

AN INTEGRATED CONCEPTUAL FRAMEWORK OF INDIVIDUAL AND CONTEXTUAL FACTORS INFLUENCING TRAINING EFFECTIVENESS

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Abstract: This study proposes an integrated conceptual framework that integrates individual and contextual variables to explain training effectiveness. It addresses the gap in prior studies by considering learner characteristics and environmental factors together rather than analysing them in isolation. The framework is theoretically grounded in Kirkpatrick's Four-Level Evaluation Model and Bandura's Social Cognitive Theory, and examines how individual-level factors—motivation to learn, self-efficacy, and learning readiness—interact with contextual factors, including training design and delivery, learning climate, follow-up and reinforcement, and work environment and transfer climate. A key feature is the inclusion of job role complexity as a moderating variable, and the study proposes nine theoretical propositions that outline the relationships between constructs. The framework suggests that training effectiveness—defined through learning outcomes, trainee satisfaction, and performance improvement—may be enhanced when individual readiness aligns with contextual support, while the inclusion of job role complexity explains variations in the impact of training across different roles. The study contributes to the literature through its multidisciplinary integration of individual and contextual variables and the inclusion of job role complexity, proposing a unified model for future empirical validation. The model provides actionable insights for corporate leaders and training designers, emphasizing learner assessment, adaptive instructional strategies, and ongoing post-training support.

IndexTerms: training effectiveness; motivation to learn; self-efficacy; learning readiness; training design; job role complexity

I. INTRODUCTION

In a progressively knowledge-oriented global economy, the effectiveness of training programs has emerged as a primary concern for firms aiming to cultivate a competitive workforce. Training and development programs aim to improve employee performance, stimulate creativity, and augment organizational adaptability [19]. Even though learning and development expenditures are expected to be in the hundreds of billions globally each year, many firms still have trouble seeing measurable results from their training initiatives [8]. This worry has sparked an increasing interest in figuring out what exactly makes training effective, which is frequently described in terms of job performance, behavioural change, learning acquisition, and organizational impact [11].

The successful outcome of training is not determined exclusively by the program's quality but is considerably influenced by individual and environmental factors. Characteristics at the individual level, including trainee motivation, self-efficacy, learning orientation, previous knowledge, and personality traits, are often linked to the effectiveness of employee engagement in and benefits derived from training [18]. Simultaneously, contextual factors—such as training design, trainer performance, organizational support, learning climate, and the transfer environment—are equally crucial in determining the successful transfer and application of acquired skills in the workplace [7], [3]. However, these elements are frequently examined in isolation, and the interplay among individual and environmental variables remains underexplored. This study addresses this gap by proposing an integrated conceptual framework that analyses the interaction between individual and environmental elements in determining training effectiveness. Many current models are predominantly unidimensional, concentrating solely on individual attributes or contextual factors, failing to sufficiently elucidate their interaction [26]. Moreover, several models fail to account for current transformations in work and educational settings, including digital advancement, hybrid work arrangements, and shifting learner inclinations. This indicates a substantial research deficiency—the necessity for a contemporary and comprehensive framework that encompasses not just conventional training factors but also integrates developing features pertinent to the current learning climate [1].

Therefore, the objectives of this study are:

1. To identify and analyse critical individual factors—such as motivation, self-efficacy, and learning readiness—that affect training effectiveness.
2. To examine essential contextual and organizational factors—including training design and implementation, follow-up and reinforcement, work environment, and transfer climate—that influence training effectiveness.
3. To examine the moderating influence of Job Role Complexity on the relationship between these characteristics and training effectiveness, hence improving the framework's flexibility and usefulness across various workplace environments.
4. To formulate and provide an innovative conceptual framework that amalgamates individual and environmental elements, offering a thorough comprehension of how to optimize training effectiveness in contemporary organizational environments.

The theoretical underpinnings of future empirical studies and useful training and development decision-making will be provided by the suggested framework.

This study makes three key contributions to the training and development literature. First, it brings together individual and contextual factors into a single, integrated framework, helping to address the fragmented nature of earlier research. Second, it highlights the role of job role complexity as a moderating factor, offering a more nuanced and context-sensitive understanding of training outcomes. Third, it presents a practically oriented model that can help organizations design more effective and adaptable training interventions aligned with real workplace demands.

II. LITERATURE REVIEW

Training effectiveness is a multifaceted concept that refers to the extent to which training interventions fulfil their intended objectives at both individual and organizational levels. A key aspect is learning outcomes, which include knowledge, skills, and competencies gained by learners during and after training. Effective training is expected to produce cognitive and behavioural improvements, especially when aligned with learners' needs and job requirements [24]. Training outcomes are influenced by instructional design, learner motivation, and transfer support systems [11]. Consequently, learning outcomes serve as a fundamental indicator of training effectiveness.

Training satisfaction reflects participants' perceptions of the relevance, quality, and delivery of the training content, and is associated with higher engagement and motivation to apply learning in the workplace [1]. Performance improvement reflects the enduring effect of training on job performance and productivity, particularly when supported by managerial and organizational factors [8]. Together, these constitute the core indicators of training effectiveness.

Individual-level characteristics substantially affect training effectiveness by determining how trainees interact with and use new information and abilities. Motivation to learn is a vital factor in training success, as it influences effort and involvement of trainees, leading to improved learning outcomes and transfer [17], [14]. Self-efficacy, defined as the belief in one's ability to successfully perform training tasks, constitutes another crucial individual-level factor. Elevated self-efficacy correlates with enhanced task perseverance, confidence in utilizing new abilities, and overall training success [25], while learning readiness—shaped by prior knowledge and attitudes—supports deeper understanding and application [21]. Together, these factors play a critical role in improving training outcomes.

Training effectiveness is not determined solely by individual learner characteristics; it is also influenced by contextual and organizational factors. Well-organized training programs with explicit learning objectives, pertinent information, and interactive delivery methods—such as simulations, case studies, and blended learning—demonstrate a substantial improvement in learning outcomes and application [11], [25]. A learner-centric design enhances retention and matches training with occupational requirements. Furthermore, businesses that tailor training delivery to align with learner profiles and job responsibilities establish more robust connections between training and performance [5]. When training is aligned with organizational goals and delivered using engaging and practical methodologies, it is more likely to translate into behavioural change.

A crucial contextual aspect is the learning climate, encompassing company principles, peer influence, and leadership endorsement for learning [10]. An affirmative learning climate fosters receptiveness to information exchange, experimentation, and constructive criticism [15]. Follow-up and reinforcement techniques, including post-training coaching, feedback sessions, and refresher programs, are essential for closing the learning-to-performance gap [11]. The work environment and transfer climate, which include supervisor support, chances to apply acquired skills, and little resistance to change, directly influence training transfer [23], [6]. In the absence of an environment that fosters ongoing learning and encourages preferred behaviours, even the most meticulously crafted training programs may not provide enduring outcomes. Thus, contextual factors serve as a crucial facilitator—or impediment—of the training effectiveness cycle.

In recent years, scholars have increasingly acknowledged the significance of moderating variables in comprehending the heterogeneity of training results across diverse organizational contexts. One key moderator is Job Role Complexity (JRC)—the extent to which a position requires advanced cognitive processing, problem-solving, multitasking, and decision-making abilities. The proposed framework suggests that JRC may influence training effectiveness by shaping the cognitive demands associated with work. Recent meta-analytic evidence indicates that different forms of job complexity are associated with learning and other employee outcomes [13]. In positions marked by significant complexity, employees may require training that addresses advanced cognitive and adaptive demands. In contrast, employees in simpler tasks may require more organized or repetitive learning experiences to guarantee retention and transfer, resulting in diminished training effectiveness across various job types. The proposed framework suggests that JRC may influence the relationship between training initiatives and outcome, including learning results, trainee satisfaction, and performance enhancement [5]. In high-complexity positions, training focused on problem-solving and adaptable thinking increases satisfaction and motivation, since it aligns with the job's inherent demands. Nonetheless, when training programs are too general or misaligned with work requirements, they may reduce alignment between training content and job requirements among employees in cognitively intensive positions. Furthermore, in these environments, reinforcement mechanisms such as coaching and peer cooperation are crucial to guarantee that new learning is converted into performance. Incorporating job role complexity as a moderator enhances the knowledge of training effectiveness and gives practical insights for customizing treatments to various occupational contexts.

GAPS IN THE LITERATURE AND RATIONALE FOR THE PROPOSED FRAMEWORK

Although considerable research has been undertaken regarding training effectiveness, much of the current literature often analyses it in isolation, concentrating either on individual-level factors involving trainee characteristics (e.g., motivation, self-efficacy) or organizational-level elements like training design and support [1], [23], [3]. Nevertheless, few studies have concurrently included both individual and environmental factors into a cohesive framework, particularly with multidimensional training outcomes such as learning, satisfaction, and performance enhancement [4], [3]. Furthermore, current frameworks sometimes overlook the interaction impact of job-specific variables, such as the complexity of job roles, which can profoundly affect the degree to which training is assimilated and used in the workplace. This necessitates research that considers both internal learner characteristics and external organizational facilitators, together with the contextual impacts of the job environment.

This study proposes a conceptual framework that comprehensively examines the interaction among individual factors (motivation, self-efficacy, learning readiness), contextual and organizational factors (training design and delivery, learning climate, follow-up support, and transfer climate), and their collective influence on training outcomes. It distinctly incorporates job role complexity as a moderating variable, recognizing that the efficacy of training interventions may fluctuate based on the cognitive and behavioural requirements of a certain function. This integrated viewpoint corresponds with Kirkpatrick's evaluation model, which promotes multi-level outcome assessment, and Social Cognitive Theory, which emphasizes the interactive relationship between individual and environmental elements in learning. The proposed framework seeks to address theoretical and empirical gaps by providing a more refined comprehension of how training initiatives convert into quantifiable success across various job positions and organizational contexts.

III. THEORETICAL FRAMEWORKS SUPPORTING TRAINING EFFECTIVENESS

This study examines the multifaceted nature of training success through the lens of two established theoretical frameworks: Kirkpatrick's Four-Level Training Evaluation Model and Bandura's Social Cognitive Theory (SCT). These frameworks offer a thorough basis for analysing the impact of individual and environmental variables on training results, as well as the potential moderating effect of job role complexity on these interactions.

Kirkpatrick's model, initially created in 1959 and subsequently enhanced by Kirkpatrick and Kirkpatrick in 2006, is a widely recognized framework for assessing training programs. It delineates four levels—reaction, learning, behaviour, and results—that provide a theoretical basis for assessing the training outcomes considered in this study: trainee satisfaction, learning outcomes, and performance enhancement. The model posits that trainee satisfaction (reaction) establishes the groundwork for enhanced learning (knowledge and skill acquisition), which should subsequently result in behavioural change and ultimately yield quantifiable enhancements in performance for both individuals and organizations [16]. This study incorporates organizational components including training design, follow-up, and work atmosphere as contextual variables, consistent with the model's focus on organizational support in promoting behaviour change and attaining outcomes.

Complementing this is Bandura's [2] Social Cognitive Theory (SCT), which underscores the reciprocal interplay of personal characteristics, behaviours, and environmental effects in the learning process. This paradigm supports the incorporation of individual-level characteristics, including motivation to learn, self-efficacy, and learning readiness. SCT posits that learners possessing elevated self-efficacy are more inclined to establish ambitious objectives, endure challenges, and successfully apply training in the job. Motivation, influenced by intrinsic convictions and extrinsic validation, significantly impacts training results. Moreover, the reciprocal interaction between personal and environmental factors in SCT provides a theoretical basis for considering job role complexity as a potential moderating condition, indicating that the interaction among environmental demands and human capabilities may either facilitate or impede the efficacy of learning and transfer. In cognitively demanding professional responsibilities, the alignment between training demands, learner characteristics, and job requirements may be particularly important for effective learning and transfer. Collectively, these two frameworks provide contrasting perspectives: Kirkpatrick's model assesses the metrics to be evaluated post-training, whereas SCT elucidates the interplay between human and environmental factors that affect those results. This dual-theory framework strengthens the study's conceptual model and enriches the examination of how individual variations and job factors influence training effectiveness. Table 1 presents the conceptualization of key constructs.

Table 1. Conceptualization of key constructs

Construct	Definition	Dimensions / Indicators
Motivation to Learn	Effort and willingness to learn and apply new skills during training.	Goal orientation, perceived value, intrinsic motivation
Self-Efficacy	Belief in one's ability to successfully perform training tasks.	Confidence, persistence, effort regulation
Learning Readiness	Preparedness to engage in and benefit from training.	Prior knowledge, learning orientation, attitude
Training Design and Delivery	Structure, content, and methods used to facilitate training effectively	Interactivity, job relevance, feedback
Learning Climate	A supportive learning atmosphere that encourages learning and information exchange.	Learning support; information exchange; learning encouragement
Follow-up and Reinforcement	Support provided after training to sustain learning and application	Coaching, refresher training, feedback
Work Environment and Transfer Climate	Organizational conditions that influence the application of training on the job.	Peer support, supervisor support, opportunity to use skills
Learning Outcomes	The knowledge and skills acquired during training.	Cognitive, skill-based, and affective learning outcomes
Trainee Satisfaction	The extent to which trainees feel content with the training experience.	Content relevance, delivery quality, trainer effectiveness
Performance Improvement	Behavioural changes and increased efficiency or quality of work due to training.	Task performance, behavioural change

Job Role Complexity	Level of cognitive and task demands associated with job	Task variety, information processing, autonomy
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IV. PROPOSED CONCEPTUAL FRAMEWORK FOR TRAINING EFFECTIVENESS

Based on the above discussion and identified research gaps, the following conceptual framework is proposed.

This conceptual framework incorporates essential individual-level characteristics, environmental and organizational facilitators, and the moderating influence of job role complexity to elucidate discrepancies in training effectiveness. The approach is based on Kirkpatrick's Four-Level Model and Bandura's Social Cognitive Theory, providing a comprehensive view of training outcomes—learning, trainee satisfaction, and performance enhancement.

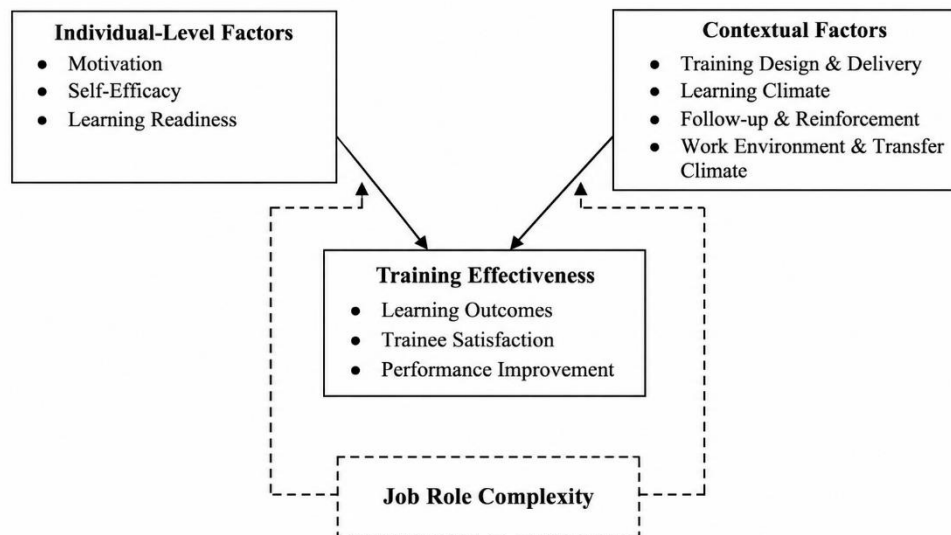


Figure 1. Conceptual framework for training effectiveness

The framework asserts that personal characteristics, including motivation to learn, self-efficacy, and learning readiness, affect the reception and internalization of training. Simultaneously, contextual elements including training design and delivery, learning climate, follow-up and reinforcement, and transfer climate can facilitate or hinder the application of acquired abilities. The intricacy of an individual's professional function is presented as a moderating variable, recognizing that employees in more intricate positions may react differently to training programs due to the cognitive and behavioural demands of their responsibilities.

The following provides a comprehensive elucidation of the interconnections among the constructs within the proposed framework:

Individual Factors → Training Outcomes

Social Cognitive Theory [2] posits that individual ideas and motives directly affect learning behaviours and results. In our approach, the incentive to learn influences the extent of cognitive and emotional involvement that trainees provide to a program, thereby improving learning outcomes, satisfaction, and performance enhancement [17]. Likewise, self-efficacy promotes perseverance and the implementation of successful learning techniques; individuals with high self-efficacy express more confidence in utilizing new abilities, resulting in enhanced performance outcomes [25]. Learning readiness, defined as the congruence of prior knowledge, cognitive capacity, and psychological preparedness, also forecasts enhanced content processing and improved transfer, as learners with robust readiness can more readily assimilate new information into established mental frameworks [21].

Contextual Factors → Training Outcomes

Kirkpatrick's Four-Level Model [16] underscores that organizational support and training design significantly influence the conversion of learning into behavioural change and outcomes. The training design and delivery aspect of our approach, which includes explicit objectives, relevance, and interactive techniques, has demonstrated an enhancement in acquiring knowledge and satisfaction [11], [5]. An affirmative learning climate, marked by supportive leadership and collaborative peers, enhances engagement and the propensity to explore new abilities [9]. Follow-up and reinforcement methods, such as coaching and refresher sessions, are crucial for maintaining long-term improvements and ensuring that initial learning is effectively used in work performance. A supportive work environment and transfer climate, characterized by supervisors offering feedback and opportunity to implement training, directly boost performance improvement [23], [6].

Synergistic Effects of Individual and Contextual Factors

The notion of reciprocal determinism in Social Cognitive Theory posits that individual and environmental variables interact dynamically to influence behaviour [2]. In our approach, individual characteristics (e.g., motivation, self-efficacy) and contextual factors (e.g., supportive atmosphere, high-quality design) may influence training outcomes through complementary and potentially interactive mechanisms rather than independently. A highly motivated trainee will derive the greatest advantage from an engaging, well-structured program, whereas even the most meticulously constructed training may falter if learners lack readiness or confidence [1]. This synergy highlights the necessity for cohesive treatments that concurrently tackle individual preparedness and institutional backing to optimize learning, enjoyment, and performance.

Moderating Role of Job Role Complexity

Ultimately, job role complexity serves as a moderator, influencing the intensity of the links among our inputs (individual and contextual elements) and outputs. In cognitively demanding positions, employees may require training that prioritizes problem-

solving and adaptive learning. The relationship between job complexity and learning may vary according to the type and level of complexity involved [13]. In contrast, in simpler positions, overly sophisticated training may overwhelm trainees and reduce the alignment between training content and job requirements. By including job complexity as a moderator, the framework recognizes that identical training inputs may yield varying degrees of efficacy based on the cognitive and behavioural requirements of the position, thereby providing a more refined and practical model for practitioners.

Propositions of the Conceptual Framework

Proposition 1. The motivation to learn is positively associated with training effectiveness, as assessed by learning outcomes, trainee satisfaction, and performance enhancement.

Proposition 2. Self-efficacy is positively associated with training effectiveness; trainees possessing stronger confidence in their capacity to acquire and implement new abilities will attain superior learning outcomes, enhanced satisfaction, and increased performance improvements.

Proposition 3. Learning readiness is strongly associated with training effectiveness—trainees possessing substantial previous knowledge, cognitive preparedness, and a favourable attitude toward learning will achieve enhanced training outcomes.

Proposition 4. The design and implementation of training are positively associated with its success; programs including explicit objectives, pertinent information, and participatory methodologies will result in enhanced learning outcomes, satisfaction, and performance enhancement.

Proposition 5. The learning climate is strongly associated with training effectiveness; a supportive atmosphere that prioritizes learning and information exchange will improve learner engagement and the transfer of training.

Proposition 6. Follow-up and reinforcement are positively associated with training effectiveness; post-training coaching, feedback, and refresher activities will preserve and enhance learning, resulting in enhanced outcomes.

Proposition 7. The work environment and transfer climate positively influence training effectiveness; when managers promote application and offer chances to use new abilities, performance enhancements are optimized.

Proposition 8. The complexity of job roles positively influences the link between individual characteristics (motivation, self-efficacy, learning readiness) and training effectiveness; these interactions are more pronounced in positions with greater cognitive and behavioural demands.

Proposition 9. Job role complexity positively moderates the relationship between contextual factors (training design and delivery, learning climate, follow-up and reinforcement, and work environment and transfer climate) and training effectiveness; these relationships are expected to be stronger in more complex job roles.

These assertions provide a systematic approach for forthcoming empirical research intended to corroborate the conceptual framework. The assertions establish a robust theoretical framework for comprehending the variances in training effectiveness across diverse organizational contexts by elucidating the interplay between individual traits and contextual supports, as well as the influence of job role complexity on these interactions. Future research may evaluate these premises by quantitative or mixed-method techniques to improve the model's practical relevance and generalizability.

V.DISCUSSION

This study's comprehensive framework enhances the literature on training effectiveness by simultaneously analysing individual factors (motivation, self-efficacy, learning readiness) and contextual facilitators (training design and delivery, learning climate, follow-up and reinforcement, work environment and transfer climate), while incorporating job role complexity as a moderating condition. Previous research has predominantly focused on either personal or organizational variables [4], whereas our model illustrates their synergistic effects: for instance, AI-enabled adaptive learning may support learner outcomes when appropriately aligned with learner needs [27] and interactive, hybrid learning environments may support workplace learning when appropriate opportunities, resources, and leadership support are provided [22]. This framework integrates the explanatory perspective of Social Cognitive Theory [2] with the outcome-oriented perspective of Kirkpatrick's model [16] to examine learning outcomes, trainee satisfaction, and performance enhancement. The concept emphasizes the necessity for tailored, technology-enhanced training programs that correspond with learner preparedness and job requirements.

The framework may be useful across diverse organizational contexts, where changing skill demands and ongoing digital transformation require flexible and integrated approaches to training.

VI.PRACTICAL IMPLICATIONS

The proposed framework provides guidance for training professionals, HRD practitioners, and organisational decision-makers. Organizations should place greater emphasis on understanding individual learner characteristics—such as motivation, self-efficacy, and readiness to learn—before designing training programmes. This allows training to be better aligned with learner needs, improving engagement and overall effectiveness.

From a design perspective, organizations should upgrade training programmes beyond traditional methods by incorporating interactive, job-relevant, and technology-enabled approaches. For example, technology-enabled and hybrid training approaches can be used to support learning and transfer, particularly when training methods are aligned with learner and task requirements [15]. In addition, AI-enabled adaptive learning systems may be considered as a technology-supported approach for improving learner outcomes [27].

Most importantly, organizations should establish well-structured follow-up systems—including peer coaching, micro-learning refresher courses, and emotional intelligence workshops—to strengthen the transfer and retention of learning in the workplace [12]. Managers should also actively support the transfer process by creating opportunities for employees to apply new skills and by fostering a work environment that encourages continuous learning.

Finally, training should not be designed in isolation from job demands. Learning and Development teams should also assess job complexity in advance so that training content, depth and reinforcement strategies, are aligned with specific demands of different roles. This ensures that employees engaged in high-complexity jobs receive sufficient support to effectively apply newly acquired skills. Aligning training design with job complexity ensures that learning is both relevant and applicable, ultimately leading to stronger performance outcomes across different organizational contexts.

VII.CONCLUSION

This paper presents a detailed conceptual framework that combines individual-level determinants (motivation, self-efficacy, learning readiness) and contextual factors (training design and delivery, learning climate, follow-up and reinforcement, work environment and transfer climate) to elucidate variations in training effectiveness, defined as learning outcomes, trainee satisfaction, and performance enhancement. Based on Kirkpatrick's Four-Level Model and Bandura's Social Cognitive Theory, and enhanced by the incorporation of job role complexity as a moderating variable, the framework seeks to address identified gaps in the literature by illustrating the dynamic interaction between personal and organizational factors that influences training success. The nine propositions generated from this model provide a structured basis for empirical examination and highlight the contingent nature of training transfer across various occupational contexts. This study integrates existing assessment methodologies with modern insights into cognitive and environmental factors, enhancing theoretical comprehension of training effectiveness and establishing a foundation for future sophisticated research. The integrated view emphasizes that neither learner attributes nor organizational support is sufficient on its own; instead, it is their synergy—moderated by the complexity of the role—which may influence whether training efforts result in enduring performance improvements. In conclusion, this framework elucidates the complex factors influencing training results and offers a solid basis for researchers aiming to enhance and expand their investigation into the processes of effective workplace learning.

VIII. LIMITATIONS OF THE STUDY

This conceptual work, although presenting a theoretically based model of training effectiveness, is constrained by its absence of empirical validation. The postulated correlations and constructs require validation through quantitative or mixed-method research in various organizational contexts. The framework specifically focuses contextual elements on training design and delivery, learning climate, follow-up and reinforcement, and work environment and transfer climate, while excluding wider influences such as leadership, organizational culture, and technology. The proposed moderating effect of job role complexity does not account for additional factors such as generational disparities or psychological capital. These constraints create opportunities for additional enhancement and empirical research.

IX. FUTURE RESEARCH DIRECTIONS

To further this work, longitudinal, multi-country research should evaluate the concept utilizing structural equation modelling and multilevel analysis. Emotional intelligence, company culture, and digital preparedness may mediate individual characteristics and consequences. VR/AR and AI-driven platforms are widespread, therefore experimental investigations comparing them across task complexity would provide practical insights. Finally, cross-cultural comparisons may show how national settings affect learning climate and transfer processes, making the approach more applicable in global organisations [20].

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