis (EFA) results supported the underlying factor structure of the three constructs. For WL, the factor loadings were distributed across six dimensions and ranged

between 0.689 and 0.703, exceeding the recommended threshold of 0.60. The Kaiser–Meyer–Olkin value was 0.898, with Bartlett’s test significant at  $p < 0.001$ , confirming sampling adequacy. For OS, the loadings ranged from 0.621 to 0.654 across five dimensions, with a KMO value of 0.870 and a significant Bartlett’s test. Similarly, VTL showed loadings ranging from 0.613 to 0.720 across five dimensions, with a KMO value of 0.869 and a significant Bartlett’s test. These results indicate that the data were suitable for factor analysis and that the items clustered meaningfully around their intended theoretical dimensions.

Confirmatory factor analysis (CFA) was then performed using AMOS – see Figure 2. For WL, the squared multiple correlations ranged from 0.350 to 0.702 after deleting WL10, whose value was below the acceptable threshold. The model fit indices were acceptable:  $\chi^2/df = 2.474$ , RMSEA = 0.080, GFI = 0.901, CFI = 0.930, and TLI = 0.910. For OS, ST1 and ST14 were removed because of weak explanatory values, after which the model achieved satisfactory fit:  $\chi^2/df = 2.238$ , RMSEA = 0.073, GFI = 0.859, CFI = 0.920, and TLI = 0.904. For VTL, LP2, LP8, and LP35 were deleted, and the resulting model fit was strong:  $\chi^2/df = 1.683$ , RMSEA = 0.054, GFI = 0.850, CFI = 0.937, and TLI = 0.923.

**Figure 2. The exploratory factor analysis of study variables (WL, ST, and LP)**





**Source:** Author's own work

Reliability and validity were further supported. Cronbach's alpha values ranged from 0.932 to 0.973, while composite reliability ranged from 0.996 to 0.997, exceeding the recommended 0.70 threshold. AVE values ranged from 0.927 to 0.967, confirming convergent validity. Discriminant validity was also established, as the square roots of AVE for WL, ST, and LP were higher than the corresponding inter-construct correlations. As shown in Tables 2 and 3, the measurement model demonstrated strong reliability, convergent validity, and discriminant validity, allowing the structural model to be tested with confidence.

### 5.3 Testing the Structural Model

After confirming the adequacy of the measurement model, the structural model was tested using SEM through SPSS and AMOS. The purpose of this stage was to examine the direct and indirect relationships among WL, OS, and VTL. The results in Figure 3 and Table 4 reveal strong and



statistically significant correlations among the three principal constructs. WL was positively correlated with OS ( $r = 0.780$ ,  $p < 0.001$ ), WL was positively correlated with VTL ( $r = 0.760$ ,  $p < 0.001$ ), and OS was positively correlated with VTL ( $r = 0.819$ ,  $p < 0.001$ ). These correlations provide preliminary evidence that the three constructs are theoretically and empirically connected.

**Table 2. Reliability, convergent validity, and descriptive statistics of the measurement model**

| Construct                               | Items | Mean  | SD    | CR    | AVE   | WL           | OS           | VTL          |
|-----------------------------------------|-------|-------|-------|-------|-------|--------------|--------------|--------------|
| <i>Wise Leadership (WL)</i>             | 15    | 3.924 | 0.418 | 0.997 | 0.967 | <b>0.915</b> |              |              |
| <i>Organisational Storytelling (OS)</i> | 25    | 3.839 | 0.507 | 0.997 | 0.927 | 0.780**      | <b>0.918</b> |              |
| <i>Virtual Team Learning (VTL)</i>      | 35    | 4.007 | 0.555 | 0.996 | 0.945 | 0.760**      | 0.819**      | <b>0.922</b> |

**Notes:** CR = Composite Reliability; AVE = Average Variance Extracted; SD = Standard Deviation. Values shown in parentheses on the diagonal are Cronbach's alpha ( $\alpha$ ). \*\*  $p < 0.001$ .

**Source:** Author's own work

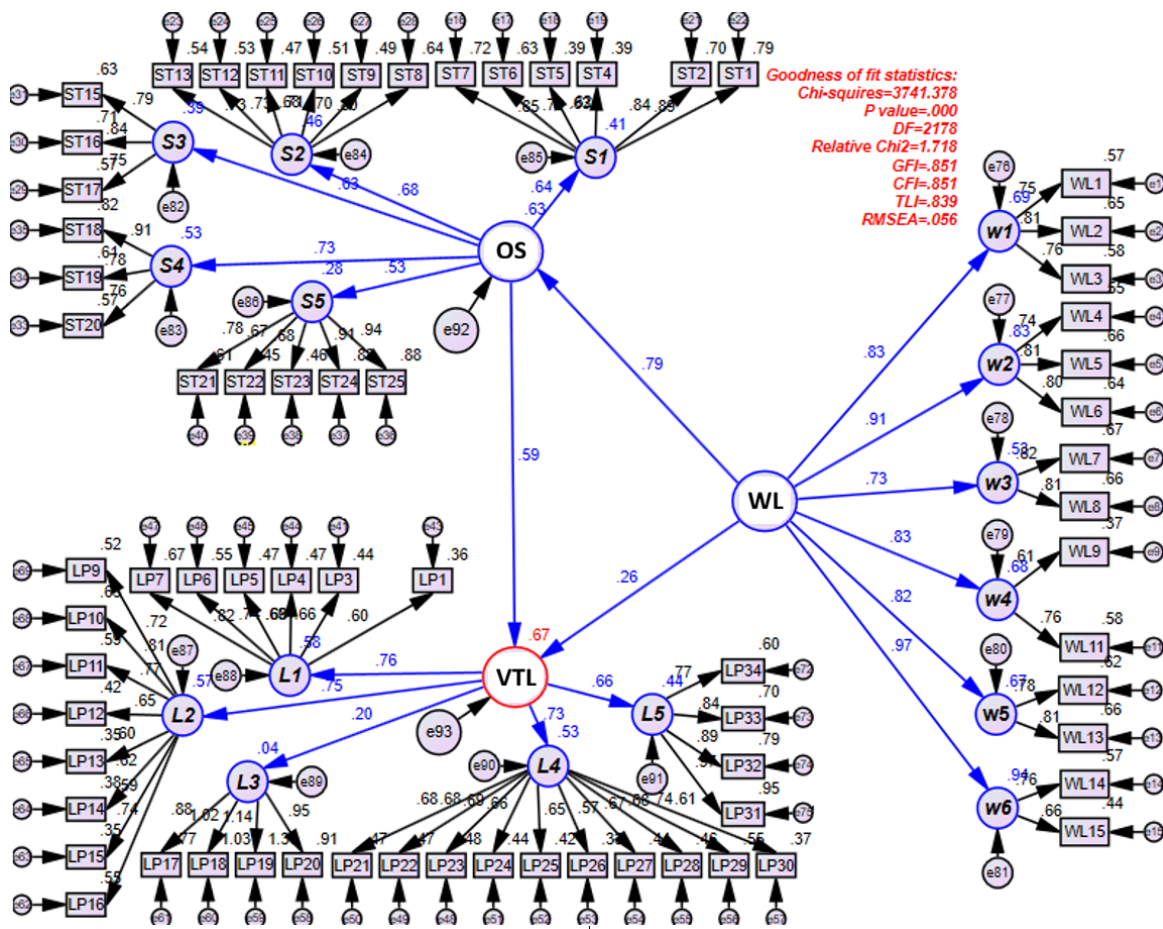
**Table 3. Discriminant validity using the Fornell–Larcker criterion**

| Construct                               | WL           | OS           | VTL          |
|-----------------------------------------|--------------|--------------|--------------|
| <i>Wise Leadership (WL)</i>             | <b>0.983</b> |              |              |
| <i>Organisational Storytelling (OS)</i> | 0.179**      | <b>0.963</b> |              |
| <i>Virtual Team Learning (VTL)</i>      | 0.220**      | 0.143**      | <b>0.972</b> |

**Notes:** Diagonal values (bold) represent the square root of the Average Variance Extracted ( $\sqrt{AVE}$ ). Off-diagonal values represent correlations among the latent constructs. The square root of AVE exceeds the corresponding inter-construct correlations, supporting discriminant validity according to the Fornell–Larcker criterion (Fornell & Larcker, 1981). \*\*  $p < 0.001$ .

**Source:** Author's own work

The first hypothesis (H1) state that WL directly influences VTL. The findings supported this relationship, although the direct effect was weaker than the effect transmitted through storytelling. WL had a positive and significant direct effect on VTL ( $\beta = 0.264$ ,  $SE = 0.088$ ,  $CR = 3.000$ ,  $p < 0.001$ ). This indicates that wise leaders contribute directly to team learning by encouraging reflection, supporting knowledge exchange, promoting ethical collaboration, and creating conditions in which team members feel able to question assumptions and learn from one another. The result also implies that leadership wisdom is particularly valuable in virtual environments where uncertainty, digital distance, and task complexity may otherwise weaken collective learning.

**Figure 3. The structural model of study**

**Source:** Author's own work

The second hypothesis (H2a) proposed that WL positively influences OS. The SEM results supported this hypothesis. WL had a strong and significant effect on OS ( $\beta = 0.793$ ,  $SE = 0.072$ ,  $CR = 11.014$ ,  $p < 0.001$ ). This indicates that when leaders demonstrate WL capabilities, such as good judgement, contextual awareness, ethical reasoning, and the ability to cultivate wisdom, OS becomes more active and meaningful. The model explained 63% of the variance in OS, suggesting that WL is a powerful driver of narrative-based communication and knowledge sharing within virtual teams.

The third hypothesis (H2b) propose that OS positively influences VTL. This hypothesis was also supported. OS exerted a significant positive effect on VTL ( $\beta = 0.595$ ,  $SE = 0.158$ ,  $CR = 3.766$ ,  $p < 0.001$ ). This result suggests that storytelling functions as more than a communication practice; it acts as a learning mechanism through which employees exchange experience, interpret complex events, preserve organisational memory, and transform individual knowledge into collective understanding. In virtual team contexts, where face-to-face interaction is limited, storytelling appears to create a

shared cognitive and emotional space that facilitates knowledge sharing, reflection, and collaborative learning.

**Table 4. Structural model results and hypothesis testing**

| H   | Structural Path                                       | $\beta$ | SE    | CR     | P-value | Decision  |
|-----|-------------------------------------------------------|---------|-------|--------|---------|-----------|
| H1  | $WL \rightarrow VTL$                                  | 0.264   | 0.088 | 3.000  | 0.001   | Supported |
| H2a | $WL \rightarrow OS$                                   | 0.793   | 0.072 | 11.014 | 0.001   | Supported |
| H2b | $OS \rightarrow VTL$                                  | 0.595   | 0.158 | 3.766  | 0.001   | Supported |
| H2c | $WL \rightarrow OS \rightarrow VTL$ (Indirect Effect) | 0.471   | 0.115 | 4.096  | 0.001   | Supported |

**Notes:** H= Hypothesis;  $\beta$  = Standardised path coefficient; SE = Standard Error; CR = Critical Ratio. All structural relationships are statistically significant at  $p < 0.001$ .

**Source:** Author's own work

The fourth hypothesis (H2c) examine the mediating role of OS in the relationship between WL and VTL. The indirect effect was significant ( $\beta = 0.471$ , SE = 0.115, CR = 4.096,  $p < 0.001$ ), confirming the mediating role of storytelling. This finding means that WL enhances VTL not only through direct behavioural influence but also by activating organisational stories that translate leadership wisdom into shared lessons, meanings, and practices. The total effect of WL on VTL reached 0.735, indicating a substantial overall influence.

The structural model demonstrate a good overall fit to the data ( $\chi^2 = 3741.378$ , df = 2178,  $\chi^2/df = 1.718$ , RMSEA = 0.056, GFI = 0.851, CFI = 0.851, and TLI = 0.839). All fit indices met the recommended cut-off values (Hair et al., 2022; Kline, 2023), confirming that the hypothesised model adequately explained the relationships among the latent constructs. Consequently, the structural model was deemed appropriate for testing the proposed hypotheses and examining both the direct and mediating effects.

In the light of above, the structural model provides strong empirical support for all proposed hypotheses. The results show that WL enhances OS, OS strengthens VTL, and WL contributes both directly and indirectly to learning processes in virtual teams. The evidence highlights storytelling as a vital bridge between leadership wisdom and collective learning, particularly in digitally mediated educational organisations facing uncertainty and operational complexity.

## 6. Discussion

This study set out to examine how WL enhances VTL through the mediating role of OS within the Representative Offices of the Ministry of Education in the Kurdistan Region of Iraq. The findings provide robust empirical support for the proposed conceptual framework, confirming that all

hypothesised relationships are positive and statistically significant. More importantly, the study extends the literature by integrating WL theory, OS, and VTL into a unified explanatory model.

The findings demonstrate that WL exerts a significant positive influence on VTL, supporting the argument that leadership grounded in practical wisdom, ethical judgement, contextual awareness, and knowledge creation constitutes a critical organisational capability for promoting collective learning (Abdulmuhsin & Ali, 2022). This finding reinforces the proposition of Nonaka and Takeuchi (2019) that wise leaders function not merely as decision-makers but as facilitators of organisational knowledge creation who cultivate environments conducive to continuous learning. Likewise, the results corroborate previous studies indicating that leadership behaviours significantly influence team learning by encouraging knowledge sharing, collaboration, and reflective practices (Bouwman et al., 2018; Li et al., 2017). Within the investigated educational organisations, leaders successfully established collaborative working environments by encouraging teamwork, maintaining continuous communication, and fostering shared contexts for knowledge exchange despite the geographical dispersion imposed by the COVID-19 pandemic. These practices strengthened employees' willingness to learn collectively and enhanced the integration of individual knowledge into team capabilities.

The findings further indicate that WL particularly strengthened learning behaviours associated with knowledge sharing, collaborative reflection, and collective problem-solving. Employees reported greater willingness to exchange expertise, discuss diverse viewpoints, analyse organisational challenges collectively, and adapt work practices to rapidly changing circumstances (Ali & Abdulmuhsin, 2021). These findings support organisational learning theory, which argues that leadership creates the social conditions necessary for teams to acquire, integrate, and apply knowledge effectively (Argote & Miron-Spektor, 2011). However, the results also reveal that leaders experienced comparatively greater difficulty in strengthening boundary-spanning learning activities, particularly those involving access to specialised expertise beyond immediate organisational networks. This observation is understandable given the uncertainty, mobility restrictions, and communication barriers associated with the pandemic, which constrained opportunities for external collaboration and reduced access to specialised knowledge resources (Abdulmuhsin & Ali, 2022; Ali & Abdulmuhsin, 2021). Consequently, although WL substantially enhanced internal learning processes, developing mechanisms for boundary-crossing knowledge acquisition remains an important managerial challenge.

Perhaps the most important contribution of this study lies in demonstrating the mediating role of OS. The results indicate that storytelling significantly amplifies the influence of WL on VTL, with the indirect effect exceeding the direct effect of leadership alone. This finding provides empirical support for the proposition that leadership effectiveness is strengthened when practical wisdom is communicated through meaningful organisational narratives rather than solely through formal

directives. Stories enabled leaders to contextualise organisational experiences, communicate lessons learned, reinforce shared values, and encourage employees to interpret complex situations collectively (Abdulmuhsin & Ali, 2022; Ali & Abdulmuhsin, 2021). These findings are consistent with knowledge creation theory, which views storytelling as an effective mechanism for externalising tacit knowledge and transforming individual experience into shared organisational understanding (Denning, 2021; Nonaka et al., 2008). Similarly, the findings align with Chiu et al. (2020), who argued that indirect mechanisms frequently explain a larger proportion of team learning than direct leadership behaviours alone.

The study also highlights the strategic importance of digital storytelling within virtual work environments. During the pandemic, organisational narratives were predominantly communicated through digital collaboration platforms, enabling geographically dispersed employees to remain connected despite limited face-to-face interaction. Respondents perceived storytelling as particularly effective when narratives contained sufficient contextual detail, stimulated curiosity, enhanced understanding, and facilitated interpersonal communication (Abdulmuhsin & Ali, 2022). Furthermore, the technological quality of virtual communication platforms, including reliable audio, video, and uninterrupted connectivity, strengthened the effectiveness of storytelling by preserving communication quality throughout collaborative interactions. These findings suggest that technological infrastructure and narrative communication complement one another in facilitating virtual learning, supporting recent research emphasising the integration of digital technologies and knowledge-sharing practices in contemporary organisations.

The findings additionally reveal that the emotional dimension of storytelling played a significant role in strengthening collective learning. Leaders who employed empathetic communication, appropriate verbal and visual cues, and emotionally engaging narratives were more successful in motivating team members to collaborate and exchange knowledge (Ali & Abdulmuhsin, 2021). These observations reinforce social learning theory, which proposes that individuals learn through observing and interpreting socially meaningful behaviours (Bandura, 1986). By communicating organisational experiences through authentic stories, wise leaders established psychological safety, strengthened interpersonal trust, and encouraged reflective dialogue, all of which represent essential antecedents of effective VTL. Nevertheless, respondents reported comparatively weaker perceptions regarding the realism of digitally mediated storytelling, particularly concerning non-verbal communication such as facial expressions, gestures, eye contact, and body language. This finding suggests that although virtual communication technologies effectively support knowledge transfer, they cannot yet fully replicate the richness of face-to-face narrative interaction (Abdulmuhsin & Ali, 2022; Ali & Abdulmuhsin, 2021).

In total, the findings demonstrate that WL, OS, and VTL constitute complementary organisational capabilities rather than isolated phenomena. Wise leaders create the strategic and ethical conditions for learning, storytelling translates leadership wisdom into shared organisational knowledge, and VTL transforms that knowledge into collaborative capability and organisational adaptation. The study therefore contributes to the theoretical advancement of knowledge-based leadership by demonstrating that leadership effectiveness in virtual environments depends not only upon leaders' personal capabilities but also upon their ability to communicate practical wisdom through compelling narratives that stimulate collective learning. These findings provide a stronger understanding of how educational organisations can sustain learning, collaboration, and organisational resilience in increasingly digital and uncertain working environments.

## **7. Conclusion**

This study examined the influence of WL on VTL and investigated the mediating role of OS within the Representative Offices of the Ministry of Education in the Kurdistan Region of Iraq. Drawing upon WL theory and the knowledge-based view of organisations, the study proposed and empirically validated a conceptual framework explaining how leaders' practical wisdom is translated into collective learning through narrative communication. The findings confirmed that WL positively influences both OS and VTL, while OS partially mediates the relationship between leadership and team learning. These results demonstrate that leadership effectiveness in virtual environments extends beyond technical management or formal authority, requiring leaders to cultivate collaborative learning climates, communicate organisational wisdom through meaningful narratives, and facilitate continuous knowledge creation.

The findings also emphasise that VTL does not emerge spontaneously but requires deliberate leadership interventions that foster trust, shared understanding, knowledge exchange, and reflective learning. In technology-enabled educational organisations, storytelling functions as a strategic communication mechanism that enables leaders to externalise tacit knowledge, preserve organisational memory, and strengthen collaborative learning despite geographical separation. Consequently, the study highlights the complementary roles of WL and OS in enabling organisations to adapt to uncertainty, sustain knowledge flows, and strengthen collective capability in increasingly digital work environments.

### *7.1 Theoretical Implications*

This study makes several important contributions to the leadership, knowledge management, and organisational learning literature. First, it extends WL theory by empirically demonstrating that the influence of WL on organisational outcomes operates through behavioural and communicative mechanisms rather than solely through direct managerial actions. While previous studies have primarily conceptualised WL as a source of knowledge creation and ethical decision-making, this research demonstrates that leaders' practical wisdom becomes substantially more influential when communicated through OS, thereby extending the explanatory scope of the theory. Second, the study contributes to the OS literature by positioning storytelling as a strategic knowledge-conversion mechanism rather than merely an organisational communication practice. The findings demonstrate that storytelling facilitates the externalisation of tacit knowledge, reinforces shared organisational values, and promotes collective interpretation of complex organisational experiences. Consequently, storytelling functions as a cognitive and social bridge that transforms leadership wisdom into collaborative learning behaviours among geographically dispersed employees.

Third, the study advances the VTL literature by integrating leadership and communication perspectives within a single theoretical framework. Existing research has largely examined VTL from technological, behavioural, or collaborative perspectives independently. In contrast, the present study demonstrates that leadership wisdom, narrative communication, and collective learning operate as mutually reinforcing organisational capabilities. This integrated perspective contributes to a more comprehensive understanding of how virtual teams develop adaptive learning capabilities under conditions of uncertainty and digital collaboration. Finally, by empirically validating the mediating role of OS, the study enriches the broader knowledge management literature by illustrating how tacit knowledge is transformed into collective organisational capability. The findings therefore establish an important theoretical connection between knowledge-based leadership, narrative communication, and organisational learning, providing a novel framework for future investigations into knowledge-intensive organisations.

## *7.2 Practical Implications*

The findings offer several practical implications for educational organisations and other knowledge-intensive institutions operating in digitally mediated environments. First, organisations should recognise that developing effective virtual teams requires investment not only in digital technologies but also in leadership capabilities that promote practical wisdom, ethical judgement, collaboration, and knowledge sharing. Leadership development programmes should therefore extend beyond traditional managerial competencies to include reflective decision-making, contextual awareness, emotional intelligence, and collaborative knowledge creation. Second, OS should be

institutionalised as a formal knowledge management practice. Educational organisations should encourage leaders to communicate organisational experiences, lessons learned, and successful practices through structured storytelling sessions, digital knowledge repositories, mentoring activities, and virtual communities of practice. Such initiatives would facilitate the transfer of tacit knowledge, preserve organisational memory, and strengthen employees' collective understanding of organisational challenges and solutions.

Third, organisations should strengthen the technological infrastructure supporting virtual collaboration. Reliable digital communication platforms, integrated knowledge-sharing systems, and collaborative learning technologies can significantly enhance the effectiveness of storytelling and virtual learning by enabling continuous interaction regardless of geographical distance. Investment in user-friendly communication technologies should therefore be accompanied by organisational policies that encourage active participation, collaborative reflection, and continuous learning. Finally, managers should cultivate psychologically safe organisational climates in which employees feel comfortable sharing ideas, discussing mistakes, seeking feedback, and experimenting with innovative solutions. Such environments encourage collaborative learning, increase organisational adaptability, and strengthen resilience during periods of environmental uncertainty or organisational change. Educational institutions, in particular, may benefit from embedding storytelling, collaborative reflection, and knowledge-sharing practices into leadership development and professional training programmes.

## **8. Limitations and Future Research Directions**

Despite its theoretical and practical contributions, this study has several limitations that should be considered when interpreting the findings. First, the research adopted a cross-sectional research design, which limits the ability to establish causal relationships among WL, OS, and VTL. Future studies should employ longitudinal designs to examine how these relationships evolve over time and to capture organisational learning processes across different stages of virtual team development. Second, the study relied on self-reported questionnaire data collected from employees within a single survey, creating the possibility of common method bias and perceptual bias despite the statistical procedures employed to minimise these concerns. Future research may combine survey data with qualitative interviews, behavioural observations, organisational performance indicators, or multi-source assessments to provide a richer understanding of leadership and learning dynamics.

Third, the empirical investigation was conducted exclusively within the Representative Offices of the Ministry of Education in the Kurdistan Region of Iraq. Although this context provided an appropriate environment for examining virtual collaboration during periods of organisational



disruption, the findings may not be fully generalisable to private organisations, manufacturing firms, healthcare institutions, multinational corporations, or organisations operating in different national and cultural settings. Comparative cross-sectoral and cross-country studies would therefore provide valuable insights into the contextual generalisability of the proposed framework. Fourth, the study focused exclusively on OS as the mediating mechanism linking WL and VTL. Future research could investigate additional mediators, including knowledge sharing, psychological safety, trust, team cohesion, organisational identification, employee engagement, transactive memory systems, and digital collaboration capability. Similarly, future studies may examine moderating variables such as organisational culture, technological readiness, environmental uncertainty, leadership experience, and team diversity to identify conditions under which WL becomes more or less effective.

Finally, future research should explore emerging digital technologies that may reshape OS and virtual learning. Artificial intelligence, conversational agents, immersive virtual reality, the metaverse, digital twins, and intelligent knowledge management systems offer promising opportunities for enhancing narrative communication, collaborative learning, and leadership effectiveness within increasingly digital organisations. Investigating these technologies would significantly advance the understanding of knowledge creation and virtual collaboration in the next generation of intelligent workplaces.

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### **Conflict of Interest**

The author declare that there is no conflict of interest regarding the publication of this manuscript.

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### **Data availability**

The datasets analysed during the current study are available from the corresponding author on reasonable request.

## Appendix A. Study Questionnaire Items

[Click here](#)

## References

- Abdulmuhsin, A. A., & Ali, A. F. A. (2022). Impact of wise leadership in enhancing the virtual teams' learning: An analytical study. *Tanmiyat Al-Rafidain*, 41(133), 309-339. <https://doi.org/10.33899/tanra.2021.131236.1121>
- Abdulmuhsin, A. A., & Tarhini, A. (2020). Impact of wise leadership, workplace friendships on open innovation in family firms: a developing country perspective. *Journal of Family Business Management, ahead-of-print*(ahead-of-print). <https://doi.org/10.1108/jfbm-04-2020-0028>
- Ali, A. F. A., & Abdulmuhsin, A. A. (2021). The relationship between wise leadership and virtual team learning A descriptive study. *Tikrit Journal of Administrative and Economic Sciences*, 17(56, 1), 411-432. <https://doi.org/10.25130/tjaes.17.56.1.23>
- Alimo-Metcalfe, B. (2013). A Critical Review of Leadership Theory In H. S. Leonard, R. Lewis, A. M. Freedman, & J. Passmore (Eds.), *The Wiley-Blackwell Handbook of the Psychology of Leadership, Change, and Organizational Development* (1st ed.). John Wiley & Sons, Ltd.
- Argote, L., & Miron-Spektor, E. (2011). Organizational Learning: From Experience to Knowledge. *Organization Science*, 22(5), 1123-1137. <https://doi.org/10.1287/orsc.1100.0621>
- Bandura, A. (1986). *Social Foundation of Thought and Action*. Prentice-Hall.
- Bouwman, M., Runhaar, P., Wesselink, R., & Mulder, M. (2018). Leadership ambidexterity: Key to stimulating team learning through team-oriented HRM? An explorative study among teacher teams in VET colleges. *Educational Management Administration & Leadership*, 47(5), 694-711. <https://doi.org/10.1177/1741143217751078>
- Cantrell, M. A., & Lupinacci, P. (2007). Methodological issues in online data collection. *J Adv Nurs*, 60(5), 544-549. <https://doi.org/10.1111/j.1365-2648.2007.04448.x>
- Chamtigul, N., & Li, W. (2021). The influence of ethical leadership and team learning on team performance in software development projects. *Team Performance Management: An International Journal*, 27(3/4), 240-259. <https://doi.org/10.1108/tpm-02-2020-0014>
- Charlier, S. D., Stewart, G. L., Greco, L. M., & Reeves, C. J. (2016). Emergent leadership in virtual teams: A multilevel investigation of individual communication and team dispersion antecedents. *The Leadership Quarterly*, 27(5), 745-764. <https://doi.org/10.1016/j.leaqua.2016.05.002>
- Chiu, C. Y., Lin, H. C., & Ostroff, C. (2020). Fostering team learning orientation magnitude and strength: Roles of transformational leadership, team personality heterogeneity, and behavioural integration. *Journal of Occupational and Organizational Psychology*, 94(1), 187-216. <https://doi.org/10.1111/joop.12333>
- Decuyper, S., Dochy, F., & Van den Bossche, P. (2010). Grasping the dynamic complexity of team learning: An integrative model for effective team learning in organisations. *Educational Research Review*, 5(2), 111-133. <https://doi.org/10.1016/j.edurev.2010.02.002>
- Denning, S. (2021). Effective storytelling: leadership's magic motivational methodology. *Strategy & Leadership*, 49(3), 26-31. <https://doi.org/10.1108/sl-03-2021-0029>
- Edmondson, A. C. (1999). Psychological Safety and Learning Behavior in Work Teams. *Administrative Science Quarterly*, 44(2). <https://doi.org/10.2307/2666999>
- Edmondson, A. C. (2008). Managing the Risk of Learning: Psychological Safety in Work Teams. In D. T. M. West, & K. G. Smith (Ed.), *International Handbook of Organizational Teamwork and Cooperative Working* (pp. 255-275). John Wiley. <https://doi.org/10.1002/9780470696712.ch13>

- Fornell, C., & Larcker, D. F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, 18(3). <https://doi.org/10.2307/3150980>
- Gallego, J. S., Ortiz-Marcos, I., & Romero Ruiz, J. (2021). Main challenges during project planning when working with virtual teams. *Technological Forecasting and Social Change*, 162. <https://doi.org/10.1016/j.techfore.2020.120353>
- Garro-Abarca, V., Palos-Sanchez, P., & Aguayo-Camacho, M. (2021). Virtual Teams in Times of Pandemic: Factors That Influence Performance. *Front Psychol*, 12(1), 624-637. <https://doi.org/10.3389/fpsyg.2021.624637>
- Gilson, L. L., Maynard, M. T., & Bergiel, E. B. (2013). Virtual Team Effectiveness. *Small Group Research*, 44(4), 412-427. <https://doi.org/10.1177/1046496413488216>
- Govindji, R. (2015). *The role of wisdom in organisational leadership* [Aston University].
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3rd ed.). Sage.
- Hartman, S., Parra, C., & de Roo, G. (2019). Framing strategic storytelling in the context of transition management to stimulate tourism destination development. *Tourism Management*, 75, 90-98. <https://doi.org/10.1016/j.tourman.2019.04.014>
- Hertel, G., Geister, S., & Konradt, U. (2005). Managing virtual teams: A review of current empirical research. *Human Resource Management Review*, 15(1), 69-95. <https://doi.org/10.1016/j.hrmr.2005.01.002>
- Khdour, N., Masa'deh, R. e., & Al-Raoush, A. (2020). The impact of organizational storytelling on organizational performance within Jordanian telecommunication sector. *Journal of Workplace Learning*, 32(5), 335-361. <https://doi.org/10.1108/jwl-06-2019-0083>
- Klaic, A., Burtcher, M. J., & Jonas, K. (2020). Fostering team innovation and learning by means of team-centric transformational leadership: The role of teamwork quality. *Journal of Occupational and Organizational Psychology*, 93(4), 942-966. <https://doi.org/10.1111/joop.12316>
- Kozlowski, S. W., & Bell, B. S. (2012). Work Groups and Teams in Organizations. In *Handbook of Psychology (Industrial and Organizational Psychology III. ORGANIZATIONAL PSYCHOLOGY)* (2nd ed., Vol. 12, pp. 1-33). John Wiley & Sons, Inc. <https://doi.org/10.1002/9781118133880.hop212017>
- Kozlowski, S. W., & Ilgen, D. R. (2006). Enhancing the Effectiveness of Work Groups and Teams. *Psychol Sci Public Interest*, 7(3), 77-124. <https://doi.org/10.1111/j.1529-1006.2006.00030.x>
- Li, M., Zhang, P., Xia, Y., & Liu, W. (2017). Shaping the shared mental model: How leader humility helps teams to learn. *Journal of Management & Organization*, 25(5), 653-671. <https://doi.org/10.1017/jmo.2017.21>
- Liu, C. (2008). Cross-Sectional Data. In P. J. Lavarakas (Ed.), *Encyclopedia of Survey Research Methods*. Sage. <https://doi.org/10.4135/9781412963947.n119>
- McCarthy, J. F. (2008). Short Stories at Work. *Group & Organization Management*, 33(2), 163-193. <https://doi.org/10.1177/1059601108314582>
- McKenna, B., & Rooney, D. (2019). Wise Leadership. In *The Cambridge Handbook of Wisdom* (pp. 649-675). <https://doi.org/10.1017/9781108568272.030>
- McQuade, K. E., Harrison, C., & Tarbert, H. (2020). Systematically reviewing servant leadership. *European Business Review*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/eb-08-2019-0162>
- Meeks, T. W., & Jeste, D. V. (2009). Neurobiology of wisdom: a literature overview. *Arch Gen Psychiatry*, 66(4), 355-365. <https://doi.org/10.1001/archgenpsychiatry.2009.8>
- Morgan, S., & Dennehy, R. F. (1997). The power of organizational storytelling: a management development perspective. *Journal of Management Development*, 16(7), 494-501. <https://doi.org/10.1108/02621719710169585>

- Newman, S. A. (2020). Five Steps to Leading Your Team in the Virtual COVID-19 Workplace. *Organizational Dynamics*. <https://doi.org/10.1016/j.orgdyn.2020.100802>
- Nonaka, I., & Takeuchi, H. (2019). *The Wise Company: How Companies Create Continuous Innovation* (1st ed.). Oxford University Press.
- Nonaka, I., Toyama, R., & Hirata, T. (2008). *Managing Flow: A Process Theory of the Knowledge-Based Firm* (1st ed.). PALGRAVE MACMILLAN.
- Rebelo, T., Lourenço, P. R., & Dimas, I. D. (2019). The journey of team learning since “The Fifth Discipline”. *The Learning Organization*, 27(1), 42-53. <https://doi.org/10.1108/tlo-10-2019-0144>
- Senge, P. (1990). *The Fifth Discipline*. Century Business.
- Tsoukas, H., & Hatch, M. J. (2016). Complex Thinking, Complex Practice: The Case for a Narrative Approach to Organizational Complexity. *Human Relations*, 54(8), 979-1013. <https://doi.org/10.1177/0018726701548001>
- Van der Haar, S., Segers, M., & Jehn, K. A. (2013). Towards a contextualized model of team learning processes and outcomes. *Educational Research Review*, 10, 1-12. <https://doi.org/10.1016/j.edurev.2013.04.001>
- Vendrell-Herrero, F., Bustinza, O. F., & Opazo-Basaez, M. (2020). Information technologies and product-service innovation: The moderating role of service R&D team structure. *Journal of Business Research*. <https://doi.org/10.1016/j.jbusres.2020.01.047>
- Wibowo, A., & Hayati, N. R. (2019). Empowering leadership and trust on team learning behavior. *Journal of Management Development*, 38(3), 238-248. <https://doi.org/10.1108/jmd-11-2018-0335>
- Wilson, J. M., Goodman, P. S., & Cronin, M. A. (2007). Group learning. *Academy of Management Review*, 32(4), 1041-1059. <https://doi.org/10.5465/amr.2007.26585724>