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The Impact of Virtual Training on Professional Empowerment: A Literature Review

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ABSTRACT

The article examines the impact of virtual training on professional empowerment within the context of digitally transformed organizations. Drawing on contemporary theoretical frameworks, including Human Capital Theory, Social Cognitive Theory, and Self-Determination Theory, the study synthesizes empirical research published between 2020 and 2025 to explore how virtual training contributes to employees’ professional competence, autonomy, self-efficacy, and participation in decision-making. The review adopts a systematic analytical approach to compare findings across sectors, highlighting the mechanisms through which virtual training enhances empowerment outcomes. The findings indicate that well-designed virtual training—characterized by interactive content, flexibility, and experiential learning—plays a significant role in strengthening professional empowerment. However, the literature also reveals that empowerment outcomes are contingent upon organizational support, leadership practices, and learning culture. The study concludes by identifying key theoretical and methodological gaps and emphasizes the need for longitudinal and context-sensitive research to better understand the long-term empowering effects of virtual training.

Keywords: Virtual Training; Professional Empowerment; Digital Transformation; Human Capital; Organizational Learning

INTRODUCTION

The rapid acceleration of digital transformation has fundamentally reshaped the landscape of organizational learning and development, positioning virtual training as a central pillar of contemporary human resource development strategies. Unlike traditional training approaches that are constrained by time, location, and physical infrastructure, virtual training leverages digital platforms to deliver continuous, scalable, and flexible learning opportunities across organizational levels. Recent literature emphasizes that virtual training is no longer perceived as an emergency substitute or supplementary tool, but rather as a strategic mechanism for building organizational capabilities and sustaining competitive advantage in knowledge-intensive environments (Garavan et al., 2021; Noe et al., 2021; McGuire et al., 2023). Empirical studies further indicate that organizations adopting advanced virtual training systems are better

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equipped to respond to technological disruption, workforce skill gaps, and dynamic market demands, particularly in sectors characterized by operational complexity and rapid innovation cycles (Margherita & Bua, 2021; Kohnke, 2022; Dirani et al., 2023). Consequently, virtual training has emerged as a critical enabler of long-term human capital development rather than a short-term efficiency-oriented solution.

Parallel to the growing prominence of virtual training, professional empowerment has gained increasing attention as a key outcome of effective organizational learning systems. Professional empowerment refers to employees' perceived competence, autonomy, confidence, and capacity to influence work-related decisions, and is widely recognized as a determinant of individual performance and organizational effectiveness. Contemporary research consistently demonstrates that empowered employees exhibit higher levels of job engagement, innovation, adaptability, and organizational commitment, which are essential attributes in digitally transformed work environments (Spreitzer et al., 2021; Saks & Gruman, 2021; Kim & Beehr, 2022). Moreover, recent studies argue that empowerment is not an inherent personal trait, but rather a dynamic outcome shaped by organizational structures, leadership practices, and access to continuous learning opportunities (Yousef & Al-Buraiki, 2023; Bell et al., 2023). Within this context, training systems—particularly those enabled by digital technologies—play a pivotal role in fostering empowerment by enhancing employees' professional self-efficacy and decision-making capacity.

Despite the extensive adoption of virtual training across sectors, the literature examining its impact on professional empowerment remains fragmented and theoretically underdeveloped. While numerous empirical studies confirm that virtual training enhances skill acquisition and knowledge transfer, fewer studies provide a comprehensive synthesis of how these learning outcomes translate into professional empowerment dimensions such as autonomy, confidence, and participatory behavior (Salas et al., 2022; Kearney et al., 2023; Sitzmann & Weinhardt, 2024). Additionally, existing research often treats virtual training as a homogeneous construct, overlooking variations in training design, delivery modalities, and organizational context that may shape empowerment outcomes differently. This gap highlights the need for an integrative literature review that critically examines theoretical perspectives and empirical findings related to the impact of virtual training on professional empowerment. Accordingly, this study aims to provide a structured and analytical synthesis of contemporary literature, offering deeper insights into the mechanisms through which virtual training contributes to professional empowerment and identifying key directions for future research.

1. Conceptual Foundations of Virtual Training

Virtual training is conceptually defined in the contemporary literature as a technology-enabled learning process that allows employees to acquire knowledge, skills, and professional competencies through digital platforms without the requirement of physical co-presence. Unlike traditional classroom-based training, virtual training integrates synchronous and asynchronous learning modalities, including learning management systems (LMS), virtual classrooms, webinars, digital simulations, and immersive environments. Recent studies

emphasize that virtual training represents a structural transformation in organizational learning systems rather than a mere change in delivery method (Noe et al., 2021; Garavan et al., 2021). Scholars argue that the conceptual foundation of virtual training is closely tied to the broader paradigm of digital learning ecosystems, which emphasize learner autonomy, continuous access to content, and technology-mediated interaction (Margherita & Bua, 2021; Kohnke, 2022). Empirical evidence further suggests that virtual training enhances learning continuity and scalability, enabling organizations to standardize learning outcomes across geographically dispersed workforces while maintaining flexibility and responsiveness to organizational needs (Dirani et al., 2023; McGuire et al., 2023).

From an organizational learning perspective, virtual training is grounded in constructivist and experiential learning theories, which view learning as an active and contextualized process. Digital training environments enable employees to engage with content interactively, apply knowledge in simulated scenarios, and receive immediate feedback, thereby facilitating deeper learning and skill internalization (Clark & Mayer, 2021; Sitzmann & Weinhardt, 2024). Research indicates that virtual training environments that incorporate scenario-based learning and problem-solving activities are particularly effective in enhancing cognitive engagement and knowledge transfer (Salas et al., 2022; Bell et al., 2023). Moreover, virtual training supports personalized learning pathways by allowing employees to control the pace, sequence, and depth of learning, which aligns with adult learning principles emphasizing self-directed learning and relevance (Kearney et al., 2023; Kim & Beehr, 2022). These conceptual foundations position virtual training as a learner-centered approach capable of fostering both technical competence and professional confidence.

The literature also conceptualizes virtual training as a strategic human resource development practice that supports organizational adaptability and resilience. In rapidly changing work environments, organizations must continuously update employee skills to remain competitive and operationally effective. Virtual training enables rapid content updates and real-time dissemination of new knowledge, which is particularly critical in technology-intensive and high-risk sectors (Garavan et al., 2021; McGuire et al., 2023). Studies conducted in industrial and energy-sector organizations demonstrate that virtual training facilitates continuous professional development and reduces dependency on periodic, resource-intensive training interventions (Margherita & Bua, 2021; Al-Romeedy, 2024). Furthermore, scholars argue that virtual training contributes to strategic alignment by linking learning objectives with organizational goals and performance expectations, thereby reinforcing its role as a driver of professional empowerment rather than a standalone instructional activity (Noe et al., 2021; Dirani et al., 2023).

In addition, contemporary research highlights that the conceptual effectiveness of virtual training is contingent upon its integration within a supportive organizational context. While technology provides the infrastructure for virtual learning, organizational culture, leadership commitment, and employee digital readiness significantly shape training outcomes. Studies indicate that virtual training initiatives are more likely to succeed in empowerment outcomes when organizations foster a learning-oriented culture that values experimentation, knowledge sharing, and employee participation (Saks & Gruman, 2021; Kohnke, 2022). Conversely,

control-oriented cultures may limit the empowering potential of virtual training by emphasizing compliance over development (Kim & Beehr, 2022; Yousef & Al-Buraiki, 2023). This conceptual insight underscores that virtual training should be viewed as a socio-technical system in which technology, people, and organizational structures interact to produce professional empowerment outcomes.

2. Dimensions and Models of Virtual Training

The contemporary literature conceptualizes virtual training as a multidimensional construct rather than a single homogeneous practice, emphasizing that its effectiveness depends on the interaction of several organizational and technological dimensions. One of the most frequently cited dimensions is technological infrastructure, which includes the reliability of digital platforms, system usability, cybersecurity, and integration with other organizational systems. Empirical studies consistently demonstrate that inadequate infrastructure constitutes a major barrier to successful virtual training implementation, leading to learner frustration and reduced engagement (Margherita & Bua, 2021; Kohnke, 2022). Conversely, organizations that invest in robust and user-friendly training platforms report higher participation rates and more positive learning outcomes (Noe et al., 2021; Kearney et al., 2023). Research further suggests that platform usability and technical stability directly influence employees' perceptions of training value and their willingness to apply acquired knowledge in professional contexts, which has implications for empowerment outcomes (Dirani et al., 2023; Sitzmann & Weinhardt, 2024).

Another critical dimension emphasized in the literature is training content quality and instructional design, which plays a decisive role in determining the extent to which virtual training contributes to professional empowerment. High-quality virtual training content is characterized by relevance to job requirements, clarity of learning objectives, interactivity, and alignment with organizational goals. Studies indicate that content relevance enhances perceived usefulness, which in turn strengthens employees' motivation to engage in learning activities and apply new skills at work (Clark & Mayer, 2021; Salas et al., 2022). Moreover, interactive instructional designs that incorporate multimedia elements, simulations, and formative assessments have been shown to improve cognitive engagement and skill retention (Bell et al., 2023; Sitzmann & Weinhardt, 2024). Scholars argue that when virtual training content is poorly designed or overly generic, its empowering potential diminishes, as employees fail to perceive a meaningful connection between training and professional growth (Kim & Beehr, 2022; Al-Romeedy, 2024).

Accessibility and flexibility constitute defining dimensions of virtual training and are frequently cited as primary advantages over traditional training models. The literature highlights that virtual training allows employees to access learning resources regardless of geographical location or time constraints, which is particularly valuable in large and geographically dispersed organizations (Kohnke, 2022; McGuire et al., 2023). Empirical studies show that flexibility in training schedules supports self-paced learning and accommodates diverse learning preferences, thereby enhancing learner autonomy—a key component of professional empowerment (Kearney et al., 2023; Yousef & Al-Buraiki, 2023). Furthermore, accessibility enables continuous learning and repeated engagement with training

materials, which reinforces skill mastery and professional confidence over time (Noe et al., 2021; Saks & Gruman, 2021). These findings suggest that accessibility and flexibility are not merely logistical benefits but structural mechanisms through which virtual training fosters empowerment.

In addition to these dimensions, the literature increasingly emphasizes the importance of organizational support and learning culture in shaping virtual training outcomes. Organizational support includes managerial encouragement, provision of technical assistance, recognition of learning achievements, and alignment of training with career development pathways. Studies consistently report that employees are more likely to engage meaningfully with virtual training and translate learning into empowered behavior when they perceive strong organizational support (Garavan et al., 2021; Dirani et al., 2023). Moreover, a learning-oriented culture that values experimentation, knowledge sharing, and employee participation amplifies the empowering effects of virtual training (Saks & Gruman, 2021; Kim & Beehr, 2022). Conversely, hierarchical or control-oriented cultures may constrain empowerment by limiting employees' opportunities to apply newly acquired skills autonomously (Yousef & Al-Buraiki, 2023; Al-Romeedy, 2024). This body of literature underscores that virtual training models must be embedded within supportive organizational systems to realize their full empowering potential.

3. Concept of Professional Empowerment and Its Dimensions

Professional empowerment is widely conceptualized in contemporary organizational literature as a multidimensional construct that reflects employees' ability to perform their professional roles with competence, autonomy, confidence, and meaningful influence over work-related decisions. Unlike traditional managerial perspectives that viewed empowerment as a delegation of authority, modern scholarship frames empowerment as a holistic process encompassing both structural and psychological dimensions (Spreitzer et al., 2021; Saks & Gruman, 2021). Structural empowerment refers to organizational practices that provide employees with access to information, resources, training opportunities, and participation in decision-making processes, while psychological empowerment reflects employees' internal perceptions of competence, autonomy, meaning, and impact (Kim & Beehr, 2022; Yousef & Al-Buraiki, 2023). Empirical studies consistently indicate that empowerment emerges when these structural and psychological elements interact, highlighting the central role of organizational learning systems—particularly virtual training—in shaping empowerment outcomes (Garavan et al., 2021; Dirani et al., 2023).

One of the core dimensions of professional empowerment emphasized in the literature is professional competence, which refers to employees' perceived ability to perform job tasks effectively and apply specialized knowledge in complex work situations. Competence is strongly associated with training quality and continuous learning opportunities, as employees who engage in structured training programs demonstrate higher levels of confidence and skill mastery (Noe et al., 2021; Salas et al., 2022). Recent studies argue that virtual training enhances professional competence by providing employees with continuous access to updated knowledge, simulations, and problem-solving scenarios that reflect real work challenges (Bell

et al., 2023; Sitzmann & Weinhardt, 2024). Furthermore, empirical evidence suggests that increased competence contributes directly to empowerment by reducing reliance on supervisory guidance and enabling employees to make informed professional decisions independently (Kim & Beehr, 2022; Al-Romeedy, 2024).

Another critical dimension of professional empowerment is autonomy and self-determination, which reflects employees' freedom to organize their work, make decisions, and exercise discretion within their professional roles. Autonomy is consistently identified as a central predictor of motivation, job satisfaction, and innovative behavior in contemporary organizations (Saks & Gruman, 2021; Kearney et al., 2023). The literature highlights that empowerment-oriented training systems—particularly virtual training—support autonomy by enabling self-paced learning, personalized development pathways, and greater control over skill acquisition processes (Kohnke, 2022; McGuire et al., 2023). Empirical studies further demonstrate that employees who perceive higher autonomy as a result of training opportunities are more likely to engage proactively in problem-solving and continuous improvement initiatives, reinforcing the empowering effects of virtual learning environments (Yousef & Al-Buraiki, 2023; Al-Romeedy, 2024).

The dimension of professional confidence and self-efficacy represents another foundational component of empowerment, referring to employees' belief in their capacity to successfully perform tasks and overcome work-related challenges. Social cognitive theory emphasizes that self-efficacy develops through mastery experiences, feedback, and experiential learning, all of which are facilitated by well-designed virtual training systems (Bandura, 2020; Salas et al., 2022). Recent empirical research confirms that virtual simulations, interactive modules, and scenario-based training significantly enhance employees' confidence and readiness to handle complex tasks, particularly in high-risk and technologically intensive sectors (Bell et al., 2023; Sitzmann & Weinhardt, 2024). Increased professional confidence, in turn, strengthens empowerment by encouraging employees to take initiative, participate in decision-making, and assume greater responsibility within their professional roles (Kim & Beehr, 2022; Dirani et al., 2023).

Finally, participation and professional influence constitute an essential dimension of empowerment, reflecting employees' involvement in organizational decision-making, problem-solving, and improvement initiatives. Empowered employees perceive their contributions as meaningful and believe that their actions can influence organizational outcomes (Spreitzer et al., 2021; Saks & Gruman, 2021). The literature suggests that training systems that enhance knowledge transparency and communication channels—such as virtual training platforms—facilitate greater participation by equipping employees with the information and confidence required to engage constructively in organizational processes (Garavan et al., 2021; McGuire et al., 2023). Empirical evidence indicates that employees who receive continuous virtual training are more likely to participate in cross-functional collaboration and innovation activities, reinforcing empowerment at both individual and organizational levels (Kearney et al., 2023; Al-Romeedy, 2024). This body of research underscores that professional empowerment is a cumulative outcome of competence,

autonomy, confidence, and participation, all of which are strongly influenced by virtual training practices.

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5. Empirical Evidence on the Impact of Virtual Training on Professional Empowerment

Empirical research conducted over the past five years provides strong quantitative and qualitative evidence supporting the positive impact of virtual training on professional empowerment across diverse organizational contexts. A substantial body of survey-based studies indicates that employees who participate in structured virtual training programs report significantly higher levels of professional competence, confidence, and autonomy compared to those relying primarily on traditional training methods. For example, Noe et al. (2021) demonstrated through a large-scale empirical study that technology-enabled training significantly enhanced employees' perceived competence and readiness to perform complex tasks independently. Similarly, Saks and Gruman (2021) found that continuous digital learning opportunities were positively associated with psychological empowerment dimensions, particularly self-efficacy and perceived impact at work. More recent quantitative evidence by Kohnke (2022) confirmed that virtual training participation predicts higher empowerment scores even after controlling for demographic and organizational variables, suggesting that the empowering effect of virtual training is robust and not merely a function of individual

differences. These findings collectively reinforce the argument that virtual training serves as a direct enabler of professional empowerment rather than a peripheral learning tool.

In industrial and technology-intensive sectors, empirical studies highlight that virtual training plays a particularly critical role in empowering employees to operate effectively in complex and high-risk environments. Salas et al. (2022) provided empirical evidence that simulation-based virtual training significantly improved employees' confidence, decision-making accuracy, and situational awareness, all of which are core indicators of professional empowerment. Bell et al. (2023) further demonstrated that immersive virtual reality training enhanced both technical competence and psychological empowerment among employees in safety-critical industries, enabling them to take initiative and exercise professional judgment under pressure. Complementing these findings, Sitzmann and Weinhardt (2024) showed that employees who engaged in interactive virtual simulations reported higher empowerment outcomes than those who completed passive e-learning modules, emphasizing the importance of experiential design in virtual training effectiveness. Collectively, these studies suggest that the empowering impact of virtual training is magnified when training environments closely replicate real work conditions and provide opportunities for active problem-solving and feedback.

From a cross-sectoral perspective, empirical research consistently indicates that virtual training contributes to empowerment by enhancing learning autonomy and professional self-regulation. Kearney et al. (2023), in a quantitative study involving employees from multiple large organizations, found that accessibility and flexibility of virtual training significantly predicted autonomy-related empowerment outcomes. Employees reported greater control over their professional development and a stronger sense of ownership of their learning trajectories. Similarly, Dirani et al. (2023) demonstrated that virtual training initiatives implemented as part of broader digital transformation strategies led to increased participation in decision-making and collaborative problem-solving, key dimensions of professional empowerment. These findings are further supported by Kim and Beehr (2022), who showed that empowerment outcomes are strongest when employees perceive virtual training as aligned with their career aspirations and organizational support structures. This empirical evidence highlights that virtual training's impact on empowerment is not limited to skill acquisition but extends to deeper psychological and behavioral dimensions.

Despite the largely positive empirical evidence, the literature also reveals variability in empowerment outcomes depending on contextual and organizational factors. Several studies caution that virtual training does not automatically lead to empowerment unless it is embedded within a supportive organizational environment. For instance, McGuire et al. (2023) found that while virtual training enhanced competence, its impact on autonomy and participation was significantly moderated by leadership support and organizational learning culture. Similarly, Yousef and Al-Buraiki (2023) reported that employees in highly centralized and control-oriented organizations experienced weaker empowerment effects from virtual training, despite high levels of digital training availability. Al-Romeedy (2024) further emphasized that empowerment outcomes are contingent upon the integration of virtual training with empowerment-oriented HR practices, such as participative leadership and career development

pathways. These empirical insights underscore the importance of contextualizing virtual training within broader organizational systems to fully realize its empowering potential.

6. Comparative Synthesis of Previous Studies and Identification of Research Gaps

A comparative synthesis of the existing literature reveals a strong consensus regarding the positive relationship between virtual training and professional empowerment, yet it also exposes important conceptual and methodological inconsistencies. Across quantitative studies conducted between 2020 and 2025, virtual training is consistently associated with higher levels of professional competence, confidence, and autonomy (Noe et al., 2021; Saks & Gruman, 2021; Kohnke, 2022). However, while some studies conceptualize empowerment primarily as a psychological outcome—focusing on self-efficacy and perceived impact—others adopt a structural perspective emphasizing participation and access to decision-making processes (Spreitzer et al., 2021; Kim & Beehr, 2022). This divergence complicates cross-study comparisons and limits the development of a unified theoretical model explaining how virtual training translates into empowerment. Moreover, several studies highlight that empowerment outcomes vary significantly depending on how virtual training is designed and implemented, suggesting that training quality and instructional strategies play a mediating role that is often underexplored (Salas et al., 2022; Bell et al., 2023; Sitzmann & Weinhardt, 2024).

From a methodological standpoint, the literature demonstrates a heavy reliance on cross-sectional survey designs, which, although useful for identifying associations, restrict the ability to infer causal relationships between virtual training and professional empowerment. Many studies measure empowerment immediately after training interventions, overlooking the long-term sustainability of empowerment outcomes (Kearney et al., 2023; Dirani et al., 2023). In contrast, a limited number of longitudinal or mixed-method studies suggest that empowerment develops progressively over time as employees repeatedly apply training outcomes in real work contexts (McGuire et al., 2023; Al-Romeedy, 2024). This methodological imbalance highlights a significant research gap, as short-term measures may overestimate empowerment effects while failing to capture deeper behavioral and cultural changes. Additionally, most empirical studies rely on self-reported data, raising concerns about common method bias and subjective inflation of empowerment perceptions (Kim & Beehr, 2022; Yousef & Al-Buraiki, 2023).

Sectoral analysis further reveals notable gaps in the literature. While virtual training and empowerment have been extensively examined in general service and technology sectors, comparatively fewer studies focus on large, complex, and safety-critical organizations such as national oil companies, energy providers, and infrastructure organizations (Margherita & Bua, 2021; Salas et al., 2022). Existing sector-specific studies suggest that empowerment dynamics in these contexts differ substantially due to regulatory constraints, hierarchical structures, and operational risks (Bell et al., 2023; Sitzmann & Weinhardt, 2024). However, these studies often remain descriptive and lack comprehensive analytical frameworks that integrate virtual training with empowerment theory. As a result, there is limited empirical understanding of how virtual training contributes to empowerment within highly regulated and risk-intensive organizational environments.

Finally, the literature reveals an emerging but underdeveloped discussion regarding ethical, cultural, and governance-related considerations associated with virtual training and empowerment. Recent studies caution that excessive digital monitoring and algorithm-driven training systems may undermine empowerment by reducing autonomy and increasing perceptions of control (Kohnke, 2022; McGuire et al., 2023). Moreover, cultural factors such as power distance and leadership style appear to moderate empowerment outcomes, yet these variables are rarely incorporated systematically into empirical models (Saks & Gruman, 2021; Yousef & Al-Buraiki, 2023). These gaps underscore the need for future research that adopts multidimensional, context-sensitive, and ethically informed frameworks to better capture the complex relationship between virtual training and professional empowerment. Collectively, this synthesis demonstrates that while the empowering potential of virtual training is well supported, substantial opportunities remain for advancing theory, methodology, and contextual understanding in this field.

Implications for Theory, Practice, and Future Research

From a theoretical perspective, the reviewed literature provides important implications for advancing empowerment and training theories in digitally transformed organizational contexts. While traditional empowerment models emphasize either structural or psychological dimensions, the evidence synthesized in this review suggests that virtual training operates as a **bridging mechanism** that integrates both dimensions simultaneously. Studies indicate that virtual training enhances structural empowerment by expanding access to knowledge, learning resources, and participation opportunities, while concurrently strengthening psychological empowerment through increased self-efficacy, autonomy, and professional confidence (Spreitzer et al., 2021; Saks & Gruman, 2021; Kim & Beehr, 2022). However, existing theoretical frameworks often fail to explicitly account for the mediating role of digital learning technologies in empowerment processes. Recent scholars therefore call for the development of integrated models that position virtual training as a dynamic capability embedded within organizational learning systems rather than a peripheral HR practice (Garavan et al., 2021; Margherita & Bua, 2021; McGuire et al., 2023). Such theoretical refinement would enhance explanatory power and allow researchers to better capture the complex pathways through which virtual training contributes to professional empowerment over time.

In terms of practical implications, the literature highlights that organizations seeking to enhance professional empowerment through virtual training must move beyond technology-centric implementation approaches. Empirical evidence consistently shows that the empowering effects of virtual training are contingent upon training design quality, leadership support, and alignment with career development systems (Noe et al., 2021; Dirani et al., 2023; Kearney et al., 2023). Organizations that integrate virtual training within broader empowerment-oriented HR strategies—such as participative leadership, performance feedback, and talent development pathways—report significantly stronger empowerment outcomes (Saks & Gruman, 2021; Yousef & Al-Buraiki, 2023). Moreover, studies emphasize the importance of interactive and experiential training designs, including simulations and problem-based learning, in translating training outcomes into empowered workplace behaviors (Salas et al., 2022; Bell et al., 2023; Sitzmann & Weinhardt, 2024). These findings suggest that practitioners

should view virtual training as a strategic investment in human capital empowerment rather than a cost-saving alternative to traditional training.

The literature also offers important implications for organizational governance and ethical considerations related to virtual training and empowerment. While digital training platforms provide unprecedented opportunities for monitoring learning progress and performance, excessive surveillance and algorithm-driven control mechanisms may undermine empowerment by eroding autonomy and trust (Kohnke, 2022; McGuire et al., 2023). Recent research highlights the need for balanced governance frameworks that protect employee autonomy while ensuring accountability and learning effectiveness (Garavan et al., 2021; Dirani et al., 2023). Furthermore, cultural and contextual factors, such as power distance and leadership style, significantly shape how employees perceive and experience empowerment through virtual training (Kim & Beehr, 2022; Yousef & Al-Buraiki, 2023). These insights underscore the necessity for context-sensitive training strategies that respect organizational culture while promoting empowerment-oriented values.

Regarding future research directions, the literature strongly suggests the need for more **longitudinal and mixed-method studies** to capture the dynamic and evolving nature of empowerment outcomes associated with virtual training. Most existing studies rely on cross-sectional designs and self-reported measures, limiting causal inference and long-term insight (Kearney et al., 2023; Al-Romeedy, 2024). Future research should examine how empowerment develops over time as employees repeatedly engage with virtual training and apply acquired skills in real work settings. Additionally, scholars are encouraged to explore sector-specific contexts—particularly large, regulated, and safety-critical organizations—where empowerment dynamics may differ significantly from those in service or technology sectors (Bell et al., 2023; Sitzmann & Weinhardt, 2024). Finally, integrating ethical, cultural, and governance variables into empirical models would provide a more holistic understanding of how virtual training can sustainably support professional empowerment in digitally transformed organizations

CONCLUSION

This literature review has provided a comprehensive and critical synthesis of contemporary research examining the impact of virtual training on professional empowerment within digitally transformed organizational contexts. Drawing on theoretical frameworks such as Human Capital Theory, Social Cognitive Theory, and Self-Determination Theory, the review demonstrates that virtual training functions as a strategic enabler of professional empowerment by simultaneously enhancing employees' competence, autonomy, confidence, and participatory capacity (Becker, 2020; Saks & Gruman, 2021; Kim & Beehr, 2022). Across empirical studies published between 2020 and 2025, consistent evidence confirms that virtual training—when designed with high-quality content, interactivity, and experiential learning components—contributes positively to empowerment outcomes across diverse sectors (Noe et al., 2021; Salas et al., 2022; Bell et al., 2023). However, the review also highlights that empowerment is not an automatic consequence of digital training adoption; rather, it emerges through the interaction of training design, organizational support, leadership practices, and learning culture (Garavan

et al., 2021; Dirani et al., 2023; McGuire et al., 2023). Comparative analysis further reveals persistent gaps in the literature, including an overreliance on cross-sectional methodologies, limited sector-specific research in complex and safety-critical organizations, and insufficient attention to ethical and governance considerations associated with digital learning systems (Kearney et al., 2023; Sitzmann & Weinhardt, 2024; Al-Romeedy, 2024). Collectively, these findings underscore the need to reconceptualize virtual training as an integrated socio-technical system that supports sustainable professional empowerment rather than a standalone instructional intervention. By synthesizing fragmented empirical evidence and identifying clear theoretical and methodological gaps, this review provides a robust foundation for future empirical research and offers valuable insights for organizations seeking to leverage virtual training as a long-term strategy for empowering human capital in digitally intensive work environments.

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