

# The AI-powered future of digital transformation: enhancing organizations and leadership development

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## Abstract

**Purpose** – This paper examines the integration of AI-enhanced coaching systems into traditional organizational development practices and develops a comprehensive theoretical framework to understand these complex interactions.

**Design/methodology/approach** – A narrative literature review synthesizes theoretical perspectives and empirical studies at the intersection of digital transformation and coaching practices. This review systematically examines multiple theoretical frameworks related to human–technology collaboration in organizational contexts.

**Findings** – The research establishes a theoretical framework comprising four interconnected domains: cognitive amplification, collaborative learning, ethical governance and adaptive evolution. Three hypothetical case studies demonstrate the practical application of this framework across diverse organizational settings, revealing both challenges and opportunities in implementing AI-enhanced coaching initiatives.

**Practical implications** – Organizations implementing AI-enhanced coaching must develop comprehensive integration strategies, establish robust ethical governance frameworks, transform coaching roles, assess organizational readiness, design balanced coaching programs, develop new evaluation metrics and establish appropriate supervision mechanisms.

**Originality/value** – This paper offers the first comprehensive theoretical framework specifically addressing the integration of AI technologies in coaching practices, synthesizing distributed cognition theory, complex systems thinking, and social cognitive theory to provide a foundation for future research and practice in this rapidly evolving field.

**Keywords** AI-enhanced coaching, Digital transformation, Organizational development, Work-applied management, Leadership development

**Paper type** Research paper

## Introduction

The rapid advancement of artificial intelligence (AI) and digital technologies has fundamentally transformed the landscape of organizational coaching and development interventions. The integration of AI-enhanced coaching systems into traditional work-applied management practices represents a significant shift in how organizations approach leadership development and organizational change. This paper specifically examines the integration of AI-enhanced coaching in organizational development contexts, synthesizing theoretical perspectives and practical applications to develop a comprehensive framework. As defined by Terblanche (2020), coaching is a structured, facilitative process that enables individuals to



develop specific skills and achieve goals through reflection, discovery, and focused action. Following Whitmore's approach, coaching is viewed as distinct from mentoring, with coaches facilitating learning rather than directing from personal expertise.

This article contributes to the existing literature in three significant ways. First, a comprehensive theoretical framework is developed that synthesizes the complex interactions between human coaches, AI systems, and organizational contexts. Second, the practical implications of this framework are illustrated through three theoretical applications that demonstrate how AI-enhanced coaching might be applied in diverse organizational settings. Third, the article addresses the critical ethical considerations and potential challenges that arise from the integration of AI technologies in coaching practices. For the purposes of this research, AI-enhanced coaching is defined as the integration of AI technologies with traditional coaching practices to augment, improve or scale coaching interventions while maintaining the fundamental human-centered nature of coaching relationships.

The evolution of coaching practices, as documented by [De Haan and Nilsson \(2023\)](#), has demonstrated the field's adaptability to changing organizational needs. However, the emergence of AI-enabled coaching platforms presents unique opportunities and challenges that warrant careful theoretical examination. Recent research by [Terblanche \(2024\)](#) has highlighted how AI coaching is redefining people development and organizational performance, necessitating new frameworks to understand these evolving practices. The integration of digital technologies in coaching practices has been accelerated by recent developments in large language models and AI, as noted by [Terblanche et al. \(2022\)](#), creating a need for robust theoretical frameworks to guide implementation and research. This paper responds to this need by proposing a comprehensive framework for understanding AI-enhanced coaching in organizational development contexts, with particular attention to leadership development applications.

### Literature review

The evolution of digital transformation and AI in coaching practices has been extensively documented in the recent literature. A comprehensive examination of AI in digital sports coaching has been conducted by [Jud and Thalmann \(2025\)](#), where significant advancements in sports performance optimization through AI-enabled coaching systems have been identified. The integration of these technologies has been found to improve athlete performance monitoring and provide personalized training recommendations.

The debate regarding whether AI could successfully replace human coaches versus serving as a supplementary tool between coaching sessions has emerged as a significant theme in coaching literature. [Terblanche \(2020\)](#) has developed a design framework specifically for creating artificial intelligence coaches, underlining the technical and ethical considerations necessary for effective implementation. This work has been extended by [Terblanche \(2024\)](#), who examines how AI coaching fundamentally redefines people development approaches and organizational performance metrics. This research suggests that while AI may not fully replace human coaches in all contexts, it can significantly increase coaching processes through data analysis, pattern recognition and personalized feedback mechanisms.

The ethical implications of digital and AI coaching have been thoroughly explored by [Diller \(2024\)](#), who underlines the importance of maintaining ethical standards while implementing AI-driven coaching solutions. The research highlights relevant considerations regarding privacy, data security and the preservation of human agency in coaching relationships. These ethical considerations have been further elaborated in the context of organizational adaptation processes by [Suvalova et al. \(2021\)](#), who examine how digital transformation affects employee onboarding and development.

[Terblanche et al. \(2022\)](#) have conducted significant research on coaching at scale, investigating the efficacy of AI coaching in providing development support to larger populations than would be feasible with human coaches alone. Their work suggests that

AI-enhanced coaching can effectively supplement human coaching interventions, particularly for specific, well-defined developmental objectives. This research provides evidence that AI-enhanced coaching represents a promising approach for organizations seeking to extend coaching benefits throughout their workforce while maintaining quality and consistency in delivery.

The role of digital transformation in organizational coaching has been analyzed by [Grosse and Bauer \(2024\)](#), who present a framework for understanding how digital coaching methodologies can be effectively implemented in Industry 4.0 contexts. This work has been expanded upon by [Bauer and Grosse \(2024\)](#), who highlight the importance of human-centric approaches in digital transformation coaching, particularly in maintaining strategic alignment between technological capabilities and organizational objectives. These perspectives provide valuable insights into the practical implementation challenges of AI-enhanced coaching in rapidly evolving technological environments.

Leadership development in the context of AI-enhanced coaching has been examined by [Sposato \(2024a, b\)](#), who questions traditional assumptions about leadership development and explores how AI is reshaping leadership training methodologies. The research suggests that AI technologies are not merely tools for automation but fundamentally transform how leadership capabilities are developed and improved. [Passmore and Tee \(2024\)](#) have further investigated this area by examining the powers of AI in knowledge synthesis and its applications in learning, development, and coaching contexts. Their work stresses the potential of AI to increase knowledge transfer and skill development in leadership development programs.

The integration of AI-CRM systems in organizational digital transformation has been investigated by [Chatterjee et al. \(2022\)](#), who stress the significant role of leadership support in successful digital transformation initiatives. Their research provides insights into how microfoundational perspectives can be applied to understand the complex interactions between technological systems and organizational leadership. This work contributes to understanding how AI-enhanced coaching might be integrated into broader digital transformation initiatives within organizations.

The conceptual foundations of AI-enabled coaching have been thoroughly explored by [Graßmann and Schermuly \(2021\)](#), who provide a comprehensive analysis of coaching concepts and capabilities in the context of AI. Their work establishes a theoretical framework for understanding how AI systems can complement and improve traditional coaching practices. [De Haan and Nilsson \(2023\)](#) have further contributed to this understanding through their meta-analysis of coaching effectiveness, providing insights into how AI-enhanced coaching outcomes might be evaluated and compared to traditional coaching approaches.

The educational dimension of digital transformation has been examined by [Klopov et al. \(2023\)](#), who analyze how AI is reshaping educational methodologies and learning environments. This research has been complemented by [ElSayary \(2024\)](#), who investigates the integration of generative AI in active learning environments and its impact on metacognitive development and technological skill acquisition. These educational perspectives offer valuable insights into how learning principles can be applied to AI-enhanced coaching in organizational contexts.

The evolution of coaching practices has been further contextualized by research examining the effectiveness of workplace coaching, as demonstrated in the meta-analysis conducted by [Wang et al. \(2022\)](#). This work has been supplemented by investigations into the impact of digital transformation on organizational learning and development, as explored by [Wall et al. \(2024\)](#) in their examination of higher education policy frameworks. These studies provide valuable insights into how coaching effectiveness might be assessed in digitally transformed environments.

Recent developments in digital coaching methodologies have been comprehensively documented in “The Digital and AI Coaches Handbook” edited by [Passmore et al. \(2024a, b\)](#), which provides practical insights into the implementation of online, AI and technology-improved coaching practices. This work builds upon earlier research by [Terblanche et al.](#)

(2022) regarding the efficacy of AI in coaching at scale. The handbook offers detailed guidance on the integration of AI technologies into coaching practices, addressing both technical and ethical considerations in implementation.

The transformation of organizational learning through digital technologies has been examined by [Einola and Khoreva \(2023\)](#), who explore the complex relationship between human workers and AI in workplace ecosystems. Their research provides valuable insights into how organizations can effectively integrate AI-enhanced coaching systems while maintaining essential human elements of organizational development. This balance between technological augmentation and human-centered coaching approaches represents a critical consideration in the development of AI-enhanced coaching programs.

The implementation of digital coaching methodologies in organizational contexts has been examined from multiple perspectives, with particular attention to the challenges and opportunities presented by emerging technologies ([Sposato et al., 2025](#)). The literature consistently highlights the potential for AI to augment coaching practices while stressing the importance of maintaining human elements in coaching relationships. As [Terblanche \(2020, 2024\)](#) has observed, the development of effective AI coaching systems requires careful consideration of both technical capabilities and ethical implications. The growing body of research in this area provides a foundation for understanding how AI-enhanced coaching might be effectively integrated into organizational development practices, while highlighting areas requiring further investigation and theoretical development.

## Methodology

A narrative literature review methodology has been employed to synthesize and analyze the complex interactions between AI-enhanced coaching practices and digital transformation in organizational contexts, following the approach outlined by [Juntunen and Lehenkari \(2021\)](#). This methodological approach has been selected due to its suitability for exploring emerging and interdisciplinary fields where research is still developing, as is the case with AI-enhanced coaching. The review process has been structured to provide a comprehensive understanding of how digital technologies are reshaping coaching practices within work-applied management interventions, as conceptualized by [Wall \(2016\)](#).

The methodological approach has been designed to capture both theoretical developments and practical applications in this rapidly evolving field, particularly in the context of digital transformation, as discussed by [Raisch and Krakowski \(2021\)](#). While a fully systematic approach was not implemented, efforts were made to conduct a thorough examination of the available literature.

The review process has been conducted through a structured examination of theoretical frameworks and empirical studies that address the intersection of digital transformation and coaching practices, following [Hart's \(2018\)](#) guidelines for literature synthesis. A particular focus has been placed on identifying works that contribute to understanding the evolution of coaching practices in digitally transformed environments, as exemplified in recent studies by [Passmore and Tee \(2024\)](#).

The analytical process has been structured to facilitate the integration of multiple theoretical perspectives and empirical findings, following [Torraco's \(2016\)](#) integrative review methodology. Special attention has been given to literature that addresses the challenges and opportunities presented by AI in coaching contexts, particularly focusing on the evolution of coaching applications discussed by [De Haan and Nilsson \(2023\)](#).

Multiple electronic databases have been systematically searched, including Business Source Complete and Google Scholar, using predetermined keywords related to digital coaching, AI-enhanced coaching, and work-applied management. The search was limited to English-language publications from January 2015 to June 2024, to focus on contemporary developments in this rapidly evolving field.

Inclusion criteria focused on publications that: (1) directly addressed AI applications in coaching contexts; (2) discussed digital transformation in relation to organizational development or leadership coaching or (3) provided theoretical frameworks relevant to understanding human–AI collaboration. Publications were excluded if they: (1) focused solely on technical aspects of AI without relevance to coaching applications; (2) addressed coaching without reference to digital or technological dimensions; or (3) were non-peer-reviewed sources without substantial theoretical or empirical contribution.

It must be acknowledged that the literature selection process was not without limitations. The rapid pace of development in AI technologies means that some recent innovations may not yet be reflected in the academic literature. These limitations have been mitigated through efforts to include diverse perspectives and theoretical approaches.

The search process was complemented by backward and forward citation tracking to ensure comprehensive coverage of relevant literature. Following the literature review, illustrative scenarios have been developed to demonstrate the potential applications of the theoretical framework in diverse organizational contexts. These scenarios should not be interpreted as demonstrating empirical outcomes, but rather as depicting potential applications that would require empirical validation in future research.

### Theoretical framework

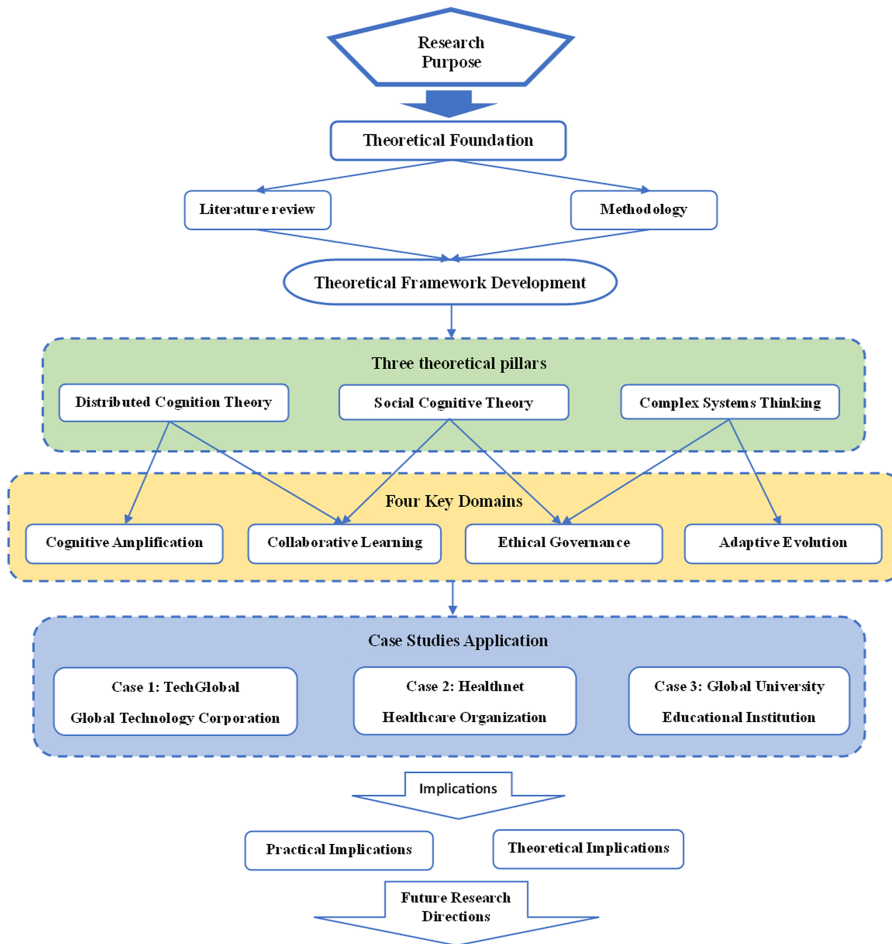
The theoretical framework developed in this study conceptualizes AI-enhanced coaching as a complex, dynamic system of human–technology collaboration within organizational contexts, building upon the foundational work of [Engelbart \(1962\)](#) and [Licklider \(1960\)](#) in human–technology symbiosis. This framework has been constructed upon three fundamental pillars: distributed cognition theory, complex systems thinking, and social cognitive theory, as synthesized from the work of [Hutchins \(1995\)](#) and further developed in the context of AI–human collaboration.

[Figure 1](#) illustrates the theoretical framework’s structure and its application throughout this research. This comprehensive visualization demonstrates the research’s progression from its foundational elements through to its practical implications. Starting with the theoretical perspectives and methodological approaches, the framework flows into the four key domains: cognitive amplification, collaborative learning, ethical governance and adaptive evolution. These domains emerge from a careful synthesis of theoretical foundations and lead into practical applications through three distinct scenarios across different sectors. The framework culminates in both theoretical and practical implications, pointing toward future research directions.

The first pillar, distributed cognition theory, provides a foundation for understanding how coaching processes are distributed across human and technological agents, as conceptualized by [Clark \(1998\)](#). In this context, coaching is conceptualized not as a simple dyadic relationship between coach and coachee but as a complex network of interactions mediated by digital technologies, reflecting the sophisticated paradigm described by [Passmore and Tee \(2024\)](#). The cognitive processes involved in coaching are understood to be distributed across multiple agents, including human coaches, AI systems, and organizational contexts, as explored in recent work by [Einola and Khoreva \(2023\)](#).

The second pillar, complex systems thinking, facilitates the understanding of how different elements of the coaching system interact and evolve over time, drawing on [Kauffman’s \(1995\)](#) exploration of complex adaptive systems. This perspective enables the recognition of emergent properties that arise from the interaction between human coaches, AI systems, and organizational contexts, as evidenced in recent studies by [Terblanche et al. \(2022\)](#). The framework acknowledges these interactions as non-linear, with coaching outcomes emerging from the complex interplay of multiple factors.

The third pillar, social cognitive theory, based on [Bandura’s \(1986\)](#) work, provides a basis for understanding how learning and development occur within AI-enhanced coaching



**Figure 1.** Theoretical framework and research flow: the integration of AI-enhanced coaching. Source: Authors

environments. This theoretical perspective enables the examination of how human agency is maintained and improved through technological augmentation of coaching practices, as explored by [Wall \*et al.\* \(2024\)](#). The framework accentuates the importance of maintaining human agency while taking advantage of the capabilities of AI systems, as discussed by [Raisch and Krakowski \(2021\)](#).

The connection between these theoretical pillars and the four domains of the framework is systematic and deliberate, with each domain drawing upon specific aspects of the underlying theories. [Table 1](#) illustrates these connections, showing how each theoretical pillar contributes to the formation and understanding of each domain within the AI-enhanced coaching framework.

The integration of these theoretical pillars has led to the development of a comprehensive framework that identifies four key domains of AI-enhanced coaching, building upon the philosophical perspectives articulated by [Simondon \(2017\)](#) and the ethical considerations examined by [Floridi \(2014\)](#):

**Table 1.** Relationship between theoretical pillars and framework domains

Domain	Primary theoretical pillars	Key concepts	Example applications
Cognitive amplification	Distributed cognition theory	Extended cognition; cognitive offloading; augmented intelligence	AI-based pattern recognition in communication analysis; data visualization for coaching insights; automated documentation of coaching progress
Collaborative learning	Social cognitive theory; Distributed cognition theory	Observational learning; reciprocal determinism; knowledge co-creation	Collaborative meaning-making between coach, coachee, and AI; shared digital workspaces; AI-suggested learning resources based on coaching conversations
Ethical governance	Social cognitive theory; Complex systems thinking	Moral agency; ethical decision-making; value alignment	Privacy protection in AI-coaching data; transparent algorithmic decision-making; control mechanisms for human override of AI suggestions
Adaptive evolution	Complex systems thinking	Emergence; self-organization; feedback loops; adaptation	Continuous improvement of coaching approaches based on outcomes; evolution of AI-coaching relationships over time; organizational learning through aggregated coaching data

**Source(s):** Authors

- (1) Cognitive amplification domain: This domain emerges primarily from distributed cognition theory, conceptualizing how AI systems augment the cognitive capabilities of both coaches and coachees. This reflects the transformation of work practices discussed by [Brynjolfsson and McAfee \(2014\)](#), recognizing that AI systems can augment human cognitive processes through advanced pattern recognition and decision support mechanisms. By distributing cognitive load across human and technological agents, coaching effectiveness can be developed through improved data analysis, pattern recognition, and knowledge accessibility that would be difficult for human coaches to achieve independently.
- (2) The collaborative learning domain: This domain draws substantially from both social cognitive theory and distributed cognition theory, addressing how knowledge is co-created through the interaction of humans and AI in coaching contexts. Building on the work of [De Haan and Nilsson \(2023\)](#), this domain highlights the reciprocal nature of learning within AI-enhanced coaching relationships. Social cognitive theory's concepts of observational learning and reciprocal determinism help explain how coaches and coachees learn from interactions with AI systems, while distributed cognition theory explains how knowledge is constructed across the network of human and technological agents involved in the coaching process.
- (3) The ethical governance domain: This domain is informed by social cognitive theory and complex systems thinking, focusing on the ethical considerations that must be addressed in AI-enhanced coaching. Drawing on [Bostrom's \(2014\)](#) critical examination of AI development, this domain incorporates robust ethical guidelines that ensure coaching practices remain aligned with human values and organizational objectives. Social cognitive theory contributes to an understanding of moral agency and ethical decision-making, while complex systems thinking helps navigate the

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emergent ethical challenges that arise from the interaction of multiple stakeholders in AI-enhanced coaching systems.

- (4) The adaptive evolution domain: This domain emerges primarily from complex systems thinking, addressing how coaching practices evolve through the continuous interaction between human coaches and AI systems, as explored by [Pickering \(1995\)](#). This domain recognizes that coaching practices must adapt to changing technological capabilities while maintaining their fundamental human-centered nature. Complex systems concepts such as emergence, self-organization, and feedback loops are particularly relevant in understanding how AI-enhanced coaching systems evolve over time in response to changing organizational contexts and technological capabilities.

These domains are interconnected through multiple feedback loops that enable continuous learning and adaptation, as conceptualized in work-applied management research by [Wall \(2016\)](#). The cognitive amplification domain provides improved insights that influence the collaborative learning domain, which in turn informs the approaches taken within the ethical governance domain. The principles established in the ethical governance domain shape how systems evolve within the adaptive evolution domain, which subsequently influences the capabilities available within the cognitive amplification domain. This cyclical relationship creates a dynamic framework that can respond to emerging challenges and opportunities in AI-enhanced coaching.

The framework stresses that successful AI-enhanced coaching requires careful attention to the balance between technological capabilities and human expertise, as highlighted by [Wang et al. \(2022\)](#). This balance is maintained through careful consideration of ethical implications and continuous evaluation of coaching outcomes. By integrating distributed cognition theory, complex systems thinking, and social cognitive theory, the framework provides a comprehensive foundation for understanding the complex interactions between human coaches, AI systems and organizational contexts in AI-enhanced coaching environments.

### **Discussion: illustrative applications**

The theoretical framework presented in this paper can be applied across diverse organizational contexts to guide the implementation of AI-enhanced coaching initiatives. The following illustrative scenarios demonstrate the potential applications of the framework in different sectors. It is important to note that these scenarios are theoretical constructs developed to exemplify how the framework might be implemented in practice. They do not represent actual implementations or empirical evidence, but rather serve as conceptual illustrations of potential applications that would require validation through future empirical research.

#### Scenario 1: Global Technology Corporation – AI-Enhanced Leadership Development Program

This scenario illustrates how the framework might be applied in a global technology corporation with approximately 50,000 employees across 30 countries. Such an organization, which could be referred to as TechGlobal, might implement an AI-enhanced coaching program to develop middle management capabilities during a period of rapid digital transformation, as conceptualized by [Raisch and Krakowski \(2021\)](#).

The program could be structured around a hybrid coaching model that integrates traditional human coaching with AI-powered coaching platforms. The AI system could be designed to provide continuous support between human coaching sessions, analyzing leadership behaviors and provide real-time feedback, reflecting the cognitive amplification domain of the theoretical framework. The system might utilize natural language processing to analyze written communications and meeting transcripts, potentially providing insights into leadership communication patterns and team dynamics.

Implementation challenges would likely emerge around the ethical governance domain, particularly concerning data privacy and the balance between technological monitoring and personal autonomy. These challenges could be addressed through the development of clear ethical guidelines and opt-in protocols, the following the principles discussed by [Terblanche et al. \(2022\)](#). Leaders might be given control over which aspects of their work would be analyzed by the AI system, and all AI-generated insights could first be shared with the individual leader before being discussed with their human coach.

The collaborative learning domain would be exemplified through the way the AI system and human coaches might work together. The AI system could identify patterns in leadership behavior and team performance, while human coaches would provide contextual interpretation and emotional support. This combination might prove particularly effective in helping leaders navigate complex organizational changes, as suggested by the work of [Passmore and Tee \(2024\)](#).

Outcomes of such a program could be measured through multiple metrics, including team performance indicators, employee engagement scores, and leadership capability assessments. The adaptive evolution domain would be demonstrated through the continuous refinement of the coaching approach based on accumulated data and feedback, potentially leading to increasingly effective coaching interventions over time.

#### Scenario 2: Healthcare Organization – Integrating AI Coaching for Clinical Leadership

This scenario explores how the framework might be implemented in a large healthcare network comprising multiple hospitals and outpatient facilities. Such an organization, which could be called HealthNet, might introduce AI-enhanced coaching to support clinical leaders in managing the increasing complexity of healthcare delivery while maintaining high standards of patient care.

The program could be designed to address the unique challenges of healthcare leadership, where decisions often carry significant consequences for patient outcomes. The cognitive amplification domain could be harnessed through AI systems that analyze clinical decision-making patterns and team interactions, potentially providing insights that would help leaders optimize their management approaches while maintaining focus on patient care quality, as conceptualized by [Wang et al. \(2022\)](#).

A significant challenge might emerge in the ethical governance domain regarding the use of AI in healthcare leadership development. Concerns could arise about the potential impact on clinical autonomy and the need to maintain human judgment in medical leadership decisions. These challenges might be addressed through careful system design that highlights AI as a support tool rather than a decision-maker, following the principles outlined by [De Haan and Nilsson \(2023\)](#).

The collaborative learning domain would be particularly evident in how the AI system could support the development of emotional intelligence in clinical leaders. The system might provide regular feedback on communication patterns and team dynamics, while human coaches would help leaders interpret this information within the context of healthcare's unique emotional demands. This approach would align with the work-applied management principles discussed by [Wall \(2016\)](#).

In this scenario, the program might potentially lead to improvements in team coordination and patient satisfaction scores. The adaptive evolution domain would be demonstrated through the system's ability to learn from successful leadership interventions and adapt its recommendations based on observed outcomes in different clinical contexts.

#### Scenario 3: Educational Institution – AI-Enhanced Professional Development Coaching

This scenario illustrates how the framework might be applied in a large public university transitioning to hybrid learning models. Such an institution, which could be referred to as Global University, might implement an AI-enhanced coaching program to support faculty and

administrative staff in developing digital teaching competencies and managing organizational change.

The program could utilize an innovative approach to the cognitive amplification domain, where AI systems analyze teaching patterns, student engagement metrics, and administrative processes to provide personalized coaching recommendations. This would align with the digital transformation challenges in higher education discussed by [Wall et al. \(2024\)](#) and [Dittmar et al. \(2025\)](#), particularly in supporting the development of new pedagogical approaches.

The ethical governance domain needs to be addressed through careful consideration of academic freedom and intellectual property rights. The AI system could be designed to provide suggestions while preserving faculty autonomy in course design and delivery methods. This approach would reflect the balance between technological innovation and human agency discussed by [Einola and Khoreva \(2023\)](#) and [López Jiménez et al. \(2023\)](#).

In the collaborative learning domain, the program would demonstrate how AI could support the development of digital teaching skills while maintaining the human element of education. Human coaches might work with faculty to interpret AI-generated insights about student engagement and learning outcomes, helping to develop more effective teaching strategies. This combination of human and AI could create a powerful learning environment for professional development.

The adaptive evolution domain would be particularly evident in how the program might respond to changing educational needs during implementation. The AI system could continuously learn from successful teaching innovations and help disseminate effective practices across the institution, while human coaches would support the emotional and practical aspects of change management.

These illustrative scenarios represent theoretical applications of the framework across diverse organizational contexts. While they suggest potential benefits and implementation approaches, it should be highlighted that actual outcomes would depend on numerous contextual factors and would require empirical validation. These scenarios are intended to stimulate thinking about how the framework might be applied in practice and to highlight areas for future research and development in AI-enhanced coaching.

### Implications for practice

The integration of AI-enhanced coaching into organizational development practices could potentially generate significant implications for practitioners, organizations, and the field of work-applied management. These potential implications have been derived from both the theoretical framework's four domains (cognitive amplification, collaborative learning, ethical governance, and adaptive evolution) and the illustrative scenarios presented, offering potential insights for the implementation of AI-enhanced coaching initiatives across various organizational contexts.

Within the cognitive amplification domain, a primary practical implication would involve the necessity for organizations to develop comprehensive integration strategies for AI-enhanced coaching systems. As illustrated in the scenarios and supported by the work of [Passmore and Tee \(2024\)](#), successful implementation would likely require careful consideration of the organizational context, existing coaching practices, and technological infrastructure. This aligns with [Hutchins' \(1995\)](#) distributed cognition theory, where cognitive processes are understood to be distributed across human and technological agents. Organizations might need to be prepared to invest in both technological systems and human capability development, reflecting [Clark's \(1998\)](#) stress on the importance of cognitive augmentation in human-technology partnerships.

The ethical governance domain highlights potential critical implications for practitioners regarding the ethical implementation of AI-enhanced coaching. As examined by [Terblanche et al. \(2022\)](#) and further elaborated by [Floridi \(2014\)](#), organizations would likely need to

establish robust governance frameworks to address concerns regarding data privacy, algorithmic bias, and the maintenance of human agency in coaching relationships. Drawing from [Bostrom's \(2014\)](#) work on AI development, these frameworks could be developed through collaborative efforts between human resources professionals, IT specialists, and ethical oversight committees to ensure comprehensive coverage of potential issues and challenges.

Within the collaborative learning domain, the transformation of the coach's role in AI-enhanced environments represents another significant potential implication. As illustrated in the scenarios and supported by the research of [De Haan and Nilsson \(2023\)](#), human coaches might need to develop new competencies to effectively integrate AI-generated insights into their practice. This aligns with [Bandura's \(1986\)](#) social cognitive theory, highlighting the importance of reciprocal learning between human agents and technological systems. The work of [Brynjolfsson and McAfee \(2014\)](#) further supports the potential need for coaches to develop capabilities in interpreting AI-generated data while maintaining the human element of coaching relationships.

Organizational readiness for AI-enhanced coaching could emerge as a critical factor within the adaptive evolution domain. The work of [Raisch and Krakowski \(2021\)](#) suggests that organizations might need to assess and develop their digital maturity before implementing AI-enhanced coaching initiatives, reflecting [Simondon's \(2017\)](#) perspectives on human-technological relationships. This could include evaluating technical infrastructure, data management capabilities, and organizational culture regarding technological adoption, as underscored in [Wall et al.'s \(2024\)](#) research on work-applied management practices.

The potential implications for coaching program design span all four domains of the theoretical framework. Organizations would likely need to develop integrated approaches that balance human and AI in coaching delivery, reflecting [Kauffman's \(1995\)](#) complex systems thinking. As demonstrated by [Wall \(2016\)](#), this could require careful consideration of when to utilize AI-enhanced coaching versus traditional human coaching, and how to effectively combine these approaches to maximize developmental outcomes. [Pickering's \(1995\)](#) work on human-technology interaction further supports the potential need for program design to account for different learning preferences and technological comfort levels.

The measurement and evaluation of AI-enhanced coaching effectiveness could present new challenges within the cognitive amplification and adaptive evolution domains. Traditional coaching evaluation methods might need to be adapted to account for the additional dimensions introduced by AI systems. As suggested by [Wang et al. \(2022\)](#) and supported by [Einola and Khoreva's \(2023\)](#) research on workplace ecosystems, organizations might need to develop new metrics and evaluation frameworks that capture both the quantitative and qualitative impacts of AI-enhanced coaching interventions.

Resource allocation and cost considerations could emerge as significant practical implications across all domains of the theoretical framework. While AI-enhanced coaching systems might offer scalability benefits, as discussed by [Licklider \(1960\)](#) in his seminal work on human-computer symbiosis, organizations would likely need to carefully consider the initial investment requirements and ongoing operational costs. This reflects [Engelbart's \(1962\)](#) vision of augmenting human intellect through technological systems while maintaining focus on practical implementation challenges.

The potential implications for coaching supervision and quality assurance particularly relate to the ethical governance and adaptive evolution domains. As coaching practices evolve to incorporate AI systems, new approaches to supervision might need to be developed, reflecting the complex adaptive systems thinking of [Kauffman \(1995\)](#). Organizations could need to develop new frameworks for monitoring and evaluating the quality of AI-enhanced coaching interventions while ensuring alignment with organizational objectives and values, as pointed out in recent work by [Wall et al. \(2024\)](#) on work-applied management practices.

These potential practical implications stress the need for a systematic and well-planned approach to the implementation of AI-enhanced coaching initiatives, guided by all four

domains of the theoretical framework. Organizations would likely need to consider multiple factors including technological infrastructure, human capability development, ethical considerations, and evaluation frameworks to ensure successful integration of AI-enhanced coaching practices into their organizational development strategies. Future empirical research would be necessary to validate these theoretical implications and develop more specific guidance for practitioners implementing AI-enhanced coaching initiatives in diverse organizational contexts.

### Implications for theory

The integration of AI in coaching practices necessitates reconsideration of existing theoretical frameworks in organizational development and learning. [Graßmann and Schermuly \(2021\)](#) suggest implications for coaching effectiveness theories, potentially requiring expansion to account for AI-enhanced interventions, with distributed cognition offering a valuable lens for understanding processes across human and technological agents. [Sposato's \(2024a, b\)](#) work indicates that AI might necessitate reconceptualizing leadership development, potentially leading to new theoretical models integrating technological and human elements in development processes. [ElSayary \(2024\)](#) highlights implications for organizational learning theory, suggesting that generative AI might fundamentally reshape the understanding of knowledge transfer and skill development in digitally transformed environments.

[Bauer and Grosse \(2024\)](#) propose frameworks for maintaining human-centric approaches in digital transformation, potentially enriching models of socio-technical change that account for human-AI interactions in organizational development. [Diller's \(2024\)](#) research suggests that new approaches to ethical decision-making in AI-enhanced coaching relationships may be needed. [Wall \(2016\)](#) and [Wall et al. \(2024\)](#) indicate potential new perspectives on how technological augmentation affects management practices. [Terblanche et al. \(2022\)](#) and [Terblanche \(2020, 2024\)](#) suggest implications for conceptualizing coaching as a developmental process, potentially leading to models accounting for technological augmentation in improving outcomes. [Kauffman's \(1995\)](#) complex systems perspective could provide insights into how AI-enhanced coaching systems evolve over time. These theoretical implications suggest that AI integration might significantly advance our understanding of organizational development, leadership development, and coaching effectiveness, with future development benefiting from empirical research examining how these propositions manifest in practice.

### Future research avenues

The integration of AI-enhanced coaching into organizational development opens several key research directions. Empirical validation through longitudinal studies examining how the four framework domains manifest in actual implementations is essential, using mixed-method approaches as suggested by [Terblanche et al. \(2022\)](#). Research should track long-term effects on leadership development by comparing AI-enhanced coaching participants with those receiving traditional interventions, aligning with [Wang et al.'s \(2022\)](#) emphasis on longitudinal assessment. Additionally, studies should investigate how cultural factors influence implementation outcomes, building on [Einola and Khoreva's \(2023\)](#) work on contextual factors in human-AI workplace interactions.

Ethical implications require the development of comprehensive frameworks addressing data privacy, algorithmic bias, and human agency preservation, extending [Diller's \(2024\)](#) considerations in digital coaching. Research should examine collaborative dynamics between human coaches and AI systems, identifying factors facilitating effective collaboration and building upon [Graßmann and Schermuly's \(2021\)](#) theoretical foundations. Future studies should explore sector-specific applications in healthcare, education, and technology, as conceptualized by [Passmore and Tee \(2024\)](#), while developing robust evaluation

methodologies capturing unique dimensions of AI-enhanced coaching outcomes, following [Raisch and Krakowski's \(2021\)](#) perspectives. Finally, research should examine competencies required for coaches in AI-enhanced environments, extending [De Haan and Nilsson's \(2023\)](#) work on coaching evolution. These research avenues collectively advance the understanding of AI-enhanced coaching, contributing to both theoretical knowledge and practical applications in digitally transformed environments.

### Conclusion

The integration of AI-enhanced coaching into organizational development represents a significant evolution in work-applied management practices. The theoretical framework developed in this article, encompassing the cognitive amplification, collaborative learning, ethical governance, and adaptive evolution domains, provides a comprehensive foundation for understanding the complex interactions between human coaches, AI systems, and organizational contexts. Through examination of hypothetical case studies spanning the technology, healthcare, and education sectors, this research demonstrates the practical applicability of the framework across diverse organizational settings while highlighting the importance of maintaining human agency and ethical considerations. The implications for practice point to the need for comprehensive integration strategies that balance technological capabilities with human expertise, while from a theoretical perspective, this research contributes to the evolving understanding of how digital technologies are reshaping coaching practices by integrating distributed cognition theory, complex systems thinking, and social cognitive theory. As digital transformation continues to reshape organizational landscapes, this framework offers valuable guidance for researchers and practitioners navigating the integration of AI technologies in coaching practices, with future research directions focusing on empirical validation, examination of long-term impacts, exploration of contextual variations, and development of specialized approaches for different organizational sectors.

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