Enhancing team dynamics through digital coaching: the role of managerial and peer support

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Abstract

Purpose – Although the literature on the effectiveness of team interventions is constantly expanding, there has been a strong focus on the process mechanisms that could explain their success, often overlooking the contextual aspects in which these interventions are carried out. Based on the Context-Mechanism-Outcome framework, this study aims to investigate the influence of contextual factors on the effectiveness of digital team coaching interventions that use social network visualisation to enhance team coordination and reduce interpersonal conflicts.

Design/methodology/approach – Using a multi-wave, longitudinal design, this research analysed 38 work teams from three organisations over three-time points. Data collection focused on manager and peer support, the mechanisms of training transfer and action plan implementation and the outcomes of these interventions. Surveys were administered in three organisations, involving 317 respondents across different phases. The intervention spanned six to eight months, incorporating three to four structured online group sessions. Each session involved a multi-stage process, concluding with a result-oriented action plan about work-related goals. The intervention included social network visualisation, discussions, coaching and continuous refinement of action plans.

Findings – The analysis highlights how manager support significantly correlates with team coordination and performance, mainly when teams are less engaged in implementing action plans. Peer support did not

show a mediating effect on training transfer or outcomes but had direct positive impacts on team coordination and performance.

Practical implications – Teams actively implementing action plans may require less immediate managerial support for effective coordination and high performance. The manager's role becomes crucial, particularly in the early stages of the intervention or in those teams where online coordination alone may not be adequate for action plan implementation. Peer support for training transfer could enhance the effectiveness of the intervention in achieving desired team outcomes; therefore, cultivating a supportive peer environment is crucial for the success of such interventions. Monitoring and assessing team dynamics are vital to maximise the benefits of digital team coaching interventions.

Originality/value – This study stands out for its innovative exploration of the interplay between managerial and peer support in the context of digital team coaching, using social network visualisation as a novel approach to enhancing team dynamics.

Introduction

In recent years, the necessity to study and enhance team dynamics, mainly through digital coaching, has become increasingly evident within work and organisational psychology. Scientific literature has broadly recognised the vital role of effective teamwork and collaboration in workplaces. This consensus suggests that successful teamwork – achieved when individuals collectively work towards a common goal – leads to higher performance than the sum of individual efforts (Salanova *et al.*, 2016; Salas *et al.*, 2018). Furthermore, the ability of a team to effectively collaborate has been linked to various positive outcomes, including improved individual performance, helping behaviours, work attitudes, customer satisfaction and organisational safety (Mathieu *et al.*, 2017). Within this scenario, digital coaching, aimed at enhancing team dynamics, cannot only serve to augment communication and collaboration among team members but also to facilitate and refine the decision-making processes (Kinnunen *et al.*, 2021).

Moreover, the shift towards virtual work settings, such as remote and hybrid models, accelerated by the COVID-19 pandemic, has introduced significant challenges to maintaining and enhancing teamwork and leadership (Bell *et al.*, 2023). Modern workplaces' complexity, diversity and interdisciplinary nature require not just collective effort but the integration of team inputs into output through effective team processes (Driskell *et al.*, 2018; Edmondson, 2002; Mathieu *et al.*, 2017).

Therefore, the team's successful transition towards digital collaboration requires specific skills and capabilities (Vuchkovski *et al.*, 2023). At the individual level, it is the ability to manage and facilitate communication modes, noting differences between informal and formal, spontaneous, and structured elements of the digital interaction, and synchronous and sequential communications in virtual teams compared to conventional ones. This suggests that digital coaching should address collaboration and decision-making and adapt communication strategies tailored to virtual environments.

In addressing these challenges, digital group-level team coaching emerges as a promising organisational practice for fostering essential skills and dynamics necessary for the successful digital transformation of teams (Trenerry *et al.*, 2021). This form of coaching can enhance team communication, collaboration, workplace relationships, adaptability and resilience at the group level. Moreover, the digital age reshapes how teams and leadership operate, requiring new perspectives on leading and managing teams effectively in digital environments (Larson and DeChurch, 2020).

Consequently, while virtual environments now serve as strategic tools to facilitate learning and the development of specific skills necessary for work, including digital competencies (Lee and Tan, 2023), it is also recognised that during periods of significant digital transformation,

individuals must develop new mental models and adapt to substantial changes in social interaction (Harteis *et al.*, 2020). Essentially, the digitalisation of work introduces new task characteristics and integrates workers and machines into digital networks, necessitating a shift in conceptual frameworks to navigate digital transformation successfully.

To effectively understand which organisational and social mechanisms should be leveraged to ensure that digital environments genuinely support the development of new personal and professional resources, it is crucial to monitor the implementation process of digital interventions. This monitoring helps to explore how elements of the organisational context and intervention mechanisms can influence the impact of these initiatives within a virtual setting.

Increasingly, the evaluation of the effectiveness of such interventions focuses on process-oriented aspects that can initiate change or achieve the desired impact, according to the Input-Mediators-Outcome framework (McGuier *et al.*, 2023). However, a research gap exists regarding the contextual factors that influence the effectiveness of digital team training programs. While some studies have begun to explore the importance of contextual antecedents and interpersonal elements in the team and informal learning processes (Bjerke, 2023; Lee *et al.*, 2022), a comprehensive understanding of how organisational elements such as leadership and managerial support and peers support can impact the success of these initiatives is still lacking.

The current study explored the contextual factors, mechanisms and outcomes associated with a digital team coaching intervention that leverages social network visualisation. Specifically, it aims to identify how managerial and peer support act as crucial contextual factors that influence the effectiveness of a digital team-based coaching intervention. Furthermore, our research investigates the operational mechanisms of training transfer and action plan implementation, examining their crucial roles in triggering and enhancing the coaching process. The primary focus on outcome variables related to teamwork is intended to provide a thorough understanding of how digital team coaching interventions can significantly improve team dynamics and performance, thereby shaping more effective teams in the digital era.

Theoretical background
Team training interventions
Considering the importance of teamwork in the workplace, a variety of interventions have been developed to enhance team effectiveness and performance. These strategies often target skills and competencies essential for teamwork, such as problem-solving, goal-setting, interpersonal relations and clarifying team roles (O'Donovan and McAuliffe, 2020).

Historically, evidence-based team development and improvement approaches have focused on in-presence team training, team building and team debriefing (Lacerenza *et al.*, 2018). Team training, a structured approach, aims to improve teamwork skills by fostering a shared understanding of roles, responsibilities and goals. Team building places a stronger emphasis on enhancing team relationships, encompassing, for instance, activities and exercises to promote trust, respect and mutual understanding among team members. Team debriefing corresponds to a process of reflection and discussion among the team members after a task or event to identify successes and lessons applicable to future situations.

In contemporary organisational settings, team training interventions have shifted towards enhancing communication and coordination. The importance of high-quality team communication cannot be overstated because this type of communication, characterised by clarity, timeliness and task relevance, has been empirically linked with enhanced team performance across several domains, including innovation, adherence to budget constraints, operational efficiency and the successful realisation of set goals (Bui *et al.*, 2019). This is strictly associated with team coordination, defined as the systematic alignment and

amalgamation of individual team members' efforts towards attaining a shared objective (Salanova *et al.*, 2016).

Moreover, these interventions now address interpersonal conflicts, ranging from colleague disputes to inadequate treatment by supervisors. Unresolved, these conflicts can severely impact team morale and overall organisational team productivity and effectiveness. Therefore, strategically implementing team interventions is important in fostering a harmonious and high-functioning workplace environment (Friedman *et al.*, 2000).

Digital team interventions and group-level team coaching

Digital interventions and group-level team coaching have recently emerged as an alternative powerful tool to foster desirable workplace outcomes and a culture of continuous improvement (Giusino *et al.*, 2023; Stratton *et al.*, 2022). Some team interventions use social network visualisation to understand workplace teams' social dynamics better. This method allows for targeted interventions to address teamwork challenges effectively, providing a means to identify teamwork patterns, understand existing and potential relationships and pinpoint areas where teamwork breakdowns may occur. The visualisation offers valuable insights into the structure and dynamics of social networks within teams, enabling stakeholders to identify key individuals, opinion leaders and potential bottlenecks in the team workflow (Bahbouh, 2012; Bahbouh and Lasker, 2014; Bahbouh and Willis, 2022).

Complementing digital interventions, group-level team coaching has a significant role in enhancing team collaboration and performance. This coaching approach involves direct engagement with the entire team to improve team dynamics, collaboration and overall performance (Lawrence, 2021). By incorporating it into digital interventions, team members receive tailored feedback, guidance and support to improve their teamwork skills, communication, collaboration and coordination, fostering a culture of learning and knowledge sharing (Bahbouh and Willis, 2022). Incorporating digital technologies into coaching practices introduces interactive experiences that promote team bonding and bolster a culture of adaptability and organisational resilience (Supriharyanti and Sukoco, 2023).

Furthermore, team coaching sessions provide another dimension of direct interaction, focusing on using collective resources to achieve team goals. These sessions are precious for fostering team reflexivity and self-awareness, guided by the digital visualisation of graphical representations, better known as "sociomaps" (Rozehnalová, 2013). The insights gained from these visualisations are instrumental in developing tailored action plans, thereby facilitating enhanced communication and coordination within teams.

Although the research on applying social network visualisations and digital coaching tools in team settings is still in the early stages, existing studies highlight their potential. Investigations within sectors such as military aviation and financial institutions have demonstrated the value of these tools in enhancing team performance and fostering optimal personnel behaviour (Bernardová, 2012; Franc *et al.*, 2019; Zakharchyn and Kosmyna, 2015). These findings suggest the broad applicability and effectiveness of digital team interventions and group-team-level coaching in enhancing teamwork performance and organisational outcomes.

Context-mechanism-outcome framework

Today, interest in understanding which team interventions are most effective has grown, with an increasing number of studies providing a comprehensive overview of the types of team-level interventions available (Shuffler *et al.*, 2018) or exploring potential process aspects that can enhance the success of these interventions (Klaic *et al.*, 2020; McGuier *et al.*, 2023; Nyfoudi *et al.*, 2023). However, the contextual aspects in which these team

interventions take place seem to have been underestimated despite a growing body of literature emphasising the role of these factors in either facilitating or even disrupting the implementation of the intervention, ultimately influencing the desired changes (Roodbari et al., 2023).

This study investigated the contextual factors, underlying mechanisms and outcomes associated with a digital team coaching intervention using social network visualisation. The context-mechanism-outcome framework provides a comprehensive analysis of these elements in organisational interventions, acknowledging the complex and context-dependent nature of workplace settings in which interventions take place (Nielsen and Miraglia, 2017; Roodbari et al., 2023). It facilitates a thorough exploration of the intervention's mechanisms, enabling an understanding of which elements are effective, why they work, under what conditions and for whom – essentially addressing the query, "what works for whom, and under which circumstances" (Nielsen and Miraglia, 2017; Roodbari et al., 2023).

In workplace interventions, the context in which the intervention takes place influences its working mechanisms, which, in turn, impact the intervention outcomes (Nielsen and Randall, 2013; Roodbari et al., 2021, 2023). Contextual factors can be subdivided based on two types of contexts: "omnibus" and "discrete". Omnibus context refers to external factors existing before and regardless of the intervention (e.g. organisational culture and climate); discrete context refers to everything occurring during the actual implementation of the intervention (e.g. events like pandemics, financial crises and mergers).

Working mechanisms correspond to the elements or "ingredients" that make an intervention effective. These can include the specific content of the intervention, activities and exercises designed to engage participants, or specialised tools and devices used during the process. Understanding these mechanisms is key to comprehending how interventions produce their intended effects, considering the varied contexts in which they are applied. Finally, the Outcomes of an intervention relate to the observable improvements in working conditions, worker well-being or performance that the intervention aims to achieve. These effects directly result from the interplay between the context in which the intervention is implemented and the mechanisms activated during the process.

Contextual factors: management and peer support
One important contextual factor that positively affects workplace interventions' effectiveness is manager support (Christensen et al., 2019; Helland et al., 2021). Manager support can be defined as the extent to which the immediate manager of a team looks after their team members, asking whether team members have problems at work, helping to make team members' work more manageable and listening to team members when they have issues (Holton et al., 2000). Here, manager support is conceived as an "omnibus" context factor – existing in the workplace regardless of the implemented intervention. The support from the immediate manager is an example of a context factor that facilitates the effectiveness of workplace interventions, as it provides workers and teams with the necessary social resources that sustain their participation in the intervention itself as well as the application of what they acquired during the intervention into their everyday work, managers, for instance, play a key role in supporting the integration of new skills and knowledge within the team.

Previous research provides empirical evidence that manager support can improve teamwork and team outcomes. Nielsen and Randall (2009) emphasised the active involvement of managers in supporting teams during implementation in the workplace. Gilley et al. (2010) underscored the pivotal role of effective managers who exhibit skills and

behaviours (i.e. involving employees in decision-making, coaching others, communicating effectively, motivating others and helping employees grow and develop). These managerial attributes significantly contribute to team building and overall team performance, with manager support essential to successful teamwork. Nielsen *et al.* (2010) consistently found that training managers may enhance the effects of implementing teamwork.

In addition, another important contextual factor facilitating workplace interventions' effectiveness is peer support, particularly in relation to training transfer. It represents a discrete contextual factor important during the specific phase of intervention implementation in the workplace (Nielsen *et al.*, 2023). This form of support implies the extent to which colleagues support applying new skills and knowledge gleaned from intervention activities, manifesting through encouragement, appreciation and the anticipation of these new competencies being used in routine tasks (Holton *et al.*, 2000). Peer support is directly linked to the implementation of the intervention, influencing its effectiveness by fostering an environment that encourages the practical application of intervention learnings.

Together, management and peer support form a complementary foundation that substantially enhances the effectiveness of workplace interventions. While management support provides a stable environment beyond specific intervention activities, peer support focuses on the immediate, practical application of acquired skills within the workplace. This dual-layered support system facilitates the initial application of intervention strategies and ensures their constant application, leading to improved team dynamics and overall organisational performance.

Although the potential of group digital coaching interventions is significant, several managerial and peer support challenges can impede their effectiveness. Variations in managerial support may result in inconsistent experiences across team members and insufficient peer support due to competitive team dynamics or low engagement levels, which can weaken the intervention's impact (Huges *et al.*, 2020).

Working mechanisms: training transfer and action plan implementation

Within the scope of this study, two primary working mechanisms of the intervention were examined: training transfer and action plan implementation. Each mechanism plays an important role in translating the intervention's theoretical foundations into tangible workplace improvements.

On the one hand, training transfer refers to the extent to which participants of an intervention can apply the skills, knowledge and attitudes acquired during the training to their day-to-day job roles (Baldwin and Ford, 1988). This concept involves effectively using and incorporating intervention-acquired capabilities into the work environment, ensuring the practical application of learned skills rather than mere theoretical understanding (Grohmann and Kauffeld, 2013).

On the other hand, action plan implementation is a crucial step that follows training interventions. This process involves executing specific, strategic actions that participants have identified during their training (Grohmann and Kauffeld, 2013). Implementing an action plan is a central element of the coaching intervention, characterised as a result-oriented process designed to achieve specific work-related goals (Solms *et al.*, 2021). Indeed, reflecting on team members' behaviours, barriers and personal challenges and developing a concrete plan to address these obstacles can significantly enhance applying theoretical knowledge to practical settings (Peters and Carr, 2013). This process is critical as it ensures the practicality of training and its relevance and effectiveness in real-world settings (Grohmann and Kauffeld, 2013). Therefore, successful action plan implementation can significantly influence the overall outcome of coaching interventions, turning insights into

actionable change and enhanced performance. These action plans are often intended to solve a particular problem, improve a process or enhance overall performance within the team or organisation. Implementation focuses on implementing these concrete plans and monitoring their progress and outcomes.

For instance, while training transfer is about the ability and process of applying learning to one's work, action plan implementation is more about executing specific strategies and steps derived from that learning and more targeted effort to put post-training strategic plans into practice. In this study, we investigate how training transfer and action plan implementation serve as pivotal mechanisms, aiming to shed light on their roles in explaining the connection between context factors and various team outcomes. These outcomes encompass improved teamwork and coordination, a reduction in interpersonal conflicts at work and an overall improvement in team performance.

The underlying premise is that effective support from management and colleagues facilitates and motivates recipients to practically apply their new skills and adhere to the action plans crafted during the intervention. Actively supporting the training transfer and the execution of action plans stemming from the intervention influences participants' ability to apply and enact these plans and skills in their work settings. Consequently, this support system is crucial as it helps bridge the gap between learning and doing, ensuring a comprehensive understanding and effectively using the intervention's content in recipients' daily work routines. In other words, successful training transfer and action plan implementation amplify the overall effectiveness of the intervention. This leads to realising desired outcomes, such as improved team performance, enhanced coordination and smoother interpersonal relations.

Despite the significance of training transfer and action implementation as working mechanisms, some challenges may hinder the effective transfer of learning. These include a lack of ongoing support after training, such as insufficient resources or inadequate support from colleagues or leaders. In addition, suppose the relevance of the training to daily tasks is unclear. In that case, team members might find it difficult to see how new skills fit into their roles, which can diminish their motivation to change behaviours (Nafukho *et al.*, 2022).

This study aims to explore how managerial support and peer support interact with training transfer and action plan implementation to enhance team dynamics through a digital coaching intervention. The study investigates explicitly the critical roles that managerial and peer support play in determining the success of the intervention. We examine the influence of these contextual factors on the effectiveness of working mechanisms such as training transfer and action plan implementation and how they subsequently impact team outcomes, including teamwork, team coordination, interpersonal conflict at work and team performance. Based on the existing related theory and research summarised, the following hypotheses were tested:

H1. Training transfer moderates the relationship between managerial support and outcomes (i.e. teamwork, team coordination, interpersonal conflict at work and team performance). Specifically, the positive effect of managerial support on team outcomes is enhanced when participants perceive greater opportunities to apply the training content in their daily jobs.

H2. The relationship between managerial support and outcomes (i.e. teamwork, team coordination, interpersonal conflict at work and team performance) is moderated by T2 action plan implementation. Hence, the impact of managerial support on team dynamics is higher when the action plans are effectively implemented.

H3. Training transfer mediates the relationship between peer support and T3 outcomes (i.e. teamwork, team coordination, interpersonal conflict at work and team performance). Specifically, peer support boosts team outcomes by effectively enabling the application of training knowledge and skills.

H4. Action plan implementation mediates the relationship between peer support and outcomes (i.e. teamwork, team coordination, interpersonal conflict at work and team performance). Thus, perceiving high levels of peer support contributes to better team dynamics by encouraging the practical application of the action plans developed during the intervention.

Methods
Description of the team intervention
The team intervention is a digital, team-level initiative designed to analyse and improve effective teamwork patterns through a structured, five-phase process repeated in each session. Each session is spread over approximately six to eight months, allowing for the possibility of three to four sessions in total. This approach permits ample time for thoroughly exploring, developing and implementing any necessary strategies. By engaging in multiple sessions, participants can build upon their knowledge and skills, enabling them to achieve their team-related objectives more effectively.

The intervention session is structured as follows:

- Online team-based data collection: Teams complete an online survey to capture data on existing and desired teamwork patterns, focusing on aspects such as communication frequency, quality, stress levels and sources of stress among team members.

- Sociomap generation and visualisation: The software processes survey responses to create "sociomaps", which are detailed, graphical representations that show specific teamwork patterns, including interaction quality and communication flows.

- Team discussion and coaching: Using the sociomaps, this phase facilitates team discussions and coaching sessions to examine and understand the visualised teamwork dynamics.

- Action plan development: Based on insights from the coaching sessions, teams collaboratively develop action plans to enhance their teamwork dynamics. The first session typically concludes with the formulation of an initial action plan, which will be implemented in the following weeks. From the second session onwards, the team starts working on the fifth phase, which is the review of the action plans.

- Review of action plans: The final phase involves a thorough reflective and analytical process to compare the previous action plan with the new one, devised according to the emerging needs and shared by the team members of the action plans to ensure they align with the team's goals and dynamics.

The intervention aims to improve team awareness, dynamics and patterns through collective efforts in team coordination and performance. It uses social network analysis theory and methods to create sociomaps depicting current and desired teamwork structures and communication patterns. Sessions are designed to foster team reflexivity and self-awareness, leading to actionable strategies for communication and cooperation development. Facilitated by trained psychologists, discussions address current teamwork states, desired improvements and behavioural adjustments. Action plans are evaluated

across three to four sessions, lasting 90–150 min each. The intervention concludes with a recap session confirming communication efficiencies. Continuous sociomap updates aid ongoing evaluation and strategic refinement.

Procedure
Data collection involved online questionnaires distributed with the support of contact persons or project representatives within targeted organisations. Before completing the questionnaires, participants received a comprehensive informed consent form detailing the study's objectives and their rights as research participants. This study complied with the ethical standards of the Declaration of Helsinki and received approval from the Human Research Ethics Committee of the University of Bologna (Protocol no. 185076).

Participants were approached three times to complete the questionnaire. Precisely, survey waves corresponded to the beginning of the intervention (T1), six months later (T2) and three months after T2 (T3) during the post-intervention phase. T1 included context measures (i.e. manager support and peer support towards transfer); T2 was aimed to assess working mechanisms (i.e. training transfer and action plan implementation); whereas T3 focused on outcome variables (i.e. teamwork, team coordination, interpersonal conflict and team performance). Time lags between waves were strategically planned within the project's research design. The interval between T1 and T2 facilitated participant engagement with training materials, application of learning and initiation of action plans. The gap from T2 to T3 was intended to permit the entire manifestation, stabilisation and accurate measurement of the intervention's effects for intended outcomes.

Participants
The study was conducted across a public health-care provider and two small and medium enterprises. Participants were recruited voluntarily based on recommendations from managers, with each intervention group consisting of members from the same team or work process. Data collection was facilitated via online questionnaires distributed by project representatives at each organisation. Before completing the questionnaires, participants received an informed consent form explaining the study's objectives and their rights. The intervention included 38 teams, ranging from 4 to 18 members, involving a total of 365 eligible participants aged between 25 and 47 years. The final sample comprised 317 respondents, of which 112 were male (35.3%) and 73 were female (23%). About one-third (34.5%) of the participants were aged between 25 and 34 years, one-fifth (20.5%) held a master's degree and nearly half (47.5%) were in permanent full-time employment, with an average tenure of three to four years.

Measures
Context factors
T1 Manager Support was assessed using three items adapted from Holton *et al.* (2000) and scored on a five-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is: "Our immediate manager asks about any problems or challenges we face at work".

T1 Peer Support towards Transfer was measured using three items adapted from Holton *et al.* (2000) and rated on a five-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). For instance, "Our team mutually recognises and values the efforts to apply newly acquired skills from training sessions".

Working mechanisms.

T2 Training Transfer was assessed using three items (Grohmann and Kauffeld, 2013). Responses were provided on a five-point scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is: "In our daily tasks, we frequently employ the knowledge acquired in the team training sessions".

T2 Action Plan Implementation was measured through three items (Grohmann and Kauffeld, 2013) based on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). For instance, "The action plans we devised after the training intervention have been effectively put into action".

Outcomes

T3 Teamwork was measured using three items from Salanova *et al.* (2016) rated on a frequency scale from 0 (*never*) to 6 (*always*). A sample item is "My work team possesses clearly defined objectives".

T3 Team Coordination was measured using three items developed by Salanova *et al.* (2016), such as "We synchronise our efforts effectively to fulfil necessary tasks". The scale was assessed on a seven-point Likert scale from 0 (*never*) to 6 (*always*).

T3 Interpersonal Conflict at Work was assessed using a nine-item scale (Friedman *et al.*, 2000). Response options ranged *from 1 (not at all)* to 5 (*a lot*). A sample item is "Hostile sentiments among colleagues are common".

T3 Team Performance was explored using the Aston Team Performance Inventory (Dawson *et al.*, 2006), comprising 15 items covering four dimensions (team support, autonomy, reflexivity and participation) and rated on a five-point scale from 1 (*completely disagree*) to 5 (*completely agree*). A sample item is "Team members are consistently supportive towards each other".

Data analysis
Eight moderation models and eight mediation models were used to test the study hypotheses using SPSS (version 28) and PROCESS macro (Igartua and Hayes, 2021). These models accounted for all possible combinations of the hypothesised predictor (peer support towards training transfer), moderators (manager support), mediators (working mechanisms) and outcomes.

Results
Preliminary results
The means, standard deviations and correlations among the study variables are reported in Table 1. All significant relationships were in the expected direction. Among the context factors, T1 Manager Support was positively related to each intervention outcome: T3 Teamwork ($r = 0.56$, $p < 0.01$), T3 Team Coordination ($r = 0.41$, $p < 0.01$) and T3 Team Performance ($r = 0.52$, $p < 0.01$), but negatively correlated with T3 Interpersonal Conflict at work ($r = -0.32$, $p < 0.05$). T1 Peer Support towards transfer also reported significant positive correlations with T2 Training Transfer ($r = 0.44$, $p < 0.01$), T2 Action Plan Implementation ($r = 0.38$, $p < 0.01$) and T3 Teamwork (r = 0.35, $p < 0.05$). T2 Action Plan Implementation was significantly associated with improved T3 Teamwork ($r = 0.41$, $p < 0.05$), T3 Team Coordination ($r = 0.41$, $p < 0.05$) and T3 Team Performance ($r = 0.45$, $p < 0.01$). Moreover, as indicated along the table diagonal, all scales demonstrated internal consistency, with Cronbach's alpha values exceeding the 0.70 criterion, suggesting reliable measures (DeVellis and Thorpe, 2021).

Variables	M	SD	1	2	3	4	5	6	7	8
Context factors										
1. T1 Manager Support	3.76	1.05	(0.94)							
2. T1 Peer Support towards the transfer	3.58	0.81	0.37**	(0.90)						
Working mechanisms										
3. T2 Training Transfer	3.10	0.82	0.07	0.44**	(0.88)					
4. T2 Action Plan Implementation	3.04	0.81	0.09	0.38**	0.44**	(0.86)				
Outcomes										
5. T3 Teamwork	4.51	0.81	0.56**	0.35*	−0.01	0.41*	(0.72)			
6. T3 Team Coordination	4.44	0.84	0.41**	0.21	0.10	0.41*	0.63**	(0.79)		
7. T3 Interpersonal Conflict	1.94	0.73	−0.32*	−0.13	−0.16	−0.32	−0.57**	−0.59**	(0.95)	
8. T3 Team Performance	3.89	0.68	0.52**	0.25	0.12	0.45**	0.62**	0.65**	−0.61**	(0.81)

Notes: *$p < 0.05$; **$p < 0.01$; Cronbach's α in brackets along the diagonal
Source: Created by authors

Table 1.
Correlation matrix
for the study
variables

Manager support and team outcomes
We conducted a moderation analysis to assess the interaction effects of T1 Manager Support and working mechanisms (i.e. T2 Training Transfer and T2 Action Plan Implementation) on team outcomes (i.e. T3 Teamwork, T3 Team Coordination, T3 Interpersonal Conflict at Work and T3 Team performance). The results, displayed in Table 2, reveal that two out of the eight tested models demonstrated statistically significant interactions, indicating specific conditions under which T1 Manager Support effectively influences team outcomes.

As reported in Table 2, our results did not indicate any statistically significant interaction effect involving T2 Training Transfer as a moderator in the relationship between T1 Manager Support and team outcomes. Therefore, *H1* was not supported by the findings.

In contrast, the findings revealed a significant moderating effect of T2 Action Plan Implementation on the relationship between T1 Managerial Support and two different team outcomes. A significant interaction was observed between T1 Managerial Support and T2 Action Plan Implementation on T3 Team Coordination, with a regression coefficient of $B = -0.48$ ($Z = -2.81$, $p < 0.05$). Notably, the impact of T1 Managerial Support on T3 Team Coordination was significantly more pronounced at lower levels of T2 Action Plan Implementation ($B = 1.14$, $Z = 4.39$, $p < 0.001$), as depicted in Figure 1. Nonetheless, the obtained results suggest a discrepancy from the expected direction, revealing that the influence of T1 Managerial Support on T3 Team Coordination is stronger in contexts where T2 Action Plan Implementation is limited.

Then, the model including T3 Team Performance as a criterion variable revealed a statistically significant interaction between T1 Managerial Support and T2 Action Plan Implementation ($B = -0.40$, $Z = -2.21$, $p = 0.02$). To be specific, the effect of T1 Managerial Support on T3 Team Performance was statistically significant at low levels of T2 Action Plan Implementation ($B = 0.94$, $Z = 3.69$, $p < 0.001$), as shown in Figure 2.

Overall, these results provided partial support to *H2*. Indeed, the interaction between T1 Managerial Support and T2 Action Plan Implementation is statistically significant only with T3 Team Coordination and T3 Team Performance as outcomes.

Outcomes in T3	B	SE	Z	p
Outcome: T3 Teamwork				
T1 Manager Support × T2 Training Transfer	−0.17	0.23	−0.76	0.44
T1 Manager Support × T2 Action Plan Implementation	−0.27	0.15	−1.75	0.08
Outcome: T3 Team Coordination				
T1 Manager Support × T2 Training Transfer	−0.45	0.25	−1.78	0.07
T1 Manager Support × T2 Action Plan Implementation	−0.48	0.17	−2.81	0.00
Outcome: T3 Interpersonal Conflict at Work				
T1 Manager Support × T2 Training Transfer	−0.05	0.28	−0.18	0.85
T1 Manager Support × T2 Action Plan Implementation	0.31	0.19	1.63	0.10
Outcome: T3 Team Performance				
T1 Manager Support × T2 Training Transfer	−0.13	0.28	−0.47	0.63
T1 Manager Support × T2 Action Plan Implementation	−0.40	0.18	−2.21	0.02

Notes: SE = standard error; Z = moderator's value
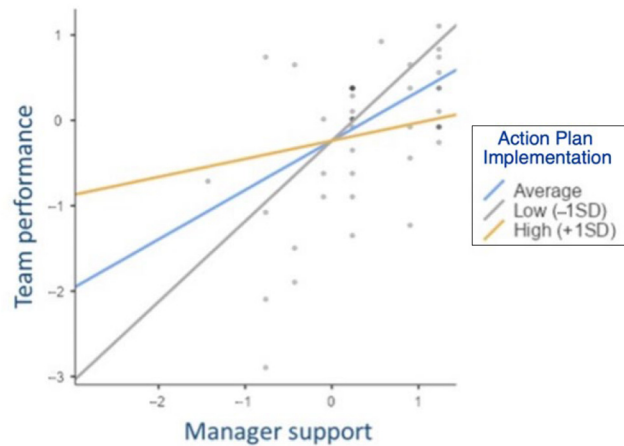**Source:** Created by authors

Table 2.
Working mechanisms as moderators in the relationship between T1 manager support and T3 outcomes
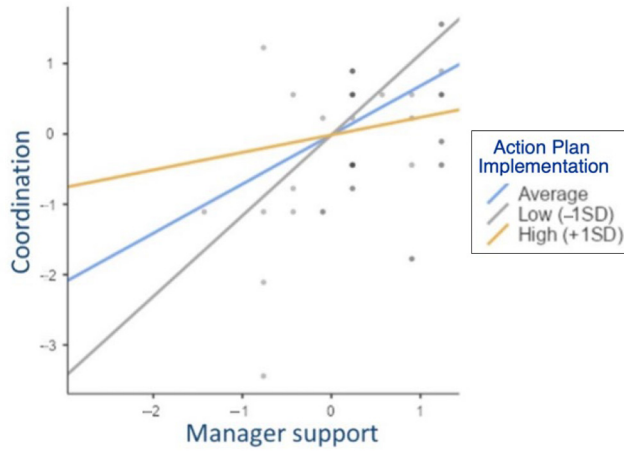
Source: Created by authors

Source: Created by authors

T1 Peer Support toward transfer and T3 Outcomes
We conducted a series of mediation analyses to investigate the indirect effects of T1 Peer Support on T3 Outcomes as working mechanisms. As delineated in Table 3, our findings did not reveal statistically significant indirect effects in any of the hypothesised mediation models. However, noteworthy direct effects emerged, underscoring the positive associations between T1 Peer Support and T2 Training Transfer ($B = 0.56, Z = 2.14, p < 0.05, n = 46$). In addition, T1 Peer Support was positively related to all the T3 Outcomes under investigation. To be specific, our results revealed a positive association between T1 Peer Support and T3 Teamwork ($B = 1.29, Z = 4.58, p < 0.001, n = 42$), T3 Team Coordination ($B = 1.05, Z = 3.11, p < 0.01, n = 42$) and T3 Team Performance ($B = 0.87, Z = 2.43, p < 0.01, n = 43$). Therefore, *H3* and *H4* were not empirically supported.

Effect	B	SE	Z	p
T1 Peer Support → T2 Training Transfer → T3 Teamwork				
Indirect	−0.27	0.17	−1.58	0.11
Direct	1.29	0.28	4.58	0.00
Total	1.01	0.29	3.46	0.00
T1 Peer Support → T2 Action Plan Implementation → T3 Teamwork				
Indirect	0.09	0.11	0.81	0.41
Direct	0.91	0.30	3.01	0.00
Total	1.01	0.29	3.46	0.00
T1 Peer Support → T2 Training Transfer → T3 Team Coordination				
Indirect	−0.23	0.17	−1.34	0.18
Direct	1.05	0.34	3.11	0.00
Total	0.82	0.33	2.47	0.01
T1 Peer Support → T2 Action Plan Implementation → T3 Team Coordination				
Indirect	0.11	0.13	0.85	0.39
Direct	0.70	0.34	2.04	0.04
Total	0.82	0.33	2.46	0.01
T1 Peer Support → T2 Training Transfer → T3 Interpersonal Conflict at work				
Indirect	−0.00	0.13	−0.05	0.95
Direct	−0.44	0.35	−1.25	0.20
Total	−0.45	0.32	−1.39	0.16
T1 Peer Support → T2 Action Plan Implementation → T3 Interpersonal Conflict at work				
Indirect	−0.12	0.13	−0.93	0.35
Direct	−0.32	0.33	−0.97	0.32
Total	−0.45	0.32	−1.39	0.16
T1 Peer Support → T2 Training Transfer → T3 Team Performance				
Indirect	−0.06	0.14	−0.47	0.63
Direct	0.87	0.35	2.43	0.01
Total	0.80	0.33	2.43	0.01
T1 Peer Support → T2 Action Plan Implementation → T3 Team Performance				
Indirect	0.19	0.15	1.23	0.21
Direct	0.61	0.32	1.86	0.06
Total	0.80	0.33	2.43	0.01

Note: SE = standard error
Source: Created by authors

Discussion

The current study aimed to explore the dynamics of digital team coaching in modern organisational contexts, especially considering the increased adoption of remote and hybrid work models due to the COVID-19 pandemic. As previously discussed, the need to improve team dynamics through digital means is increasingly important, with digital team coaching emerging as a vital mechanism for fostering necessary skills and collaboration in a digitalised work environment (Trenerry *et al.*, 2021; Larson and DeChurch, 2020).

To achieve our objectives, a three-wave longitudinal designed explored the moderating roles of training transfer and action plan implementation – identified as key working mechanisms – on the relationship between manager support – seen as a context factor – and a range of key intervention outcomes at the team level (i.e. teamwork, team coordination,

interpersonal conflict at work and team performance). Furthermore, the study examined the mediating effect of training transfer and action plan implementation in the relationship between peer support towards training transfer – conceived as a specific context factor – and these outcome variables, which are relevant to the intervention's contents and goals.

Notably, only two moderation hypotheses were confirmed, highlighting a significant direct effect of manager support on team coordination and team performance. This result revealed that managerial support holds a pivotal role, mainly when action plans are underutilised, corroborating findings from prior research (e.g. Christensen *et al.*, 2019; Helland *et al.*, 2021; Nielsen *et al.*, 2023). These effects were prominent at lower levels of action plan implementation. This indicates that among workers participating in the intervention, the positive relationship between manager support and team coordination and performance was more pronounced when action plans developed during the intervention were less implemented.

These findings suggest a compound interaction between managerial support and the mechanisms of training transfer and action plan implementation. Specifically, while managerial support is crucial, its impact is modulated by how actively teams engage with and implement the action plans derived from training sessions. In other words, while managerial support can initiate and guide the intervention process, the autonomy of the team in engaging with and executing action plans plays a crucial role in determining the overall effectiveness of the intervention. Overall, this evidence merges with the theoretical perspectives advocating for the critical role of effective managerial support in the successful deployment of team interventions (Nielsen and Randall, 2013).

Conversely, this relationship weakens when higher levels of action plan implementation are reported. In essence, when participants report greater action plan implementation, the influence of managerial support on team coordination and performance tends to diminish. One plausible interpretation of this finding is that teams actively implementing action plans during the intervention may require less immediate managerial support to coordinate their efforts and achieve strong performance. It can be argued that the implementation of teamwork-enhancing action plans, designed to enhance teamwork and formulated collaboratively during the sessions, reduces teams' reliance on direct managerial support for effective coordination and performance. The team coaching sessions, typically designed to boost team autonomy, ensure equal engagement and contribution from all members in the action planning process, thereby fostering their commitment and ownership. It is possible that, in some teams, managers were instrumental in enacting these plans, thereby incorporating an element of managerial support.

Unfortunately, no indirect effects were observed in the relationship between peer support towards training transfer and the intervention outcomes, indicating no mediating influence. However, the direct causal effects of peer support on training transfer, teamwork, team coordination and team performance were particularly revealing. This suggests that peer support functions as a crucial lever for enhancing team dynamics, independent of its association with training transfer and action plan implementation. Such findings highlight the theoretical and empirical importance of fostering a supportive peer environment to enhance intervention effectiveness, echoing sentiments from existing literature (Buljac-Samardzic *et al.*, 2020). This could involve designing intervention activities that promote peer engagement and support, enhancing collective efficacy and coordination within teams. While bolstering the direct effects of peer support, these strategies could amplify the benefits derived from managerial support by creating a more cohesive and mutually supportive team environment.

The obtained results call for a deeper reflection on the role of digital tools and platforms in facilitating team interventions. Using digital team coaching and social network visualisation tools (e.g. sociomaps) offers novel insights into team interactions and performance dynamics. These tools assist in identifying and addressing teamwork challenges and monitoring the ongoing progress and effectiveness of interventions. This aligns with the theoretical projection that technology, through improved connectivity and accessibility, could enhance learning and intervention effectiveness across various domains (Lee and Tan, 2023). Consistent with this perspective, academic research argues that digital platforms can transform traditional team-building approaches by providing real-time data and analytics, further enhancing the adaptability and responsiveness of teams to changing conditions (e.g. Haque, 2023; Porath, 2023).

Overall, the study contributes significantly to the discourse on digital team coaching by highlighting the situational importance of managerial support, particularly with insufficient action plan implementation. Moreover, the direct benefits of peer support emphasise the necessity of a supportive team environment for the success of digital intervention implementation. From a broader perspective, our findings suggest that traditional paradigms of team coaching are being challenged and must be re-evaluated to maintain relevance in remote and hybrid working models (Wiatr and Skowron-Mielnik, 2022). To sum up, our research contributes substantially to understanding how digital team coaching interventions can be effectively designed and implemented to address the dynamic needs of modern organisations.

Practical implications

The findings of our study suggest key practical implications for practitioners, organisations and researchers. Practitioners can emphasise providing enhanced managerial support, which is especially crucial in the initial stages of the digital team coaching intervention and where there is limited implementation of action plans. In other words, it is not only a matter of the role of the coaches and how they can effectively facilitate the transfer of knowledge and the application of concepts learned in the workplace (Shuffer *et al.*, 2018). It is equally important, especially in contexts where the team may face challenges imposed by virtual settings (i.e. difficulties in developing a sense of coordination and management), to consider the crucial role of the manager, who coordinates and is responsible for the entire team. The manager must create a physical and virtual environment that enables, supports and facilitates the practical application of the strategies and concepts discussed during the coaching sessions. This approach can significantly influence team coordination and performance.

Similarly, practitioners should foster a supportive peer environment that directly contributes to effective teamwork and the successful transfer of training within teams, as suggested by previous research (Ford *et al.*, 2018). For organisations, it is crucial to focus on the sustained development and implementation of action plans to maximise long-term team effectiveness. Regular monitoring and assessment of team dynamics are essential, and it is necessary to adjust support mechanisms to meet the team's evolving needs. Meanwhile, researchers should explore how managerial and peer support impact team performance in digital interventions. This would provide empirical data to refine intervention strategies further and enhance their effectiveness across various organisational contexts.

Limitations and future directions

These results should be interpreted with caution due to the limitations of this study. For instance, variations in the intervention implementation protocols across the four

participating organisations, in terms of session number and format, though minor, might have influenced the outcomes. The study's timing during the COVID-19 pandemic may have influenced worker interactions, suggesting the value of future studies in post-pandemic contexts and with evolving remote work patterns. In addition, implementing group interventions is challenging as not all team members can participate simultaneously without affecting the team's operational capacity, particularly for interventions lasting more than 1 h.

Moreover, the reliance on self-report data introduces potential bias and limits the depth of insights compared with more detailed answers possible through qualitative research. Also, the computation of interpersonal conflict at work – comprising task and role conflict – and team performance – involving support, autonomy, reflexivity and participation – as singular variables might have affected the results. Future research could undertake a more granular analysis of these constructs. Finally, other concurrent interventions could have influenced the outcomes as part of a broader multilevel intervention project, although the digital team coaching intervention was the sole group-level focus.

Conclusions

Our research contributes to the discussion on digital team coaching, which is essential in today's virtual work environments. By examining the roles of managerial and peer support, our study provides insights into the conditions that enhance the effectiveness of digital coaching for improving team dynamics and performance. Specifically, confirming two moderation hypotheses highlights the situational importance of managerial support, especially when action plan implementation is limited. Furthermore, the direct benefits of peer support underline the importance of a supportive team environment for the success of digital interventions.

Reflecting on our findings within the broader context of digital transformation in the workplace, the shift towards remote and hybrid working models calls for a re-evaluation of traditional team coaching methods. Our study bridges theoretical perspectives and organisational realities, marking progress in understanding how digital team coaching interventions can be effectively designed and implemented.

References

Bahbouh, R. (2012), *Sociomapping of Teams*, Dar Ibn Rushd, Prague, Czech Republic.

Bahbouh, R. and Lasker, G.E. (2014), *Sociodiagnostics and Sociomapping, International Institute for Advanced Studies in Systems Research and Cybernetics*, Tecumseh, Ontario.

Bahbouh, R. and Willis, P. (2022), "Navigating crisis with integrative systemic team coaching (ISTC)", in Clutterbuck, D., Turner, T. and Murphy, C. (Eds), *The Team Coaching Casebook*, Open University Press.

Baldwin, T.T. and Ford, J.K. (1988), "Transfer of training: a review and directions for future research", *Personnel Psychology*, Vol. 41 No. 1, pp. 63-105, doi: 10.1111/j.1744-6570.1988.tb00632.x.

Bell, B.S., McAlpine, K.L. and Hill, N.S. (2023), "Leading virtually", *Annual Review of Organizational Psychology and Organizational Behavior*, Vol. 10 No. 1, pp. 339-362, doi: 10.1146/annurev-orgpsych-120920-050115.

Bernardová, K. (2012), "Using sociomapping with the Czech army", in Bahbouh, R., Rozehnalová, E. and Sailerová, V. (Eds), *New Perspectives of Psychodiagnostics*, pp. 71-82, QED Group, Prague, Czech Republic.

Bjerke, V. (2023), "Contextual antecedents for team learning in professional service firms", *The Learning Organization*, Vol. 30 No. 4, pp. 446-464, doi: 10.1108/tlo-11-2022-0139.

Bui, H., Chau, V.S., Degl'Innocenti, M., Leone, L. and Vicentini, F. (2019), "The resilient organisation: a meta-analysis of the effect of communication on team diversity and team performance", *Applied Psychology*, Vol. 68 No. 4, pp. 621-657, doi: 10.1111/apps.12203.

Buljac-Samardzic, M., Doekhie, K.D. and van Wijngaarden, J.D. (2020), "Interventions to improve team effectiveness within health care: a systematic review of the past decade", *Human Resources for Health*, Vol. 18 No. 1, pp. 1-42, doi: 10.1186/s12960-019-0411-3.

Christensen, M., Innstrand, S.T., Saksvik, P.Ø. and Nielsen, K. (2019), "The line manager's role is to implement successful organisational interventions", *The Spanish Journal of Psychology*, Vol. 22, pp. 1-11, doi: 10.1017/sjp.2019.4.

Dawson, J.F., West, M.A. and Markiewicz, L. (2006), *Aston Team Performance Inventory: Management Set*, ASE.

DeVellis, R.F. and Thorpe, C.T. (2021), *Scale Development: Theory and Applications*, Sage publications.

Driskell, J.E., Salas, E. and Driskell, T. (2018), "Foundations of teamwork and collaboration", *American Psychologist*, Vol. 73 No. 4, pp. 334-348, doi: 10.1037/amp0000241.

Edmondson, A.C. (2002), "The local and variegated nature of learning in organisation: a group-level perspective", *Organization Science*, Vol. 13 No. 2, pp. 128-146, doi: 10.1287/orsc.13.2.128.530.

Ford, J.K., Baldwin, T.T. and Prasad, J. (2018), "Transfer of training: the known and the unknown", *Annual Review of Organizational Psychology and Organizational Behavior*, Vol. 5 No. 1, pp. 201-225, doi: 10.1146/annurev-orgpsych-032117-104443.

Franc, M., Bahbouh, R. and Kubík, R. (2019), "The effect of manager's frequency and quality of communication on team's performance", in Procházka, J., Kratochvíl, T. and Vaculík, M. (Eds), *Proceedings of the 18th International Conference – Work and Organizational Psychology 2019*, Brno, Czech Republic: Masaryk University Press, pp. 44-52, doi: 10.5817/CZ.MUNI.P210-9488-2019-4.

Friedman, R.A., Tidd, S.T., Currall, S.C. and Tsai, J.C. (2000), "What goes around comes around: the impact of personal conflict style on work conflict and stress", *International Journal of Conflict Management*, Vol. 11 No. 1, pp. 32-55, doi: 10.1108/eb022834.

Gilley, A., Gilley, J.W., McConnell, C.W. and Veliquette, A. (2010), "The competencies used by effective managers to build teams: an empirical study", *Advances in Developing Human Resources*, Vol. 12 No. 1, pp. 29-45, doi: 10.1177/1523422310365720.

Giusino, D., De Angelis, M., Kubík, R., Axtell, C. and Pietrantoni, L. (2023), "Digital team coaching for workplace communication: a longitudinal evaluation of recipients' perceptions", *Team Performance Management: An International Journal*, Vol. 29 Nos 7/8, pp. 257-277, doi: 10.1108/TPM-11-2022-0077.

Grohmann, A. and Kauffeld, S. (2013), "Evaluating training programs: development and correlates of the questionnaire for professional training evaluation", *International Journal of Training and Development*, Vol. 17 No. 2, pp. 135-155, doi: 10.1111/ijtd.12005.

Haque, S.M.S. (2023), "The impact of remote work on HR practices: navigating challenges, embracing opportunities", *European Journal of Human Resource Management Studies*, Vol. 7 No. 1, p. 1, doi: 10.46827/ejhrms.v7i1.1549.

Harteis, C., Goller, M. and Caruso, C. (2020), "Conceptual change in the face of digitalisation: challenges for workplaces and workplace learning", *Frontiers in Education*, Vol. 5, p. 1, doi: 10.3389/feduc.2020.00001.

Helland, E., Christensen, M., Innstrand, S.T. and Nielsen, K. (2021), "Line managers' middle-levelness and driving proactive behaviours in organisational interventions", *International Journal of Workplace Health Management*, Vol. 14 No. 6, pp. 577-592, doi: 10.1108/IJWHM-08-2020-0136.

Holton, E.F., III., Bates, R.A. and Ruona, W.E.A. (2000), "Development of a generalised learning transfer system inventory", *Human Resource Development Quarterly*, Vol. 11 No. 4, pp. 333-360, doi: 10.1002/1532-1096(200024)11:4<333::AID-HRDQ2>3.0.CO;2-P.

Igartua, J.J. and Hayes, A.F. (2021), "Mediation, moderation, and conditional process analysis: concepts, computations, and some common confusions", *The Spanish Journal of Psychology*, Vol. 24, p. e49.

Kinnunen, J., Collan, M., Georgescu, I. and Hosseini, Z. (2021), "Digital coaching system for real options analysis with multi-expert and machine learning support", *Proceedings of the 23rd HCI International Conference, HCII 2021 – Late Breaking Papers on Multimodality, eXtended*.

Klaic, A., Burtscher, M.J. and 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*, Vol. 93 No. 4, pp. 942-966.

Lacerenza, C.N., Marlow, S.L., Tannenbaum, S.I. and Salas, E. (2018), "Team development interventions: evidence-based approaches for improving teamwork", *American Psychologist*, Vol. 73 No. 4, pp. 517-531, doi: 10.1037/amp0000295.

Larson, L. and DeChurch, L.A. (2020), "Leading teams in the digital age: four perspectives on technology and what they mean for leading teams", *The Leadership Quarterly*, Vol. 31 No. 1, p. 101377, doi: 10.1016/j.leaqua.2019.101377.

Lawrence, P. (2021), "Team coaching: systemic perspectives and their limitations", *Philosophy of Coaching*, Vol. 6 No. 1, pp. 52-82, doi: 10.22316/poc/06.1.04.

Lee, A., Chang, P. and Chang, H. (2022), "How workplace fun promotes informal learning among team members: a cross-level study of the relationship between workplace fun, team climate, workplace friendship, and informal learning", *Employee Relations: The International Journal*, Vol. 44 No. 4, pp. 870-889, doi: 10.1108/er-06-2021-0251.

Lee, W.C. and Tan, B.C.Y. (2023), "Workplace learning strategies, enablers, and challenges in the context of digital innovation", *Journal of Workplace Learning*, Vol. 35 No. 2, pp. 192-209, doi: 10.1108/JWL-04-2022-0045.

McGuier, E.A., Kolko, D.J., Stadnick, N.A., Brookman-Frazee, L., Wolk, C.B., Yuan, C.T. and Aarons, G.A. (2023), "Advancing research on teams and team effectiveness in implementation science: an application of the exploration, preparation, implementation, sustainment (EPIS) framework", *Implementation Research and Practice*, Vol. 4, p. 26334895231190855, doi: 10.1177/26334895231190855.

Mathieu, J.E., Hollenbeck, J.R., van Knippenberg, D. and Ilgen, D.R. (2017), "A century of work teams in the Journal of Applied Psychology", *Journal of Applied Psychology*, Vol. 102 No. 3, pp. 452-467, doi: 10.1037/ap10000128.

Nafukho, F.M., Irby, B.J., Pashmforoosh, R., Lara-Alecio, R., Tong, F., Lockhart, M.E., El Mansour, W., Tang, S., Etchells, M. and Wang, Z. (2022), "Training design in mediating the relationship of participants' motivation, work environment, and transfer of learning", *European Journal of Training and Development*, Vol. 47 No. 10, pp. 112-132, doi: 10.1108/EJTD-06-2022-0070.

Nielsen, K. and Miraglia, M. (2017), "What works for whom in which circumstances? On the need to move beyond the 'what works?' question in organisational intervention research", *Human Relations*, Vol. 70 No. 1, pp. 40-62, doi: 10.1177/0018726716670226.

Nielsen, K. and Randall, R. (2009), "Managers' active support when implementing teams: the impact on employee wellbeing", *Applied Psychology: Health and Well-Being*, Vol. 1 No. 3, pp. 374-390, doi: 10.1111/j.1758-0854.2009.01016.x.

Nielsen, K. and Randall, R. (2013), "Opening the black box: presenting a model for evaluating organisational-level interventions", *European Journal of Work and Organizational Psychology*, Vol. 22 No. 5, pp. 601-617, doi: 10.1080/1359432X.2012.690556.

Nielsen, K., Randall, R. and Christensen, K.B. (2010), "Does training managers enhance the effects of implementing team-working? A longitudinal, mixed methods field study", *Human Relations*, Vol. 63 No. 11, pp. 1719-1741, doi: 10.1177/0018726710365004.

Nielsen, K., De Angelis, M., Innstrand, S.T. and Mazzetti, G. (2023), "Quantitative process measures in interventions to improve employees' mental health: a systematic literature review and the IPEF framework", *Work and Stress*, Vol. 37 No. 1, pp. 1-26, doi: 10.1080/02678373.2022.2080775.

Nyfoudi, M., Shipton, H., Theodorakopoulos, N. and Budhwar, P. (2023), "Managerial coaching skill and team performance: how does the relationship work and under what conditions?", *Human Resource Management Journal*, Vol. 33 No. 2, pp. 328-345, doi: 10.1111/1748-8583.12443.

O'Donovan, R. and McAuliffe, É. (2020), "A systematic review exploring the content and outcomes of interventions to improve psychological safety, speaking up and voice behaviour", *BMC Health Services Research*, Vol. 20 No. 1, doi: 10.1186/s12913-020-4931-2.

Peters, J. and Carr, C. (2013), "Team effectiveness and team coaching literature review", *Coaching: An International Journal of Theory, Research and Practice*, Vol. 6 No. 2, pp. 116-136, doi: 10.1080/17521882.2013.798669.

Roodbari, H., Axtell, C., Nielsen, K. and Sorensen, G. (2021), "Organisational interventions to improve employees' health and wellbeing: a realist synthesis", *Applied Psychology*, Vol. 71 No. 3, pp. 1-24, doi: 10.1111/apps.12346.

Roodbari, H., Nielsen, K. and Axtell, C. (2023), "What works for whom in which circumstances? An integrated realist evaluation model for organisational interventions", *Scandinavian Journal of Work and Organizational Psychology*, Vol. 8 No. 1, pp. 1-17, doi: 10.16993/sjwop.171.

Rozehnalová, E. (2013), "Reliability and validity of communication sociomapping: focused on peer-to-peer ratings in small work groups", Unpublished doctoral dissertation, Charles University, Prague, Czech Republic, available at: https://dspace.cuni.cz/bitstream/handle/20.500.11956/57021/RPTX_2013_1_11210_ASZK00844_427191_0_146294.pdf?sequence=1&isAllowed=y

Salanova, M., Cifre, E., Llorens, S., Martínez, I.M. and Lorente, L. (2016), "Psychosocial risks and positive factors among construction workers", *Occupational Health and Safety*, pp. 319-344.

Salas, E., Reyes, D.L. and McDaniel, S.H. (2018), "The science of teamwork: progress, reflections, and the road ahead", *American Psychologist*, Vol. 73 No. 4, pp. 593-600, doi: 10.1037/amp0000334.

Shuffler, M.L., Diazgranados, D., Maynard, M.T. and Salas, E. (2018), "Developing, sustaining, and maximising team effectiveness: an integrative, dynamic perspective of team development interventions", *Academy of Management Annals*, Vol. 12 No. 2, pp. 688-724, doi: 10.5465/annals.2016.0045.

Solms, L., Van Vianen, A., Koen, J., Theeboom, T., De Pagter, A.P. and De Hoog, M. (2021), "Turning the tide: a quasi-experimental study on a coaching intervention to reduce burn-out symptoms and foster personal resources among medical residents and specialists in The Netherlands", *BMJ Open*, Vol. 11 No. 1, p. e041708.

Stratton, E., Lampit, A., Choi, I., Malmberg Gavelin, H., Aji, M., Taylor, J. and Glozier, N. (2022), "Trends in effectiveness of organisational eHealth interventions in addressing employee mental health: systematic review and meta-analysis", *Journal of Medical Internet Research*, Vol. 24 No. 9, p. e37776, doi: 10.2196/37776.

Supriharyanti, E. and Sukoco, B.M. (2023), "Organisational change capability: a systematic review and future research directions", *Management Research Review*, Vol. 46 No. 1, pp. 46-81, doi: 10.1108/MRR-01-2021-0039.

Trenerry, B., Chng, S., Wang, Y., Suhaila, Z., Lim, S., Lü, H., . . . and Oh, P. (2021), "Preparing workplaces for digital transformation: an integrative review and framework of multilevel factors", *Frontiers in Psychology*, Vol. 12, doi: 10.3389/fpsyg.2021.620766.

Vuchkovski, D., Zalaznik, M., Mitręga, M. and Pfajfar, G. (2023), "A look at the future of work: the digital transformation of teams from conventional to virtual", *Journal of Business Research*, Vol. 163, p. 113912, doi: 10.1016/j.jbusres.2023.113912.

Wiatr, A. and Skowron-Mielnik, B. (2022), "Hybrid team management: the long and winding road", *Organizational Dynamics*, Vol. 52 No. 1, p. 100936, doi: 10.1016/j.orgdyn.2022.100936.

Zakharchyn, H.M. and Kosmyna, Y.M. (2015), "Application of modern methods of sociometric analysis for modeling personnel optimal behavior at the enterprise", *Economics, Entrepreneurship, Management*, Vol. 2 No. 1, pp. 33-38, available at: http://ena. lp.edu.ua:8080/handle/ntb/29259

Further reading

Andersen, M.F., Nielsen, K. and Ajslev, J.Z.N. (2021), "The relational fit in organisational interventions—what can organisational research learn from research in psychotherapy?", *International Journal of Environmental Research and Public Health*, Vol. 18 No. 15, p. 8104, doi: 10.3390/ijerph18158104.

Callea, A., Urbini, F., Benevene, P., Cortini, M., Di Lemma, L. and West, M. (2014), "Psychometric properties and factor structure of the Italian version of the 'Aston Team Performance Inventory'", *Team Performance Management*, Vol. 20 Nos 1/2, pp. 6-18, doi: 10.1108/TPM-05-2013-0016.

Holton, E.F., III. Bates, R.A., Seyler, D.L. and Carvalho, M.B. (1997), "Toward construct validation of a transfer climate instrument", *Human Resource Development Quarterly*, Vol. 8 No. 2, pp. 95-113, doi: 10.1002/hrdq.3920080203.

Hughes, A.M., Zajac, S., Woods, A.L. and Salas, E. (2020), "The role of work environment in training sustainment: a meta-analysis", *Human Factors: The Journal of the Human Factors and Ergonomics Society*, Vol. 62 No. 1, pp. 166-183, doi: 10.1177/0018720819845988.

Marlow, S.L., Lacerenza, C.N., Paoletti, J., Burke, C.S. and Salas, E. (2018), "Does team communication represent a one-size-fits-all approach? A meta-analysis of team communication and performance", *Organisational Behavior and Human Decision Processes*, Vol. 144, pp. 145-170, doi: 10.1016/j.obhdp.2017.08.001.

Nielsen, K. and Abildgaard, J.S. (2013), "Organisational interventions: a research-based framework for the evaluation of both process and effects", *Work and Stress*, Vol. 27 No. 3, pp. 278-297, doi: 10.1080/02678373.2013.812358.

Nielsen, K. and Shepherd, R. (2022), "Understanding the outcomes of training to improve employee mental health: a novel framework for training transfer and effectiveness evaluation", *Work and Stress*, Vol. 36 No. 4, pp. 377-391, doi: 10.1080/02678373.2022.2028318.

World Medical Association (2013), "World medical association declaration of Helsinki", *JAMA*, Vol. 310 No. 20, p. 2191, doi: 10.1001/jama.2013.281053.

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