Reskilling and Upskilling the Workforce for AI-Augmented Roles:
Strategies for a Human-Centric Digital Future

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ABSTRACT

The need for new skill sets has increased as Artificial Intelligence (AI) continues to transform the modern workplace, forcing businesses and academic institutions to reevaluate their workforce development plans. The pressing need for upskilling and reskilling in response to AI integration across industries is examined in this article. AI is rapidly enhancing human functions rather than taking their place, creating a hybrid model where cooperation between humans and AI is the norm. In addition to being digitally savvy, this change calls for a workforce that possesses critical thinking, adaptability, and creative problem-solving skills. The article will focus on the changing skill requirements brought about by the deployment of AI, emphasizing the major industries most impacted by the change. Additionally, it will examine effective frameworks and tactics used by progressive governments and companies to prepare their workforce for the future. Continuous learning ecosystems, micro-credentialing, and public-private collaborations that promote lifetime learning will be prioritized.

1. INTRODUCTION

The emergence of artificial intelligence (AI) is fundamentally transforming the fabric of contemporary societies, influencing modes of production, innovation, and organizational function. As AI technologies become deeply integrated across diverse industries, they are reshaping workforce dynamics by introducing both unprecedented prospects and considerable challenges. While AI systems are increasingly capable

DOI: 10.4018/406743

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of performing standardized, repetitive tasks, they are also catalyzing the creation of new occupational roles that require synergistic interaction between human labor and intelligent automation.

In this context, cultivating adaptable and future-ready talent becomes imperative. Two critical responses to this shift are reskilling—the process of preparing individuals for entirely different occupational functions—and upskilling, which involves enhancing current skill sets to align with evolving technological demands. These strategies are central to enabling the workforce to remain relevant in AI-influenced environments.

This chapter critically examines the approaches adopted by key stakeholders—namely policy-makers, industry leaders, and academic institutions—to meet the evolving demands of the AI era. It further evaluates the effectiveness of various capacity-building initiatives and emphasizes the importance of embedding ethical considerations into these transformations to promote inclusivity and maintain a human-centered approach to technological integration.

2. THE IMPACT OF AI ON THE WORKFORCE

The influence of artificial intelligence (AI) on employment is both transformative and multifaceted. On one hand, AI automates routine, rule-based tasks—leading to job displacement in industries such as manufacturing, logistics, and administrative services (Fan, 2025). On the other hand, it drives the creation of entirely new roles in domains like machine learning, AI ethics, and data science—positions that demand advanced problem-solving abilities, adaptability, and digital proficiency (Makela & Stephany, 2024).

Mullens and Shen (2025) introduce the concept of "skill bridges," which refer to transferable competencies that facilitate career shifts from declining roles to emerging ones. These typically include soft skills such as communication, collaboration, and basic digital literacy. However, the advantages of AI integration are not equally distributed. Workers in low-skilled positions and marginalized communities often face significant barriers, underscoring the need for targeted policies and interventions to address systemic inequities in access to reskilling opportunities.

3. STRATEGIC HRM FOUNDATIONS FOR RESKILLING IN THE AGE OF AI

The imperative to reskill and upskill the workforce in response to AI-driven disruption aligns closely with several foundational concepts in Human Resource Management (HRM). A strategic HRM perspective emphasizes the alignment of talent development with long-term organizational goals, positioning HR as a central driver of digital transformation (Wright & McMahan, 2011). Within this framework, reskilling is not a peripheral initiative but a strategic lever that enhances adaptability, competitiveness, and sustained performance.

Human capital theory reinforces this view, asserting that targeted investment in employee learning directly contributes to organizational innovation and economic productivity (Becker, 1993). These investments also support the talent management cycle by enabling internal mobility, fostering engagement, and ensuring leadership continuity through structured development pathways (Collings, Mellahi, & Cascio, 2017).

A critical dimension of HRM's evolving role is the promotion of equity and inclusion in access to learning opportunities. Reskilling initiatives grounded in diversity, equity, and inclusion (DEI) principles ensure that all

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