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Editorial

Welcome! The Summer/Fall 2026 Edition of The Phoenix Scholar takes up a question our own research has made urgent: how do we cultivate institutional trust at a moment when so many workers feel their footing slipping away? The 2025 Career Optimism Index® describes a workforce in a crisis of autonomy — burnout at a record-high 51%, with those who feel they lack control over their careers 56% more likely to burn out than those who do. Beneath the numbers lies a question of trust. Even as 86% of workers actively seek to grow their skills, 60% of employers still prefer to hire from outside rather than invest in the people they already have. That gap — between what workers are reaching for and what their institutions choose to see — is precisely the space this issue seeks to illuminate. Artificial intelligence complicates and quickens all of it: at once a source of the anxiety workers feel and, used well, a lever for the very autonomy and resilience they are seeking.

In light of this, the articles gathered here examine trust from many vantage points, offering theoretical frameworks, empirical findings, and practices leaders can act upon. Several contributions confront artificial intelligence directly — building institutional trust as organizations adopt new technologies, cultivating autonomy and engagement in AI-enabled workplaces, and weighing whether AI signals a workforce revolution or a disruption. Others turn to the human interior on which trust depends: career optimism, psychological capital, mindfulness, and resilience. Still others locate trust where it is most tested — in our schools and care settings — through studies of teacher retention and self-efficacy, inclusive early education, and trauma-informed practice. Two thoughtful book reviews round out the issue, each returning us to the grounded, relational nature of trusted leadership and learning.



I trust you will find here insights that are both intellectually rich and immediately useful — ways to close the distance between what our institutions intend and what their people actually experience.

In closing, I remain convinced that trust is not a policy but a posture. When people sense that their institutions regard them as whole human beings — not merely as functions to be optimized, whether by managers or by machines — they respond with the engagement, creativity, and commitment on which every worthy enterprise depends. That, in the end, is the work.

Sincerely,

Mark L. McCaslin

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Five Years of Insights from the Career Optimism Index: Shifting Sentiments and the Future of Work

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Introduction

Over the past five years, the Career Optimism Index (COI) has functioned as a longitudinal barometer of worker sentiment and employer alignment, capturing the dynamic sentiment of career confidence in the United States. Published annually by the University of Phoenix (UOPX), the Index documents shifting perceptions of career confidence across periods marked by pandemic recovery, labor market volatility, inflationary pressure, and accelerated technological transformation. Across these transitions, the COI reveals not merely fluctuations in optimism, but a deeper structural recalibration in how workers conceptualize security, growth, and institutional trust.

This study synthesizes findings from the 2021–2025 COI datasets to identify emergent patterns shaping career optimism across five domains: Job Security, Financial Security, Mental Health and Wellness, Career Trajectory, and Skill Development. Particular attention is given to the role of artificial intelligence (AI), which evolved from a perceived threat to employment stability into a mechanism for empowerment and productivity. Concurrently, rising burnout, stagnating internal mobility, and persistent employer–employee

perception gaps signal erosion in traditional retention paradigms. Collectively, these dynamics suggest a paradigmatic shift: career optimism is increasingly anchored in individual agency rather than organizational stewardship.

This longitudinal analysis is significant for workers, employers, and policymakers as it identifies the underlying drivers of workplace engagement and institutional trust. By integrating five years of national data, this analysis provides a theoretically informed synthesis of emergent trends shaping professional relationships, including career growth, mental health, and technological adaptation. These insights highlight a critical shift in which workers increasingly rely on self-direction and personal adaptability to navigate stagnant internal mobility and declining organizational investment (UOPX, 2024).

This analysis serves as a critical resource for understanding the shifting foundations of the future of work in the United States labor market. This paper first outlines the methodological framework, grounded in a six-phase thematic analysis, and then examines cross-year developments within the five COI pillars, as presented in the COIs. It concludes by advancing five dominant themes that collectively redefine the

foundations of career optimism in the contemporary labor market.

Workforce Context: Evolution of Workforce Sentiment (2021–2025)

The American workforce navigated a complex five-year journey characterized by pronounced structural volatility, shifting priorities, and economic stressors that have redefined the construct of career optimism. The initial phase of pandemic recovery (2021) was followed by the labor market realignment of the Great Resignation (2022), the emergence of a Free Agent Era (2023), and what the COI characterized as the Great Talent Stagnation (2024) (UOPX, 2021–2025). By 2025, the Index described a phase of AI Empowerment, reflecting growing integration of intelligent technologies into daily work practices (UOPX, 2025).

Within this evolving context, career optimism must be understood as a multi-dimensional construct rooted in resilience and personal potential, organized conceptually through the five inter-dependent pillars of Job Security, Financial Security, Mental Health and Wellness, Career Trajectory, Skill Development (UOPX, 2021). Together, these domains provide an analytic architecture for examining how confidence in the future of work is constructed, challenged, and reconstituted over time.

To examine patterns emerging across these pillars, a thematic analysis was applied to five years of national data to identify the most consistent drivers of workforce confidence. This five-year synthesis is significant because it reveals that optimism did not dissipate under pressure; rather, its locus shifted. As institutional reliability appeared increasingly uncertain, workers reoriented themselves toward self-directed resilience, skill acquisition, and technological fluency as primary mechanisms for sustaining confidence.

Methodology

This study employs a longitudinal qualitative synthesis grounded in Braun and Clarke's (2006) six-step thematic analysis. The objective was interpretive rather than purely descriptive: to identify cross-year patterns, inflection points, and structural relationships

within employee and employer perceptions of career optimism. This structure provides a coherent foundation for examining how optimism and related workforce dynamics have evolved across five years of data.

The analysis followed a structured six-step approach to ensure consistency and clarity throughout the integration. Each annual COI report (2021–2025) was systematically reviewed. During the familiarization phase, each COI report was reviewed to capture recurring ideas, key findings, and contextual factors. Initial coding was conducted to organize data within the five pillars (Job Security, Financial Security, Mental Health and Wellness, Career Trajectory, Skill Development), thereby providing a consistent basis for cross-year comparison. Themes were generated, reviewed, and refined to identify areas of alignment, variation, and emerging trends in employee and employer perspectives. During this phase, themes were also examined for semantic alignment to ensure related ideas were meaningfully grouped and consistently interpreted across years, allowing cross-pillar patterns in workforce sentiment to be clearly identified. Nine preliminary themes emerged; five were ultimately selected based on recurrence, explanatory power, and conceptual integration:

1. Optimism for Skill Development in Career Growth
2. Worker Resilience and Optimism
3. Burnout and Mental Health Challenges
4. Technology and AI Anxiety / Resilience
5. Employer–Employee Disconnect

This analysis prioritized rigor and trustworthiness to ensure credible and transparent findings. Each phase of review involved repeated comparison of codes and themes to confirm accuracy and alignment with the original COI data. Reflexive attention was maintained throughout the process to minimize bias. Peer verification and cross-checking of coded data strengthened data reliability and analytical consistency. This disciplined approach ensured interpretations were evidence-based and faithful to the dataset across all five years. Figure 1 illustrates the analytic structure guiding this study, beginning with the five-year Career Optimism Index dataset, organized through the five COI pillars, and culminating in the cross-pillar thematic insights identified through the analysis.

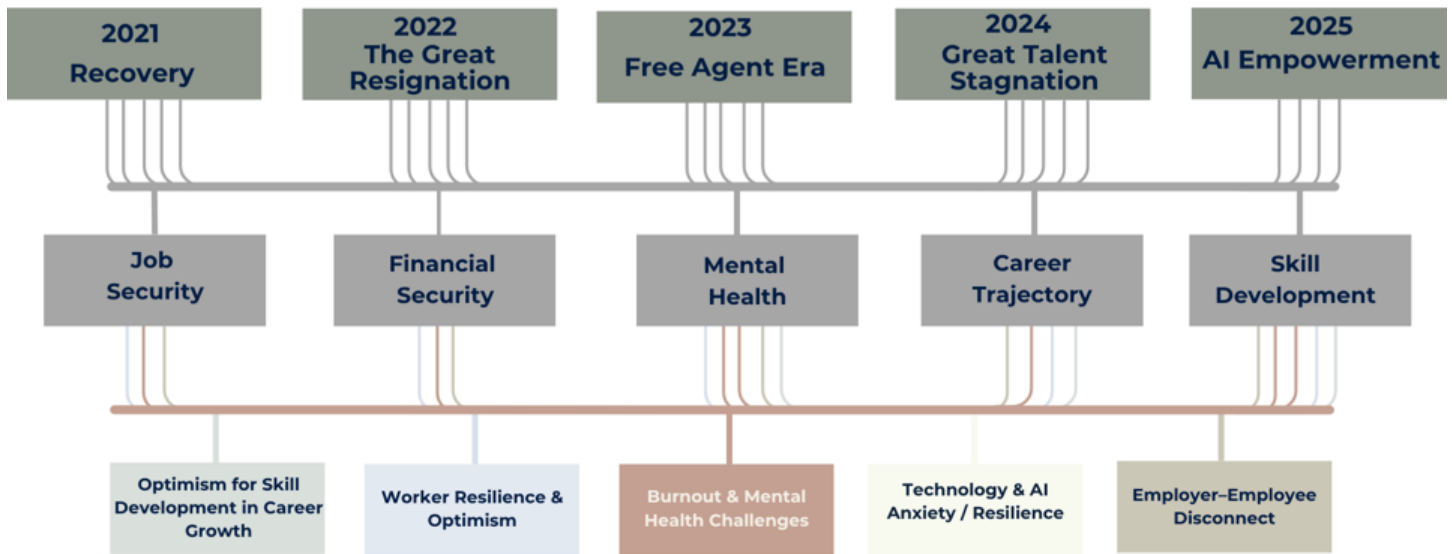


FIGURE 1 | Evolution of Career Optimism: Five-Year Trajectory, Core Pillars, and Cross-Connected Themes (2021–2025)

Note: Connecting lines indicate that themes span multiple pillars, reflecting the interconnected nature of workforce experiences across domains.

Pillar Analysis

The COI has been tracked for the past five years across five core pillars: Job Security, Financial Security, Mental Health and Wellness, Career Trajectory, and Skill Development, to measure worker optimism. These pillars provide the structural lens through which shifts in workforce optimism can be interpreted over time. The Index captured a national progression from the turbulence of the Great Resignation to the self-directed confidence of a Free Agent labor market and later to the Great Talent Stagnation and growing concerns about autonomy and well-being (UOPX, 2021–2025). These milestones indicate that, while optimism remained resilient, its foundation shifted from collective recovery toward personal adaptability and employability. Workers increasingly measured optimism not by external stability but by their capacity to reskill, maintain well-being, and navigate shifting expectations. Together, these patterns frame the pillar-level findings that follow, illustrating how each dimension of the COI contributes to understanding shifts in workforce optimism across the five-year period.

Job Security

Job Security reflects how workers’ perceptions of stability evolved across five years of economic disruption and technological change. In 2021, 55% of employees reported concern about losing their jobs or being replaced by technology, underscoring widespread automation anxiety (UOPX, 2021). This uncertainty persisted into 2022, when 56% of workers reported living paycheck to paycheck, and one in three indicated they would leave a job without another position secured, highlighting both financial survival and employment fragility (UOPX, 2022). By 2023, these fears had shifted toward employability confidence as workers redefined security through adaptability, signaling a stronger belief in their capacity to navigate change (UOPX, 2023). However, in 2024, optimism was tempered by renewed economic concern, with 42% fearing job loss and 53% feeling easily replaceable (UOPX, 2024). The 2025 findings marked a turning point, as 93% of employees who used AI tools reported feeling more employable and better prepared for future transitions (UOPX, 2025). These cross-year patterns indicate a shift from external dependence to self-directed security, in which adaptability and

continuous learning underpin optimism, a foundation reflected across the broader COI framework.

Financial Security

Financial Security remained a fragile but steadily evolving dimension of career optimism, revealing how workers' economic stability responded to ongoing economic pressure. In 2021, 56% of workers lived paycheck to paycheck, and 38% felt overwhelmed by debt, underscoring the lingering financial fallout of the pandemic (UOPX, 2021). The 2022 Index showed little improvement: 65% continued to live paycheck to paycheck, and 38% struggled with basic costs such as food and housing, highlighting the persistence of financial instability (UOPX, 2022). By 2023, inflation deepened this strain; 59% reported cutting spending due to rising prices, and 38% had taken second jobs to keep up with living costs (UOPX, 2023). In 2024, pay inequities intensified stress: 84% of employers reported employees were satisfied with their compensation, whereas only 54% of workers agreed, exposing a widening perception gap (UOPX, 2024). The five years of data indicated that while economic adaptation improved gradually, the cost-of-living pressures and employer misalignment around pay fairness kept financial fragility at the center of workers' optimism.

Mental Health and Wellness

Mental Health and Wellness has remained a defining pillar of workforce optimism, reflecting how employees' well-being shaped their outlook across five years of change. Early reports from 2021 and 2022 found that stress and limited access to effective support dominated worker experiences, with only 31% of men and 34% of women managing work-related stress (UOPX, 2021; UOPX, 2022). The 2022 Index introduced the employer perspective, revealing a significant gap between employers' perceptions and employees' realities. This gap was most evident in awareness of mental health resources: 85% of employers reported that such services were available, whereas only 62% of employees reported knowing about them (UOPX, 2022). In 2023, autonomy and flexibility became essential to well-being, as 86% of workers with control over their work were satisfied, compared with 66% without such control (UOPX, 2023). The 2024 findings indicated incremental progress: 43% of employees sought mental health resources to manage stress, suggesting greater

awareness but uneven access (UOPX, 2024). In 2025, technology was associated with a measurable improvement: 81% of employees using AI tools reported better work-life balance, and 42% reported less burnout, indicating that innovation may be easing strain rather than adding to it (UOPX, 2025). Over time, optimism around mental health strengthened when workers experienced greater control over their work, access to supportive resources, and tools that enabled a more sustainable work-life balance.

Career Trajectory

Career Trajectory tracks how optimism about growth and advancement evolved as workers redefined success through adaptability and self-direction. In 2021 and 2022, optimism remained strong, with 81% of workers reporting hope about their career futures and 73% indicating that employer support sustained motivation despite uncertainty (UOPX, 2022). By 2023, the Index noted a decisive shift from institutional assurance toward individual capability, describing the emergence of a free-agent mindset, with 53% of employees saying they were actively seeking new opportunities or expected to do so soon (UOPX, 2023). In 2024, this independence plateaued as progress slowed, resulting in what the Index described as a Great Talent Stagnation, in which workers expressed frustration with limited advancement and declining internal mobility (UOPX, 2024). By 2025, that frustration had reignited mobility intentions, with 66% reporting that a better job exists and 53% actively looking or expecting to look soon (UOPX, 2025). The findings suggest that optimism for career advancement has become increasingly self-driven yet constrained by organizational inertia, with progress defined more by individual agency than by employer-directed pathways.

Skill Development

Skill Development emerged as one of the most consistent drivers of career optimism, reflecting workers' belief that continuous learning supports long-term employability. In 2022, a substantial disconnect between perception and reality emerged: 89% of employers reported providing frequent upskilling opportunities, whereas only 61% of employees agreed (UOPX, 2022). By 2023, this gap fueled worker self-direction, with 75% of Americans actively seeking new learning or certification opportunities to strengthen their careers (UOPX, 2023). The 2024 Index reinforced

that development directly influenced retention, showing that 69% of workers would be more likely to stay if given opportunities to apply new skills (UOPX, 2024). In 2025, the rise of AI redefined the learning landscape: 56% of workers reported that AI accelerates skill development, 79% reported that it helps close knowledge gaps, and 68% of employers identified AI proficiency as a valuable career asset (UOPX, 2025). Across the five years, learning emerged not only as a skill-building priority but also as a central mechanism through which workers sustained optimism and prepared for workplace change.

The longitudinal analysis of the Index from 2021 to 2025 revealed that optimism evolved from a period of recovery to one defined by adaptability and resilience. While each pillar reflected a distinct dimension of worker experience, together they demonstrated that confidence in the future depends less on employer stability and more on individual agency. Job and Financial Security highlighted the persistence of economic vulnerability even as workers became more proactive in managing uncertainty. Mental Health and Skill Development demonstrated how well-being, flexibility, and continuous learning sustain optimism amid ongoing change. The increasing role of AI further accelerated this transition, positioning technology as a challenge and a source of empowerment. The five dominant themes emerging from five years of data across five pillars are: Optimism for Skill Development in Career Growth, Worker Resilience and Optimism, Burnout and Mental Health Challenges, Technology and AI Anxiety / Resilience, Employer–Employee Disconnect. These five themes provide the foundation for the following thematic analysis.

Findings: Cross-Pillar Thematic Synthesis

The thematic analysis extends the longitudinal review by examining patterns that emerged across the five Index years and the five Career Optimism pillars. While the years provide the temporal context of workforce change and the pillars represent the structural framework of the Career Optimism Index, the themes reflect interpretive insights derived from patterns observed across both dimensions. In this way, the analysis moves beyond individual pillar findings to identify broader dynamics that shape the worker experience over time. Five dominant themes emerged

from the cross-pillar analysis: Optimism for Skill Development in Career Growth, Worker Resilience and Optimism, Burnout and Mental Health Challenges, Technology and AI Anxiety / Resilience, Employer–Employee Disconnect.

The cross-pillar patterns described above are illustrated in Figure 2. The heat map visualizes how thematic patterns appeared across the five Career Optimism pillars and the five years of Index data (2021–2025). By mapping the presence of themes across both temporal and structural dimensions, Figure 2 (next page) provides a visual overview of how recurring issues and opportunities in worker experience emerged across multiple pillars rather than within a single dimension. This visualization helps contextualize the thematic synthesis that follows.

Optimism for Skill Development in Career Growth

The theme of optimism for skill development in career growth emerged from the Career Trajectory, Skill Development, and Mental Health pillar of the Career Optimism Index. The theme is evident across all five years and reflects workers' hope and determination to use skill development as a pathway to career advancement. Across the longitudinal study, optimism for skill development in career growth highlights a persistent drive where 86% of workers in 2025 actively sought skill expansion, contrasting sharply with the 2022 perception gap, where only 61% of employees felt they had access to the training their employers claimed to provide (UOPX, 2022; UOPX, 2025). These disparities imply that when organizational support fails to align with workers' appetite for growth, it creates a period of talent stagnation that undermines both worker engagement and organizational productivity (UOPX, 2024). Consequently, restoring a sense of career control through accessible skilling is critical to reducing burnout and ensuring the future resilience of the workforce. To bridge these gaps, organizations should implement lifelong learning ecosystems through personalized career portals and structured internal mentorship programs. By prioritizing these strategic investments, employers can transform individual optimism into a shared driver of long-term organizational success.

The COI findings reveal a conflict of viewpoints on career progression that disadvantages employees. While some employers promote transactional employment models, employees seek a system

Pillar	2021	2022	2023	2024	2025
Career Trajectory	Optimism for skill development in career growth	Optimism for skill development in career growth	Optimism for skill development in career growth	Burnout & Mental Health Challenges	Optimism for skill development in career growth
	Employer–Employee Disconnect	Employer–Employee Disconnect	Employer–Employee Disconnect	Optimism for skill development in career growth	Job Insecurity & Instability
	Job Insecurity & Instability	Job Insecurity & Instability	Job Insecurity & Instability	Employer–Employee Disconnect	Mentorship & Advocacy
	Mentorship & Advocacy	Mentorship & Advocacy	Mentorship & Advocacy	Job Insecurity & Instability	Worker Resilience & Optimism
	Worker Resilience & Optimism	Worker Resilience & Optimism	Worker Resilience & Optimism	Mentorship & Advocacy	
Financial Security				Worker Resilience & Optimism	
	Financial Fragility	Employer–Employee Disconnect	Burnout & Mental Health Challenges	Employer–Employee Disconnect	
		Financial Fragility	Employer–Employee Disconnect	Equity & Access Disparities	
		Worker Resilience & Optimism	Equity & Access Disparities	Financial Fragility	
			Financial Fragility	Job Insecurity & Instability	
Job Security			Job Insecurity & Instability	Worker Resilience & Optimism	
			Worker Resilience & Optimism		
	Technology & AI Anxiety / Resilience	Employer–Employee Disconnect	Employer–Employee Disconnect	Employer–Employee Disconnect	Employer–Employee Disconnect
	Financial Fragility	Financial Fragility	Financial Fragility	Job Insecurity & Instability	Job Insecurity & Instability
		Job Insecurity & Instability	Job Insecurity & Instability	Worker Resilience & Optimism	Technology & AI Anxiety / Resilience
Mental Health					Worker Resilience & Optimism
	Burnout & Mental Health Challenges	Burnout & Mental Health Challenges	Burnout & Mental Health Challenges	Burnout & Mental Health Challenges	Burnout & Mental Health Challenges
	Employer–Employee Disconnect	Optimism for skill development in career growth	Equity & Access Disparities	Employer–Employee Disconnect	Employer–Employee Disconnect
		Employer–Employee Disconnect		Equity & Access Disparities	Technology & AI Anxiety / Resilience
Skill Development		Worker Resilience & Optimism		Worker Resilience & Optimism	Worker Resilience & Optimism
	Optimism for skill development in career growth	Optimism for skill development in career growth	Burnout & Mental Health Challenges	Optimism for skill development in career growth	Optimism for skill development in career growth
	Equity & Access Disparities	Employer–Employee Disconnect	Optimism for skill development in career growth	Employer–Employee Disconnect	
	Mentorship & Advocacy		Employer–Employee Disconnect	Equity & Access Disparities	
			Equity & Access Disparities	Job Insecurity & Instability	
			Job Insecurity & Instability	Technology & AI Anxiety / Resilience	
			Technology & AI Anxiety / Resilience	Worker Resilience & Optimism	
			Worker Resilience & Optimism		

FIGURE 2 | Cross-Year Thematic Distribution Across Career Optimism Pillars (2021–2025)

Note: Cells indicate the presence of cross-connected themes within each pillar across reporting years. Repeated entries reflect the persistence and recurrence of themes over time.

that is more relational. As a result, employees have increasingly called for opportunities to develop their skills. About 71% of participants in the 2025 COI indicated they needed to strengthen their skills to advance (UOPX, 2025). Employers, despite recognizing this need, continue to prioritize external recruitment. In 2025, 60% of employers reported that they would rather hire new talent to fill skills gaps, despite higher associated turnover costs (UOPX, 2025). Employers believed annual or quarterly programs were adequate,

whereas employee responses consistently indicated a preference for more regular, consistent training (UOPX, 2025). These conditions likely reduce both empowerment and job satisfaction.

In 2023, the national interest in reskilling reached a significant peak, yet access to these opportunities remained structurally uneven across the workforce. While 75% of workers expressed a strong desire to develop new skills, 37% reported a lack of access to opportunities, and only 32% felt active employer

support for their professional growth (UOPX, 2023). This mismatch stood in sharp contrast to employer perceptions, as only 9% of employers believed that workers lacked access to necessary training (UOPX, 2023). Furthermore, studies suggest that when workers lack organizational support, high motivation can be undermined by logistical and emotional barriers (Kong et al., 2023). Conversely, structured access to skill-building resources fosters stronger engagement and commitment, particularly when technology is involved (Maulana et al., 2025). These findings align with longitudinal data indicating that optimism, the proper skill set, adaptability, and flexibility are the core actions required to successfully change careers (UOPX, 2022). This widening disconnect suggests that without a parallel shift in organizational infrastructure, individual worker determination risks compounding disengagement rather than enabling long-term innovation.

Worker Resilience and Optimism

Worker Resilience and Optimism emerged from all

five pillars and were evident across all five years of the Career Optimism Index review. Worker resilience and optimism highlight the persistence of hope, adaptability, and agency as workers proactively navigate professional growth despite macro-environmental uncertainty. Across the five-year longitudinal study, optimism remained remarkably consistent, with 78% to 81% of employees expressing long-term hope for their careers (UOPX, 2025). Those who strongly agreed that they were hopeful about their future increased from 26% in 2021 to 33% in 2025. Resilience when facing career challenges showed steady improvement from 2021 to 2024 (see Figure 3). The 2025 COI noted hope also strengthened overall sentiment, rising from 70 points in 2021 to 76 in 2025, reflecting sustained confidence despite ongoing labor market disruption (see Figure 3). These patterns suggest worker optimism is increasingly grounded in personal adaptability and resilience rather than confidence in employer support systems.

A primary question when reviewing the COI is whether optimism is the best defining characteristic of these

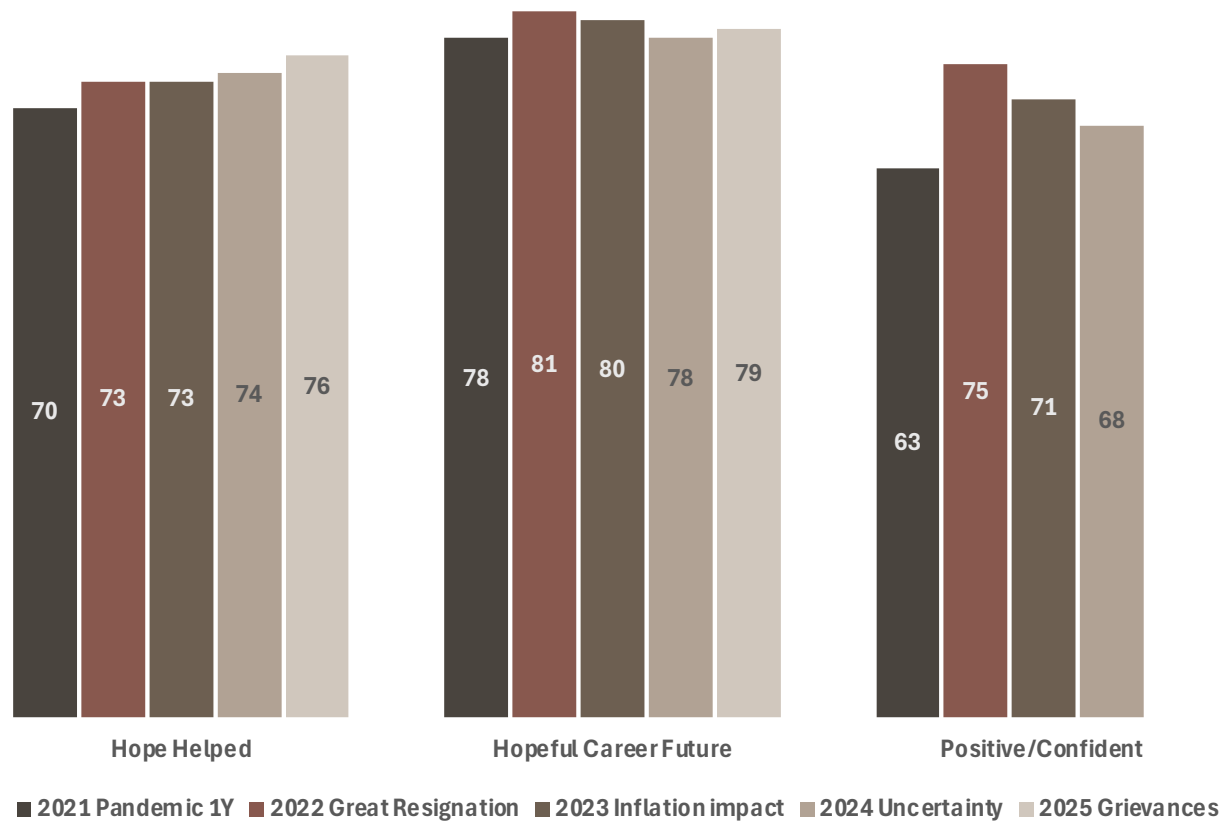


FIGURE 3 | Career Optimism Trends: Selected Indicators (2021–2025)

Note: Values represent reported percentages from the COI corresponding to key indicators of career outlook and perceived opportunity. “Positive/Confident” reflects respondents reporting feeling positive about the job opportunities available to them.

findings. Rather than stemming from confidence in employer support systems, this optimism is increasingly grounded in personal adaptability and resilience. As participants noted, optimism often serves as a personal coping strategy rather than an accurate reflection of actual work or career experiences (UOPX, 2024). Employers may interpret these individual coping strategies as signs of job satisfaction; however, this perspective overlooks workers' more pressing concerns about opportunities for advancement and skills gaps (UOPX, 2023). This shift suggests that high optimism scores may signal a workforce that is becoming self-reliant out of necessity rather than out of organizational loyalty.

Burnout and Mental Health Challenges

The theme of burnout and mental health challenges emerged from the Mental Health, Financial Security, Career Trajectory, and Skill Development pillars of the Career Optimism Index. Burnout and Mental Health Challenges encompass the emotional, psychological, and physical well-being of the workforce as employees navigate sustained stress and work-life imbalance. This theme connects to the mental health and wellness pillar, which measures emotional, psychological, and physical well-being across the workforce. Factors such as automation and concerns about being easily replaceable contributed to work-related stress as employees evaluated optimism about their careers across the five COI pillars, identifying barriers, opportunities for improvement, and changing conditions (UOPX, 2022). Data indicate that while wellness was a collective focus early in the pandemic, mental health became a central concern by 2022, with the overall COI score for this pillar increasing from 69 in 2021 to 73 in 2022 (UOPX, 2022). By 2025, burnout reached a record high of 51%, with workers lacking career control 56% more likely to experience these symptoms than those who felt in control (UOPX, 2025). Over the five-year study period, this issue evolved from an acute pandemic-driven crisis into sustained organizational awareness of employee fatigue and retention. Consequently, addressing these psychological pressures has shifted from optional wellness benefits to a strategic imperative for maintaining a resilient and productive workforce.

In the early years of the study, the COI findings indicated that workers remained resilient despite challenges associated with the pandemic, including financial concerns, job automation, and emotional

and structural barriers. During this period, mental health negatively impacted performance, leading many individuals to seek resources to help manage career-related stress. When considering critical skills for career advancement, workers prioritized work-life balance (44%) and managing mental health and wellness (37%) (UOPX, 2021). By 2022, a disconnect emerged between the need for mental health support and the use of available resources. Although 48% of employees indicated a need for support managing mental health and wellness, only 44% reported using employer-provided resources to address work-related stress (UOPX, 2022). These findings highlight an opportunity for organizations to strengthen communication and accessibility around available support systems, as increasing awareness and consistent engagement with wellness resources can help employees better navigate career-related stress and workplace challenges (Sharma & Bhosle, 2025).

When considering opportunities to address career concerns and support advancement, workers identified three priority areas: work-life balance (82%), physical health and fitness (75%), and mental health resources (69%). Employees also emphasized the need for stronger organizational support in these areas, with 53% highlighting work-life balance, 48% physical health and fitness, and 44% mental health resources as immediate needs. Providing proactive mental health support is therefore increasingly important for ensuring a psychologically safe workplace (Elufioye et al., 2024). At the same time, indicators such as work success and life fulfillment (86%) and career stress (25%) remained stable between 2021 and 2022. Work-life balance also increased slightly from 79% in 2021 to 81% in 2022, which may reflect employer efforts to respond to employee needs through more flexible work opportunities.

Americans experienced specific challenges in 2023 including burnout and mental health, with 33% noting work had a negative impact and 74% feeling stressed at work. Although employers recognize the value of mental health programs, emphasis tends to focus on benefit packages rather than practical solutions such as skills training, mentoring, or more targeted development opportunities, which represent resources employees believe would help reduce stress (UOPX, 2023). Burnout impacted 47% of individuals at work, with half reporting increases in the last year. Increases in not feeling fulfilled and empowered at work were also evident along with a lack of accessibility in

prioritizing work-life balance as reflected in Figure 4 (UOPX, 2023). Considering the burnout and fulfillment data, an additional opportunity includes encouraging employees to apply strategies to avoid burnout such as setting specific goals and focusing further on fulfilling elements of work (Kapoor, 2025). In terms of the impact of work-related stress and anxiety on personal life, a slight decrease was noted to 55% in 2023 compared to 56% in 2022, while a decrease was also evident for Americans seeking mental health resources (see Figure 4).

A key opportunity for employers includes integrating more flexible working opportunities, which were three of the four top priorities for future career

options. For instance, 69% of workers noted that flexible working opportunities (hours, remote, or work-from-anywhere arrangements) would help improve mental health (UOPX, 2024). Research also highlights the role of flexible work options, including teleworking and compressed workweeks, in positively influencing employee well-being (De Ruiter & Peters, 2021). Organizations are therefore encouraged to promote, prioritize, and intentionally integrate holistic wellness practices and flexible work schedules to support mental health and improve engagement and satisfaction (Guares, 2025). Additionally, 78% of workers reported feeling more productive with added flexibility.

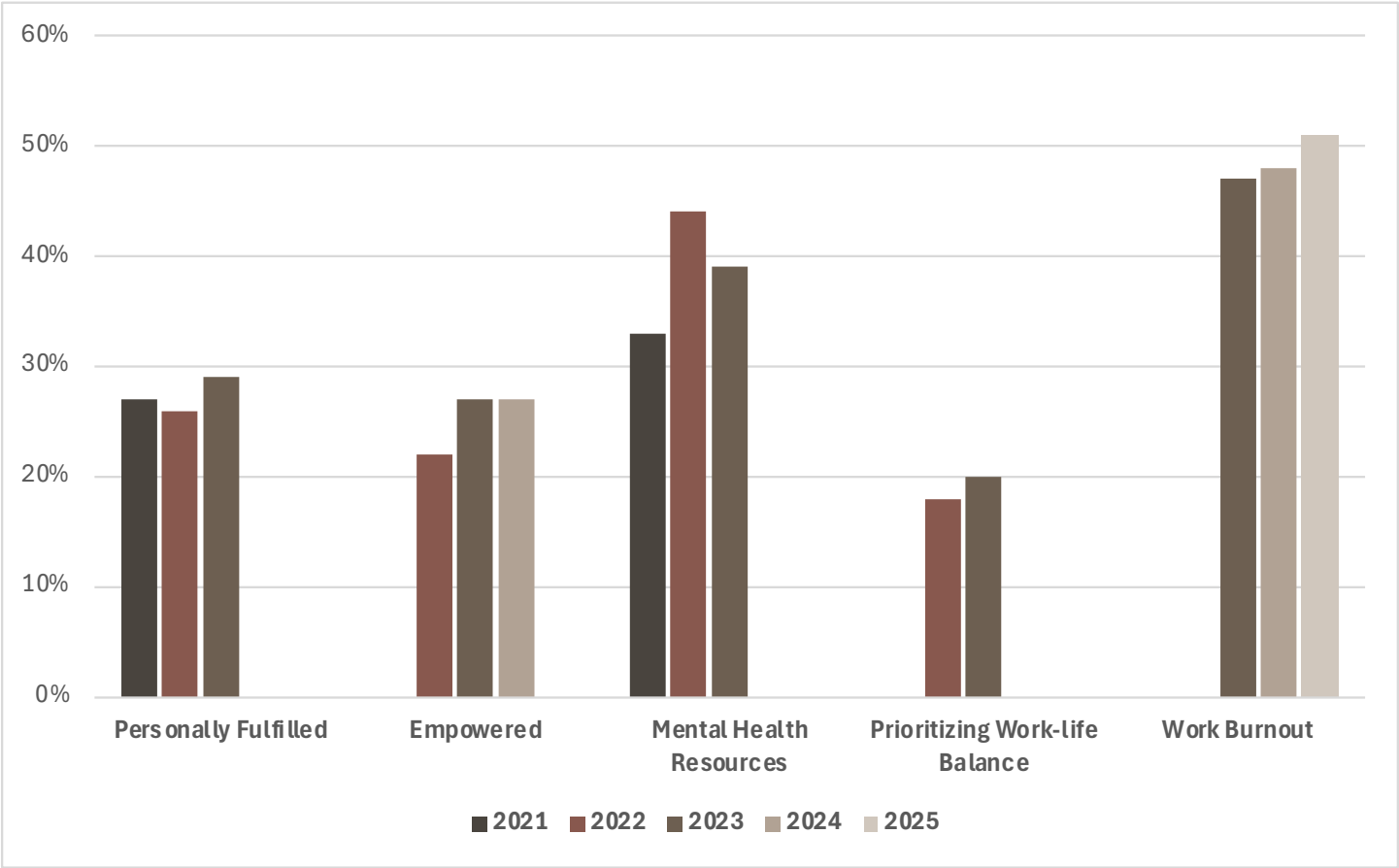


FIGURE 4 | Burnout and Mental Health Challenges

Technology and AI Anxiety / Resilience

The theme Technology and AI Anxiety / Resilience is evident across all five years from the Job Security, Skill Development, and Mental Health pillars of the Career Optimism Index. Technology & AI Anxiety/Resilience surfaces across all five years and reflects evolving worker perceptions of automation and AI, from early fears of job displacement to recognition of AI as a

tool for productivity, resilience, and growth. Across five years of the COI, technology emerged as both a source of apprehension and a catalyst for renewed confidence. In 2021, pandemic-driven automation heightened uncertainty about employability, yet by 2025, the same tools symbolized autonomy and innovation. This transformation reflects global shifts in the macro-environment, including the COVID-19 pandemic, the Great Resignation, and the 2022

introduction of large language models (LLMs) such as ChatGPT, which intensified public dialogue on AI's role in the workplace. Across studies, initial exposure to AI was linked to heightened anxiety and job-security concerns, followed by stabilization as understanding and reskilling increased (Cramarenco et al., 2023; Gerlich, 2024). Further research emphasized that psychological safety and organizational transparency influenced whether employees viewed AI as an opportunity or a threat (American Psychological Association [APA], 2024). These converging insights position technology not merely as an external disruptor but as an evolving context through which career optimism, trust, and resilience are continuously negotiated.

During the early COI cycles, worker concerns about automation reflected the shock of pandemic-era transformation and a wider search for stability. In 2021, 55% of employees reported worry about technology's impact on their jobs, and 22% experienced some automation in their roles, underscoring a perception of vulnerability that cut across sectors (UOPX, 2021). These conditions aligned with the Great Resignation and exposed how uncertainty about control, not just job loss, fueled anxiety (Gerlich, 2024). Psychological strain increased where organizations lacked visible support for learning and adaptation, weakening agency and belonging (APA, 2024; Kong et al., 2023). In 2022, the COI registered an overall score of 64 out of 100, and workers' mobility and opportunity-seeking intensified as flexibility and growth became priorities (UOPX, 2022). This pattern suggested that confidence began to hinge less on employment guarantees and more on pathways to new skills and roles. Together, the trend marks a pivot from fear to self-directed agency, setting the stage for the AI-focused shifts that followed.

By 2023, the COI reflected a workforce increasingly guided by self-determination rather than institutional loyalty. The COI reported that more than half of employees were either seeking or expecting to look for a new job within six months, signaling the emergence of a free agent mentality (UOPX, 2023). This shift was not purely about dissatisfaction but represented a broader redefinition of security; workers began valuing flexibility, skill development, and purpose over tenure. At the same time, 42% of workers expressed concern that their skills might become outdated due to automation, reinforcing the tension between aspiration and anxiety (UOPX,

2023). The rise of generative AI, following the public release of ChatGPT in late 2022, amplified both curiosity and apprehension as employees weighed the risks of automation against its potential for personal efficiency. Research suggests that reframing change through adaptive cognition helps reduce technological resistance and fosters readiness to learn (Voigt & Strauss, 2025). Broader public discourse also revealed that anxiety often subsides when individuals feel capable of influencing how AI is used within their work environments (Gerlich, 2024). Together, these patterns marked a decisive movement from dependence to agency, positioning adaptability as the new foundation of career optimism.

By 2024, the Career Optimism Index highlighted a widening gap between employees' motivation to adapt and employers' readiness to provide structured AI training. More than half of workers, 53%, reported they needed assistance to use AI tools effectively, yet only 18% said their organizations offered relevant training opportunities (UOPX, 2024). This disparity underscored an emerging AI skilling divide, where enthusiasm for innovation outpaced institutional capacity to support it. Research on technology acceptance reinforces that adoption depends not only on perceived usefulness but also on ease of use, social support, and organizational facilitation (Na et al., 2022; Wang et al., 2023). When enabling conditions like autonomy, explainability, and user participation are weak, behavioral and collaborative intention decline, limiting productive adoption (Baroni et al., 2022). Concurrently, global frameworks such as the National Institute of Standards and Technology (NIST) AI Risk Management Framework began emphasizing the importance of human oversight and ethical deployment, echoing workers' desire for guidance and trust in implementation practices. Collectively, these patterns reveal that optimism about AI's potential in 2024 was tempered by frustration over uneven access and limited employer investment, signaling a pivotal year in the evolution from technological anxiety to resilience.

The 2025 Career Optimism Index marked a turning point, dedicating its publication to the growing influence of AI and technology in shaping worker optimism. This focus reflected a full-circle evolution from 2021, when technology first appeared in the Index as a source of automation anxiety under Job Security, to its redefinition as a driver of confidence and adaptability (UOPX, 2021; UOPX, 2025). Growing

grievances and workplace discontent were evident in 2025, with 51% of employees reporting symptoms of burnout and those lacking career control being 56% more likely to experience these outcomes (UOPX, 2025). Within this context, AI use was associated with measurable improvements in worker experience, including enhanced work-life balance (81% in 2024–2025), a 4-point increase in productivity (89%), and gains in autonomy (+12 points), resilience (+5 points), and adaptability (+5 points). Additionally, AI contributed to increased optimism about future career prospects (+11 points), a stronger sense of control (+16 points), and reported reductions in burnout over the past year (+25 points) (UOPX, 2025).

Workers who used AI tools reported notable gains across well-being and performance, with 93% feeling more employable and less replaceable than non-users (UOPX, 2025). Similarly, 81% of respondents said AI improved their work-life balance, 89% credited it with higher productivity, and 42% experienced reduced burnout, compared to only 17% of non-users (UOPX, 2025). These outcomes illustrate a measurable transition from fear to empowerment as technology became a normalized element of daily work. Empirical research supports this relationship, showing that AI anxiety decreases and satisfaction increases when organizations provide structured training and psychological safety (APA, 2024; Feng et al., 2025). Broader workplace studies likewise confirm that sustainable and inclusive HR practices foster the adaptability and career optimism needed for long-term engagement (Guares, 2025; Voigt & Strauss, 2025). By 2025, the Index positioned technological resilience as a defining dimension of career optimism, demonstrating how guided AI adoption transformed early apprehension into sustained confidence.

The longitudinal evidence and supporting research underscore that the path from technological anxiety to resilience requires intentional alignment among employers, educators, and policymakers. Organizations should prioritize structured AI training and psychological safety practices that normalize experimentation and reduce apprehension (Feng et al., 2025). Embedding sustainable and inclusive human resource strategies, such as flexible work policies and well-being integration can strengthen employee adaptability and long-term engagement (Guares, 2025). Employers and educators should collaborate to build AI literacy pipelines that emphasize transferable skills and human judgment, preparing

workers to complement rather than compete with technology (Chiekezie et al., 2024; Voigt & Strauss, 2025). Transparent communication and participatory approaches to AI design can also cultivate trust, improving both adoption and retention outcomes (Kong et al., 2023). Policymakers have an opportunity to support these efforts by establishing standards that promote the ethical use of AI and equitable access to reskilling. Collectively, these strategies extend the theme's core insight: technology does not determine career optimism; human-centered systems that invest in capability, trust, and wellness do.

Employer–Employee Disconnect

The Employer–Employee Disconnect theme surfaces across all five years and five pillars of the Career Optimism Index. Employer–Employee Disconnect, highlighting a significant misalignment between organizational intentions and workers' lived experiences of trust, support, and opportunity. Longitudinal data indicate that this theme emerged in 2022, revealing gaps in perceptions of upskilling: 89% of employers reported providing adequate training, whereas only 61% of workers did (UOPX, 2022). By 2024, this divide expanded into a period of talent stagnation, characterized by a stark contrast: 62% of employers reported offering internal mobility, whereas only 36% of employees reported receiving it (UOPX, 2024). Furthermore, although 90% of employers report offering career development, only 69% of the workforce reports noticing these resources (UOPX, 2024). These disparities suggest that employers often overlook internal talent in favor of external hiring, inadvertently driving workers to adopt a “free agent” mentality to secure their own advancement (UOPX, 2023; UOPX, 2025). Addressing this disconnect requires organizations to move beyond transactional, short-term performance incentives and establish transparent, equitable development pathways that rebuild trust and support long-term alignment between individual and organizational success.

Participants in the COI research expressed uncertainty about opportunities for advancement within their organizations. This perception gap reinforces the broader disconnect, as employees described employers as overlooking internal talent in favor of external hiring, contributing to what some referred to as a “moment of talent stagnation” (UOPX, 2024). Over five years of tracking, employers have made little progress in closing this sentiment gap, underscoring

the need for clearer communication and more transparent career pathways (UOPX, 2025). Without a fundamental shift toward accessible and visible internal opportunities, organizations risk entrenching this stagnation and driving their most ambitious talent to seek growth elsewhere.

A pervasive lack of empowerment and recognition has become a significant barrier to job satisfaction, directly reinforcing the disconnect between workers and their organizations. Although empowerment and job satisfaction are closely linked, many employees over the five-year study period reported limited opportunities for advancement due to a lack of empowerment (UOPX, 2024). In 2024, roughly 30% of respondents said their contributions were not recognized by leadership, while 27% reported feeling powerless (UOPX, 2024). Nearly half of participants described feeling easily replaceable across multiple years of measurement (UOPX, 2025). These perceptions conflict with psychological well-being and a sense of workplace safety. When workers feel their agency and contributions are consistently overlooked, loyalty shifts away from the organization and toward individual career preservation.

Heightened concerns about employee turnover underscore the need for organizations to align retention strategies with the expectations of an increasingly mobile workforce. Turnover intent remains a primary organizational concern, with 68% of employers reporting worry about turnover rates in 2025 (UOPX, 2025). Despite this, many organizations continue to underinvest in long-term retention strategies such as mentoring, career guidance, and flexible work options—resources employees consistently identify as critical to sustaining engagement (UOPX, 2025). More than half of workers (54%) in 2025 were actively seeking or expecting to look for a new job within six months (UOPX, 2025). This pattern reflects a broader shift in workforce behavior, as employees prioritize individual growth and security over traditional organizational loyalty (UOPX, 2023). Without development-centered retention models, organizations risk continued instability and erosion of their internal talent base.

A shift in worker sentiment indicates that professional confidence is increasingly decoupled from organizational support systems, as employees prioritize individual agency. Over the five-year period, perceptions have moved away from viewing employers

as primary career collaborators toward a more independent approach to career progression (UOPX, 2025). This transition coincided with declining trust, as persistent gaps in access to internal opportunities and development pathways reinforced perceptions of limited organizational support (UOPX, 2024). Consequently, optimism is increasingly interpreted as a personal coping mechanism rather than an outcome of employer investment, reflecting ongoing gaps in job satisfaction and skills readiness (UOPX, 2023). This pattern underscores a broader reframing of responsibility, as workers navigate their career trajectories with reduced reliance on employer-provided structures.

The tension between emerging return-to-office mandates and employee expectations highlights a critical point of friction, as the workforce increasingly views flexibility as a non-negotiable element of career control. Although the Career Optimism Index does not directly measure return-to-office mandates, the findings consistently show that employees place high value on how and where they work (UOPX, 2024). Across multiple years, workers with flexible schedules report stronger mental health, lower burnout, and a greater sense of control over their careers (UOPX, 2025). These preferences intersect directly with retention concerns, suggesting that rigid return-to-office requirements may negatively impact engagement, productivity, and long-term workforce stability. Employers who prioritize rigid structural requirements over demonstrated workforce preferences risk deepening the disconnect and driving talent toward more adaptable organizations.

Implications for Organizations

The findings across themes reveal a consistent misalignment between organizational practices and worker expectations, particularly in areas of career development, support, and trust. While employees continue to demonstrate resilience and optimism, these attributes are increasingly self-driven rather than supported by employer systems. Persistent gaps in internal mobility, access to development opportunities, and perceptions of recognition indicate that current organizational approaches are not fully aligned with workforce needs. As a result, organizations must take a more intentional and integrated approach to addressing these challenges.

Rebuilding trust between workers and employers

requires moving beyond transactional engagement toward relationships grounded in visible leadership accountability (UOPX, 2025). Organizations must invest more intentionally in internal mobility and skill development to align with worker expectations, particularly as 86% of workers are actively seeking development opportunities while employer investment in reskilling has declined (UOPX, 2025). Establishing transparent communication and balancing flexibility with fairness are also critical, as workers with flexible schedules report stronger mental health outcomes and a greater sense of control (UOPX, 2024). Strengthening mentorship and career pathing can further restore confidence in organizational support by signaling a sustained commitment to individual growth (UOPX, 2023). Collectively, these shifts support a transition toward a more relational model that can reduce perception gaps and strengthen long-term workforce stability.

These findings also underscore the importance of addressing workforce well-being as a core organizational priority rather than a supplemental initiative. Elevated levels of burnout, coupled with increasing reliance on individual coping mechanisms, suggest that employees are sustaining performance despite, rather than because of, organizational support structures. This dynamic reinforces the need for organizations to integrate mental health, workload management, and flexibility into broader talent strategies rather than treating them as isolated programs. Aligning well-being initiatives with career development, recognition, and autonomy will be critical to strengthening engagement and ensuring that workforce resilience is supported rather than assumed.

Recommendations for Future Research

This five-year synthesis of the Career Optimism Index raises several questions for future research, with the most pressing concerning what self-directed optimism represents. The findings indicate that career optimism shifted from institutional assurance to individual agency over the study period, yet the data cannot determine which form predominates. Both qualitative phenomenological research and longitudinal studies that follow workers through career transitions are needed to examine whether this shift reflects empowerment or resigned self-reliance, where

workers no longer expect organizational support out of necessity rather than confidence. This distinction is particularly important, as employers who interpret high optimism scores as evidence of a healthy workforce may misread a coping response as genuine satisfaction.

A second area for future research involves how AI adoption relates to the well-being outcomes reported in the 2025 Index. Workers who used AI tools reported lower burnout, improved work-life balance, and higher productivity; however, the data cannot determine whether AI use drove these outcomes or whether individuals who were already adaptable and technologically confident were more likely to adopt AI. To clarify this relationship, future research should examine differences in outcomes between AI adopters and non-adopters. This distinction would help practitioners better leverage AI while addressing the seemingly conflicting findings of high burnout alongside rising confidence in AI use.

A third area for future research concerns the broader context in which career optimism develops. This analysis focuses primarily on employer–employee dynamics, yet career optimism does not emerge in an organizational vacuum. Research that incorporates policy and economic conditions alongside organizational variables may provide a more comprehensive understanding of workforce sentiment and help distinguish shifts driven by employer practices from those shaped by broader structural forces, such as changes in government policy.

Finally, future research should clarify distinctions that remain conceptually blurred within the current analysis. Reskilling and upskilling appear throughout the COI and this study without a consistent distinction, despite representing different forms of development with distinct implications for career progression and organizational response. Similarly, adaptability and resilience are discussed in overlapping ways without a clear understanding of whether one precedes the other or whether both reflect a broader orientation toward agency. Clarifying these distinctions would provide researchers and practitioners with a more precise framework for interpreting and acting on workforce sentiment findings.

Limitations

The Career Optimism Index has evolved in scope

and design over the five-year study period to reflect shifting workforce priorities and emerging labor market dynamics. While workforce sentiment has been consistently tracked since 2021, employer perspectives were incorporated beginning in 2022, expanding the Index to capture a more comprehensive view of the employment relationship. Additionally, the structure and emphasis of each annual report were refined over time to align with relevant economic and workplace trends. As a result, the findings are best interpreted as a longitudinal narrative of evolving workforce sentiment rather than a strictly uniform year-over-year comparison. This approach preserves the integrity of the insights while recognizing the adaptive nature of the Index in capturing a rapidly changing work environment.

Measurement approaches across reporting cycles reflect this evolution, with certain indicators and emphasis areas shifting to better represent emerging workforce concerns. While not all metrics were consistently standardized across each year, the collective data provide a robust foundation for identifying directional trends across key pillars, including job security, mental health, financial stability, career trajectory, and skill development. These insights support a comprehensive understanding of workforce optimism as a dynamic construct shaped by both external conditions and individual adaptation over time.

Conclusion

The five-year trajectory of the Career Optimism Index reveals not a decline in optimism, but its reconstitution. Within this analysis, an undeniable, fundamental shift has emerged in the scope of career optimism, moving from a collective focus on pandemic recovery to a mindset defined by individual agency and technological empowerment. Between 2021 and 2025, optimism remained statistically stable, yet its source migrated from institutional assurance to individual capability. In the wake of pandemic disruption, economic volatility, and technological acceleration, workers recalibrated what it means to feel secure, hopeful, and future oriented. Importantly, the findings suggest that high levels of reported optimism should not be misinterpreted as evidence of organizational health. Rather, optimism often functioned as an adaptive coping mechanism. By evolving from a state of dependence to one of proactive mastery, the modern

workforce has signaled that career optimism is a self-generated barometer of resilience rather than a reflection of organizational satisfaction.

Ultimately, the findings underscore that the future of career optimism rests on alignment. Organizations that continue to rely on transactional employment models risk deepening disengagement and accelerating turnover in an already mobile labor market. Specifically, future organizational sustainability will depend upon transitioning from transactional employment models to relational ecosystems that integrate transparent advancement pathways, structured reskilling, AI literacy, and mental health architecture. The evidence suggests that when institutions align with workers' demand for agency and capability, optimism becomes mutually reinforcing rather than individually compensatory. Career optimism, therefore, is no longer merely an attitudinal metric; it is a structural indicator of whether institutions enable human adaptability in an era defined by technological acceleration and economic volatility. In an era defined by rapid technological change and economic uncertainty, the capacity to cultivate agency, trust, and opportunity will determine not only workforce optimism, but organizational sustainability itself.

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Staying Power in STEM Teaching: A Mixed-Methods Study of Elementary Teachers' Self-Efficacy, Burnout, and Barriers to Sustaining STEM Instruction

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Abstract

This mixed-methods descriptive study examined in-service elementary STEM teachers about their experience in their roles, preparation, stressors, and supports, with particular attention to teacher self-efficacy, burnout risk, and workplace attrition pressures. Using Bandura's Social Cognitive Theory, we explored the four sources of self-efficacy as mediators that influence teacher resilience and sustainability in STEM teaching roles. Eleven teachers completed a well-established and validated questionnaire (T-STEM) using Likert-scale efficacy items and reported on classroom practices through open-ended reflections. Reliability of scale and subscales were calculated using Cronbach's alpha. Quantitative data were summarized by subscale means and a composite self-efficacy score. Qualitative data were thematically analyzed for first-order barriers (time, materials, support) and burnout cues.

Composite self-efficacy was moderate ($M = 3.52/5$). Teachers expressed confidence in continuing to make improvements in their STEM teaching ($M = 4.00$) and in welcoming questions from their students ($M = 3.78$), but uncertainty existed about, "knowing the steps to teach STEM" ($M = 3.40$) and "explaining why investigations

work” ($M = 3.30$). Open-ended responses reflected chronic overload, role ambiguity, and resource gaps—conditions that align with known drivers of burnout and teacher attrition (Creagh et al., 2023).

Elementary STEM teachers’ self-efficacy interacts with burnout conditions imposed by time scarcity, inadequate materials, and inconsistent leadership support. Evidence from this study supports that reduction of first-order barriers is critical, not only for instructional improvement but also for retaining STEM teachers, by reducing burnout risk, and improving long-term workforce sustainability.

Keywords: teacher self-efficacy; teacher burnout; teacher attrition; elementary STEM; STEM teachers

National data show teacher turnover has climbed four percentage points above pre-COVID levels, reaching 10% nationwide with several states having reported their highest turnover in at least five years (Diliberti & Schwartz, 2023, James, 2023). These trends intersect critically with STEM teaching, which already demands specialized content knowledge, access to materials, and pedagogical expertise (National Science Teaching Association, 2024; Cheek et al., 2024). The STEM teacher workforce is facing unprecedented strain.

Teacher self-efficacy, defined as teachers’ beliefs in their ability to perform teaching tasks, strongly predicts job satisfaction, emotional exhaustion, and whether teachers remain in or exit the profession (Xiao & Zheng, 2025). Low self-efficacy has been linked to increased burnout symptoms and attrition across multiple studies (Skaalvik & Skaalvik, 2017; Herman et al., 2018; Li, 2023, Day & Golfen, 2024; Reinke et al., 2025; Xiao & Zheng, 2025). The 2023 systematic synthesis linked workload and work intensification (“time poverty”) to negative impacts on the health, well-being, and attrition of teachers, underscoring how persistent resource constraints and role demands fuel burnout dynamics that push teachers out of the profession. For elementary teachers integrating STEM content, additional pressures arise from the need to integrate multiple disciplines, the scarcity of hands-on resources or the training on district-provided curriculum, and the need to manage student-centered inquiry (Cheek et al., 2024; Wu et al., 2024). These factors can amplify emotional labor and increase burnout risk (Wu et al., 2024).

According to Bandura’s Social Cognitive Theory, self-efficacy is shaped by four sources: mastery experiences, vicarious experiences, social persuasion, and emotional states (Bandura, 1977; Bandura, 1997). “Information concerning efficacy expectations is conveyed enactively, vicariously, verbally, and physiologically” (Bandura, 1977, p. 193) and these in turn, “influence perceived self-efficacy”

(Bandura, 1997, p. 197). Meta-analytic findings show interventions that increase mastery experiences produce the largest gains in teacher efficacy and reduce burnout risk (Nordin et al., 2018; Wang & Wang, 2022; Li, 2023; Täschner et al., 2025).

Additionally, emotional states, such as stress, frustration, and overload, have been found to directly influence teacher self-efficacy and correlate with declining instructional quality and attrition (Skaalvik & Skaalvik, 2017; Herman et al., 2018; Li, 2023, Day & Golfen, 2024; Reinke et al., 2025; Xiao & Zheng, 2025). This study explores how in-service elementary STEM teachers perceive their own self-efficacy in teaching STEM and how they describe any first-order barriers to enhancing their own self-efficacy which supports resilience and sustained engagement in the profession.

Methods

Design and Instrument

A mixed-methods survey was conducted using the William and Ida Friday Institute T-STEM Elementary Teachers questionnaire with permission. Additionally, open-ended questions were added that invited in-service STEM teacher reflection about their influences and needs as a STEM educator in the elementary classroom. The validated T-STEM framework includes validated subscales for teaching efficacy, outcome expectancy, and instructional behaviors (Friday Institute for Educational Innovation, 2012).

Participants

Eleven consenting in-service educators participated from multiple U.S. states (PA, TX, AZ, IL, IN). All participants were licensed teachers who indicated active or recent grades K–5 STEM teaching involvement. Some were classroom teachers and others were resource or support teachers.

Analysis

Likert-type responses were quantified and summarized with means and item frequencies. Cronbach’s alpha for scale and subscale reliability was calculated. Open-ended responses were thematically coded (overload, resource scarcity, role conflict), first-order barriers (time, materials, leadership support), and areas referencing preparation or ongoing professional development.

Results

The internal consistency analyses using Cronbach’s alpha indicated that the survey subscales demonstrated strong to excellent reliability, despite the small sample size. The Personal Teaching Efficacy and Beliefs (PTEB) subscale produced an alpha of .948, suggesting highly consistent measurement of teachers’ STEM-teaching self-beliefs across items. The Student Technology Use subscale also demonstrated excellent reliability ($\alpha = .908$), while the STEM Instructional Practices subscale showed the highest internal consistency ($\alpha = .972$), reflecting the coherence of items describing hands-on, inquiry-based classroom

behaviors. The 21st-Century Learning Attitudes subscale yielded a strong alpha of .824, appropriate for attitudinal constructs. When combined, the overall practices scale showed excellent reliability ($\alpha = .968$), and the overall attitudinal scale demonstrated strong internal consistency ($\alpha = .881$). Although extremely high alphas can sometimes indicate item redundancy, these findings collectively suggest that the instrument measured its intended constructs consistently within this sample. However, given the limited number of complete cases ($n = 8\text{--}10$ per subscale), these values should be interpreted as preliminary indicators of reliability, to be confirmed with a larger sample.

The composite elementary teacher self-efficacy was moderate ($M = 3.52/5$; $SD = 1.04$), with substantial variability—a pattern that matches national findings showing that teacher self-efficacy fluctuates under burnout conditions (Skaalvik & Skaalvik, 2010; Aloe et al., 2014; Zee & Koomen, 2016). Teachers expressed confidence in continually improving their STEM teaching abilities but lacked clarity in what they are supposed to know as STEM-specific instructional steps indicating concerns with their preparedness which has been linked to vulnerability to overload and role ambiguity (Aloe et al., 2014; Zee & Koomen, 2016).

Item	Mean	<i>n</i>
Continually improving practice	4.00	11
Welcome student questions	3.78	10
Help struggling students	3.70	11
Teach STEM effectively	3.60	11
Know steps to teach STEM	3.40	11
Explain why investigations work	3.30	11
Have necessary skills	2.80	11

TABLE 1 | Item-Level STEM Self-Efficacy (1–5 Likert)

Qualitative Indicators of Burnout

Many respondents explicitly described stress, lack of preparation, and cognitive overload. One participant stated, “I had zero preparation for my role... I am learning as I go, which is exhausting” while another stated, “Money, time, lack of resources—and my own training gaps—make STEM overwhelming.” A first grade teacher shared, “Students need hands-on experiences, but I’m the one scrambling to make

it possible.” These statements align with burnout literature showing that STEM teachers often confront increased emotional labor due to material shortages, hands-on logistics, and interdisciplinary planning complexity.

Classroom Practices: Engagement High, Cognitive Load Higher

Reported practices were strongest for real-world

Item	% “Usually/Every time”
Real-world context	54.5
Small groups	45.5
Tech for new ideas	36.4
Data collection	36.4
Observations/measurements	36.4
Career awareness	27.3
Quantitative reasoning	18.2
Abstract reasoning	9.1

TABLE 2 | Frequency of Reported Practices

context (54.5% “Usually/Every time”) and group work (45.5%), while quantitative reasoning, abstract reasoning, and career awareness were used far less often (See Table 2). These gaps reinforce teachers’ reported feelings of inadequacy or uncertainty about STEM-specific instructional demands.

Discussion

Self-Efficacy as a Protective Factor

Prior research indicates that teachers with higher STEM self efficacy demonstrate greater persistence, experience less burnout, and are more likely to remain in the profession (Lazarides & Warner, 2020; Zee & Koomen, 2016). Moreover, efficacy building strategies that emphasize mastery experiences, such as rehearsed instruction, coached implementation, and modeling, are associated with increased self efficacy and reduced burnout (Li, 2023; Malmberg et al., 2014).

Integration Challenges and Teacher Stress

Prior research indicates that elementary STEM instruction often emphasizes real world activities while underrepresenting mathematics and engineering practices, reflecting persistent gaps in teacher preparation (Park et al., 2011; Wendell, 2014). These gaps increase cognitive load and planning demands, which are well established contributors to burnout, particularly among early career teachers (Park et al., 2011; Skaalvik & Skaalvik, 2017; Herman et al., 2018).

First-Order Barriers and the Burnout Spiral

Prior research identifies material scarcity, time

pressure, and leadership gaps as first order barriers that intensify teacher stress and constrain effective STEM instruction (Creagh et al., 2023). Such conditions worsen teachers’ emotional states, undermine self efficacy, and contribute to burnout (Li, 2023; Weißenfels et al., 2021; Skaalvik & Skaalvik, 2017; Herman et al., 2018).

Implications for Reducing Burnout and Attrition

For elementary STEM educators, consider: (1) Mastery experiences or practice-embedded STEM Endorsement or other high quality professional development sessions that involve cohort-based professional learning opportunities, such as co-constructing teacher practices, co-teaching, and coached reflection; (2) Vicarious learning or peer observation, and directive coaching that support uncertainty that often leads to emotional exhaustion; (3) Improve emotional working conditions by guaranteeing materials budgets, ensuring predictable lab/space scheduling, protecting planning time, and clarifying expectations around STEM integration; (4) Connect community, especially those involved in STEM workforce and industry, those offering graduate level STEM endorsement-type programming and informal opportunities with elementary STEM educators. Research shows such additions boost student motivation and teacher identity development (Çolakoğlu & Steegh, 2023).

Conclusion

This study highlights the challenges facing elementary STEM teachers: meeting the demands of providing

elementary STEM instruction while navigating a profession experiencing historic levels of attrition and burnout. Teachers' moderate self-efficacy, combined with widespread reports of time scarcity, resource gaps, and emotional overload, reflect a system in which educators strive to do transformative work but lack the conditions to sustain it. Supporting in-service teachers and improving their self-efficacy is not only a pedagogical imperative; it is a retention strategy. When district administrators provide resources, coaching, protected time, and support, they strengthen teachers' self-efficacy, reduce burnout, and improve the long-term sustainability of the STEM teaching workforce.

IRB / Research Ethics Statement

IRB study number 2043146-2 was approved in 2023. This study analyzed anonymous survey data from consenting adult educators and involved minimal risk. All participants provided consent. Identifying information was removed prior to analysis. This project qualifies for exempt status under 45 CFR 46.104(d) Category 2.

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Benefits and Risks of Inclusion for Preschool Children with Autism Spectrum Disorder: A Qualitative Multi-case Study

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Abstract

Early childhood education has been influenced by various theories on child development, impacting practices for both typically and atypically developing children. Educational pioneers argue that children with special needs should have access to the general education curriculum with necessary modifications. With the increasing number of children with autism spectrum disorder (ASD) in preschool, equitable opportunities must address individual needs through constructivist approaches that recognize the link between language, cognitive, and social-emotional development in the least restrictive environment (LRE). The joint policy by the U.S. Departments of Health and Human Services and Education emphasizes the benefits of inclusive classroom settings, yet significant barriers to implementation persist. This case study explored the methods preschool teachers use to support children with ASD and their reasons for selecting those strategies. Results indicate a need for professional development and stronger collaboration between private childcare centers and public schools to implement the joint policy effectively.

Keywords: Early childhood theory, autism spectrum disorder, preschool children, preschool teachers, child development, constructivism, parent participation.

Early childhood education has historically been shaped by theoretical perspectives on child development that inform practice for both typically and atypically developing children (Chand, 2023; Saracho, 2023). Educational pioneers have emphasized constructivism — an approach centered on active,

child-centered facilitation in which children make meaningful connections between prior and new experiences. For children with autism spectrum disorder (ASD), Piaget and Vygotsky's cognitive theory suggests integrating individualized and social constructivism, recognizing the interconnectedness of

language, cognitive, and social-emotional development (Berk & Winsler, 1995; Chand, 2023). As more young children with ASD enter preschool programs, equitable opportunities require attention to that integration.

Autism Spectrum Disorder

In the 1994 DSM-IV, autism spectrum disorder (ASD) was categorized into autism, Asperger’s syndrome, pervasive developmental disorder (PDD), and PDD-NOS. The 2013 DSM-V consolidated these into a single ASD diagnosis (Sicile-Kira, 2014). ASD is a neurodevelopmental disability characterized by persistent deficits in communication and social interaction across contexts, alongside possible restricted and repetitive patterns of behavior (Barton & Harn, 2014; Sanz-Cervera et al., 2017; Sicile-Kira, 2014). Prevalence has risen markedly, from one in 150 children in 2000 to one in 68 by 2012 (Sanz-Cervera et al., 2017).

Figure 1 shows the number of 3–5-year-old preschool children with ASD in New Jersey who received a free and appropriate education (FAPE) from 2014–2020. The data indicate a consistent rise from 1,275 children (7.00%) in 2014 to 1,616 (7.81%) in 2018, followed by modest decreases in 2019 and 2020 — likely reflecting the impact of COVID-19.

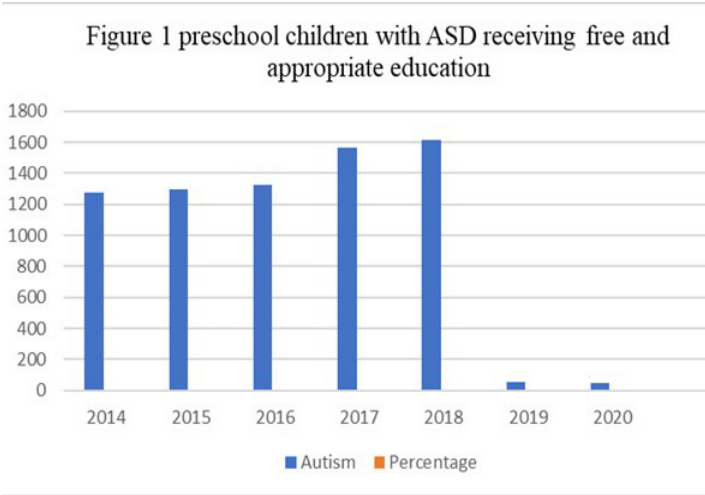


FIGURE 1 | Preschool children with ASD

Note: 3 – 5-year-old children with ASD in New Jersey from 2014 - 2020. Source: New Jersey Department of Education Office of Special Education Programs.

Barton and Harn (2014) and Sicile-Kira (2014) describe behavioral traits commonly observed in children with ASD, including limited joint attention, minimal eye contact, language difficulties (aphasia,

echolalia), insistence on sameness in routines and sensory preferences, difficulty with transitions, limited pretend play, and reduced social interaction with peers. Educators may experience these traits as challenging — and may come to perceive autistic children as different or problematic. The essential question is whether the issue lies in the children’s behavior or in the beliefs and perceptions of those working with them.

Inclusion of Children with ASD

Vygotsky argued that children with special needs should have access to the general education curriculum with necessary modifications, and that teachers should act as facilitators who present information in ways that scaffold the child’s progression (Berk & Winsler, 1995; Bodrova & Leong, 2007; Cade, 2023). Frankel (2004) extended this position by citing the 1989 UN Convention on the Rights of the Child, which affirms the right of special-needs children to inclusion in childcare and kindergarten programs. Frankel also noted that limitations in teacher education and gaps in knowledge of developmentally appropriate practice remain significant barriers to high-quality inclusion (Cade, Wardle & Otter, 2022).

The National Association for the Education of Young Children (NAEYC) emphasizes in its position statement on developmentally appropriate practice that educators must draw on child development knowledge and recognize what each child brings to the classroom (Copple & Bredekamp, 2020). NAEYC advocates a play-based approach grounded in whole-child development across social, emotional, physical, language, and cognitive domains (Cade, Wardle & Otter, 2022; Copple & Bredekamp, 2020). Papacek, Chai, and Green (2016) underscore that play is crucial for developing social and communication skills in both typically developing children and children with ASD in inclusive classrooms. Although the Individuals with Disabilities Education Act (IDEA) aims to provide inclusive education in the least restrictive environment, persistent gaps in educator knowledge about ASD can reinforce the belief that children with special needs do not belong in general education settings (Cade, 2023; Frankel, 2004; Sanz-Cervera et al., 2017).

Barriers to Including Children with ASD

Two public policies have most directly shaped

inclusive practice. The 1989 UN Convention on the Rights of the Child asserted that young children are entitled to special care, assistance, and full participation in inclusive early childhood programs (Frankel, 2004; United Nations General Assembly, 1989). The 1990 reauthorization and amendment of the Education for the Handicapped Act renamed it the Individuals with Disabilities Education Act (IDEA) and categorized autism as a developmental disability (DeMonte, 2010; Pennington et al., 2014). The 2004 Individuals with Disabilities Education Improvement Act further amended IDEA, emphasizing academic preparation that integrates children with disabilities into adult life and ensuring parental involvement (DeMonte, 2010). Despite these supports, significant barriers remain — a lack of knowledge about ASD and insufficiently trained educators continue to feed the notion that children with ASD should be separated into distinct programs. Additionally, parents of children with ASD tend to be isolated and marginalized in educational settings (Purdue, 2006; Urkmez et al., 2023; U.S. Department of Health and Human Services & U.S. Department of Education, 2015).

The U.S. Department of Health and Human Services (DHHS) and the U.S. Department of Education (DOE) (2015) joint policy on early childhood inclusion emphasizes that most children with severe disabilities can achieve positive outcomes in an inclusive classroom setting rather than in special education. However, implementing this joint policy faces a significant barrier due to educators' attitudes and beliefs about including children with special needs, especially children with ASD, instructing them, as well as the need to modify the environment (D'Agostino & Douglas, 2021; Khalifa et al., 2020; Steed et al., 2024). Additionally, socio-communicative deficits in social functioning and behavioral challenges can significantly impact behavior management strategies and best classroom practices. The level of engagement in classroom activities can influence social and emotional participation with peers and child-teacher interaction. Furthermore, environmental sensitivity to factors such as crowded classrooms, bright lighting, and loud noise can lead to challenging behaviors.

Theoretical Framework and ASD

Theoretical approaches to addressing the developmental needs of children with ASD are grounded in the behaviorist contributions of Pavlov,

Watson, and Skinner (Saracho, 2023). Skinner's operant conditioning gave rise to Applied Behavioral Analysis (ABA), a treatment widely used with children diagnosed with ASD that uses discrete trial and prompting to modify behavior through external reinforcement (Barton & Harn, 2014; Morris, Smith & Altus, 2005; Saracho, 2023). ABA is built on the principle that behaviors leading to positive outcomes will continue through reinforcement, while behaviors leading to unfavorable outcomes will diminish over time (Roane, Fisher & Carr, 2016; Sicile-Kira, 2014).

While behaviorism focuses on changing behavior through external rewards, constructivism centers on the developmental stage of children with ASD and their Zone of Proximal Development (ZPD) in a social context. Grounded in the work of Bruner, Vygotsky, and Piaget, constructivism emphasizes a play-based, child-centered approach to teaching and learning (Mooney, 2013; Saracho, 2023). This approach allows children with ASD to learn through exploration and discovery in social contexts with peers and adults — helping them develop mental structures from their experiences while allowing teachers to assess each child's ZPD (Jamero, 2019; Thompson, 2011; Ting & Yeo, 2019).

Piaget's theory emphasizes that young children construct mental schemas through assimilation, accommodation, and equilibrium (Cade, Wardle & Otter, 2022; Kim, 2015; Vaksalla & Hodshire, 2013). While developed primarily for typically developing children, his stage theory also applies to children with ASD. Vygotsky viewed teachers as facilitators and held that children — both typically developing and those with ASD — construct knowledge through social and active interaction with adults and peers within the ZPD (Bodner, 1986; Bodrova & Leong, 2007; Chand, 2023). The ZPD names the gap between what a child can do independently and what they can accomplish with the support of a peer, teacher, or parent (Bodrova & Leong, 2007; Mooney, 2013).

Bruner, like Vygotsky and Piaget, viewed children as constructing meaningful experiences through active social interaction while building on prior knowledge (Chand, 2023; Rannikmäe, Holbrook, & Soobard, 2020; Stapleton & Stefaniak, 2019). His instructional theory identifies four components: predisposition (active engagement in problem-solving), structure of knowledge (simplified, representational learning), optimal sequencing (scaffolded mastery of skills), and reinforcement (feedback and emotional rewards).

Because children with ASD can show low engagement and limited tolerance for instruction (Wilson & Landa, 2019), Bruner’s framework supports a guided play-based approach in which teachers scaffold learning experiences within the child’s ZPD (Berk & Winsler, 1995; Stapleton & Stefaniak, 2019).

The environment significantly influences how children construct knowledge. Bronfenbrenner’s bio-ecological

systems theory (B-EST) highlights the interaction between the environment and the developing child — interactions that can either hinder or promote participation (Piller & Pfeiffer, 2016; Saracho, 2023). As shown in Figure 2, B-EST illustrates the interplay between nature and nurture across nested systems: the microsystem, mesosystem, exosystem, macrosystem, and chronosystem (Bond & Hebron, 2016; Bronfenbrenner, 1994).

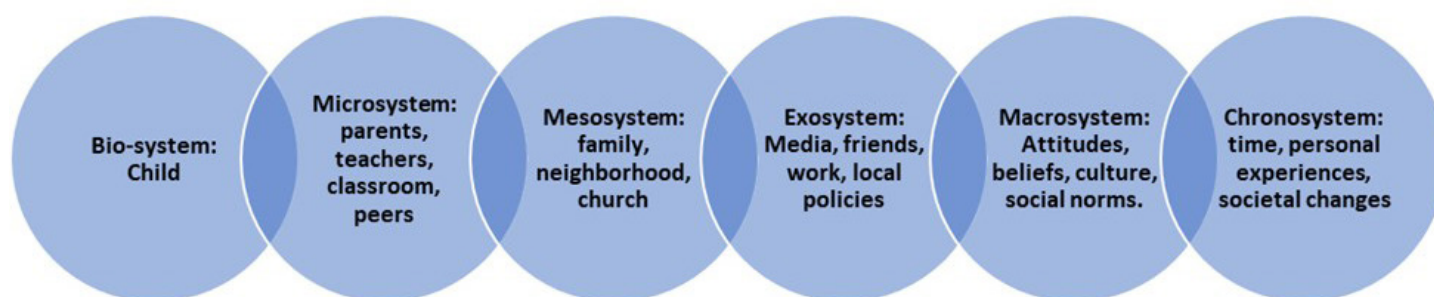


FIGURE 2 | The B-EST model of human development and the interaction between nature and nurture

The microsystem and mesosystem in B-EST are particularly relevant to inclusion because they emphasize the classroom environment and teachers’ beliefs about children with ASD. The microsystem aligns with the DHHS-DOE joint policy on early childhood inclusion, which highlights family involvement in children’s learning experiences and helps prevent the isolation and marginalization of children with ASD and their families. When teachers encourage children with ASD to interact with peers, they support socio-emotional and socio-communicative development. Together, the DHHS-DOE policy and the contributions of Bruner, Vygotsky, and Piaget support the growth of preschool children with ASD by combining a developmentally appropriate learning environment with constructivist methods of facilitation and learning.

Literature Review

Children with ASD can display socio-communicative deficits, repetitive behaviors, and a need for sameness in routines that may hinder classroom participation (Barton & Harn, 2014; Sicile-Kira, 2014). While ABA is commonly used (Roane, Fisher & Carr, 2016), emerging research highlights the value of a constructivist, play-based approach for meeting the individual needs of young children with ASD (Jamero,

2019; Thompson, 2011; Ting & Yeo, 2019). Both the classroom environment and teachers’ beliefs about including children with ASD are critical to providing developmentally appropriate, individualized practice — and to establishing the parent partnerships that allow children with ASD to benefit from guided play-based learning.

Papacek’s (2015) case study examined peer-mediated play with six children aged 5 and 6 diagnosed with ASD. Results emphasized the impact of modeling and guided interaction in enhancing exploration, play, and social engagement, and underscored the role of teachers in facilitating peer interaction and communication grounded in each child’s ZPD.

Similarly, Jamero (2019) drew on Vygotsky’s social constructivism in a qualitative study of nine children aged 2–5 years, observing developmental stages of play. Findings indicated that classroom experiences can either hinder or promote meaningful peer interaction, and that teacher modeling and scaffolding shape the learning experiences of children with ASD.

Although the DHHS-DOE (2015) policy holds that children with ASD can achieve positive outcomes in inclusive classrooms, Sanz-Cervera et al. (2017) found through an autism knowledge questionnaire administered to 866 pre-service teachers that pre-service teachers hold misconceptions about ASD and

lack sufficient knowledge. The authors recommend that teacher preparation programs adopt collaborative field experience and training to deepen pre-service educators' understanding of children with ASD.

D'Agostino and Douglas (2021) extended this work using a mixed-methods design with 81 pre-service teachers and two administrators. Pre-service teachers showed openness to evidence-based practice but expressed concern about behavior challenges grounded in misconceptions, while administrators questioned the adequacy of their preparation.

Khalifa et al. (2020) examined participation patterns of 54 preschool children with ASD and the environmental factors associated with them. Parents reported less control over unpredictable or sensory-rich community settings, and children's social-communication abilities were linked to participation across activities. Notably, Khalifa et al. did not examine participation patterns in the classroom environment — an important gap, given that the classroom is itself an extension of teachers' beliefs and the most direct setting in which inclusive practice plays out.

A developmentally appropriate environment is foundational to the growth of children with ASD (Johnson-Martin, Attermeier & Hacker, 2004). Yet significant barriers to implementing the DHHS-DOE joint policy remain, and the interactions among parents, teachers, children with ASD, and peers in the classroom can either hinder or promote participation. How the classroom environment shapes participation — including how it prevents the isolation and marginalization of children with ASD and their families — remains an under-examined question in preschool settings.

Purpose of the Study

The constructivist approach to teaching and learning is based on the theories of intellectual development by Jerome Bruner, Lev Vygotsky, and Jean Piaget. This approach emphasizes creating an inclusive classroom environment that encourages typically and atypically developing children, particularly children with ASD, to participate in various activities. The goal is to promote socio-communicative interaction for positive outcomes in an inclusive classroom (Piller & Pfeiffer, 2016; Sanz-Cervera et al., 2017; Saracho, 2023). It also focuses on a child-centered, play-based approach to meet the diverse needs of preschool

children with ASD (Jamero, 2019; Khalifa et al., 2020; Papacek, 2015; Ting & Yeo, 2019; Thomas, 2011). Given the increase in children with ASD attending preschool and the emphasis that most children with severe disabilities can achieve positive outcomes in an inclusive classroom setting rather than in special education (U.S. Department of Health and Human Services & U.S. Department of Education, 2015), the purpose of this exploratory multi-case study was to explore what approach preschool teachers are using to meet the individualized needs of children with ASD to achieve positive outcomes in an inclusive classroom and why they are using those approaches. A qualitative methodology was used to answer the following research questions:

1. What strategies do preschool teachers use to encourage social interactions between children with ASD and their peers in the classroom?
2. How are preschool teachers modifying the classroom environment to encourage the socio-communicative participation of children with ASD in classroom activities?
3. What strategies are preschool teachers using to promote and encourage the involvement of families of children with ASD in their children's learning experiences within the classroom?
4. What strategies are being used to support preschool teachers?
5. What professional development training do preschool teachers attend to help them understand and meet the individualized needs of children with ASD?

Significance of the Study

The study aimed to explore the strategies preschool teachers use to encourage social interaction and communication between children with ASD and their peers, how parent participation is promoted in inclusive classrooms, and the reasons behind those strategies. The data bridge the gap between constructivism — focused on the developmental stage of children with ASD — and the environment, which plays a crucial role in their development. Findings can help educational leaders and stakeholders in New Jersey and beyond understand and address barriers to implementing the DHHS-DOE joint policy on early childhood inclusion.

Method and Design

The study explored what strategies preschool teachers use to modify the classroom environment to encourage social interaction and communication between children with ASD and their peers, how parent participation is promoted in inclusive classrooms, and why such strategies are used. A qualitative exploratory multi-case study design was used, with semi-structured one-on-one audio-recorded interviews providing in-depth data on classroom practice. The study received IRB approval from the University of Phoenix. All participants received study information and signed informed consent before data collection.

Population

The State of New Jersey Department of Human Services Division of Family Development maintains a public list of all licensed childcare centers that participate in or have received a star rating from the Grow NJ Kids program. This list is available on their website. The aim of the Grow NJ Kids program is to enhance the quality of early care and learning for young children. An email was sent to 169 licensed childcare centers in Northern New Jersey participating in Grow NJ Kids, inviting them to participate in the study. Three childcare centers agreed to participate and provided their permission to recruit preschool teachers and directors. Table 1 shows a purposeful sample of four preschool teachers and three directors from three private childcare centers who agreed to participate in the study. Table 2 presents the number of preschool children aged 3 – 5 with Autism Spectrum Disorder (ASD) or who were awaiting a diagnosis at each center. Center A had a total of three children, consisting of two boys and one girl. Center B also had two boys, while Center C included one boy and one girl, bringing the overall total to seven children.

Participants’ years of experience, positions, and qualifications are shown in Table 1. They were informed that participation was voluntary and that there would be no penalty for discontinuing or declining to participate. The researcher had no prior knowledge of the preschool programs and had no connections with any of the participants. No direct funding was received for this research, and participants did not receive compensation.

Participants	Childcare center	Years of experience	Position	Qualifications
Jennifer	A	4 years	Lead Teacher	BA Recreation and Management
Zoey	A	3 years	Lead Teacher	None
Wanda	A	13 years	Director	BA English; AS Human Services
Emely	B	5 years	Lead Teacher	AS Early Childhood Education
Chuck	B	2 Years	Director	BA African Studies; MA Education
Amy	C	1 year	Lead Teacher	HS Diploma
Joanne	C	7 years	Director	MA Education

TABLE 1 | Teachers, directors, and their qualifications

Note: BA=Bachelor of Arts; MAED=Master of Art in Education; AS = Associates; MA=Master of Arts; HS=High School Diploma

Childcare center	Number of boys	Number of girls
A	2	1
B	2	
C	1	1

TABLE 2 | Number of 3- 5-year-old children with ASD

Data Collection

This study explored the strategies preschool teachers use to encourage social interaction and communication between children with ASD and their peers. It also aimed to investigate how parent participation of children with ASD is promoted in an inclusive classroom, as well as the reasons behind the use of such strategies. Data was gathered through in-depth semi-structured one-on-one interviews, which were recorded with participants’ consent. Participants were required to submit consent forms before data was collected. There were no classroom observations. Semi-structured one-on-one interviews with participants were approximately 60 minutes in length. A total of four preschool teachers and three directors

from three childcare centers participated in the study. The three childcare centers were participating in the Grow NJ Kids program but were not yet star-rated.

Data Analysis

Thematic and content analyses were used to examine the collected data. In the thematic analysis, each transcript was read and re-read to assign open and axial codes. This process helped identify patterns that led to the emergence of themes (Saldana, 2013). Axial coding was employed in the second cycle of coding to refine and categorize the open codes as needed and to further explore the development of themes.

In content analysis, each transcript was meticulously reviewed to systematically study the responses, extract relevant information, identify patterns, and quantify the frequency of specific words and phrases that reflected these patterns. This process aimed to uncover descriptive regularities and significant trends that inform and address the research questions (Merriam & Tisdell, 2016; Saldana, 2013).

Results

The study aimed to explore the strategies that preschool teachers employ to promote social interaction and communication among children with Autism Spectrum Disorder (ASD) and their peers. Additionally, it sought to investigate how parental involvement for children with ASD is encouraged in an inclusive classroom, along with the reasons behind the use of such strategies. Teachers and directors explained how the classroom environment and modifications in the lesson plan and activities guided social interaction and communication. Directors also explained how systemic barriers create obstacles in addressing the needs of children with ASD.

Data analysis revealed four key themes: intentional facilitation through guided, play-based cooperative interactions; child-centered, responsive differentiation; collaborative teamwork with perceived gaps; and a lack of support, highlighting the need for improved professional development focused on specialized content. Content analysis was utilized to quantify, analyze, and uncover relationships among specific words or phrases. Texts were examined, assigned codes, and categorized to identify patterns and themes within the data (Prasad,

2008; Stemler, 2015). Data derived from thematic and context analysis were organized and compared with supporting excerpts, which provided a more comprehensive understanding of each theme, which helped to answer the research questions.

Theme 1: Intentional Facilitation Through Guided, Play-based Cooperative Interactions

The purpose of Research Question 1 was to gain a deeper understanding of the strategies preschool teachers implement to promote social interactions between children with ASD and their peers in the classroom. Overall, participants in the study explained that they actively guide the children to engage with their typically developing peers. Teachers explained that they use shared interests and prompting to foster inclusion. Figure 3 illustrates the relationship among specific words or phrases, where engagement strategies were mentioned six times, followed by social interaction and communication development, which were mentioned five times. All participants explained that they emphasize inclusion, not separation, through sustaining peer interaction. Emely, a preschool teacher of 4-year-olds, illustrated this view stating:

So, definitely through work time and when they have an hour of free play in those areas, I try to push them into a block setting where they are able to play with other friends. I'll say Oh, why don't you all build this together? More like try to get them to work as a team. Oh, why don't you ask so and so for this block, or how can we make this house bigger, or something like that. Or during a large group setting where we were doing a balloon competition the other day, like, okay, so now it's your turn, give it to her, let's take turns. That way, they can actually understand taking turns. Just a few things, like a larger group setting, or like in a smaller group setting, but with friends, so they can interact with other friends.

Amy, a preschool teacher of 3-year-olds, also illustrated this view by stating:

So, for example, music. If we were all as a group going to do music, I would make sure that they have an instrument or something that they can use to make them feel that they are engaged with the other children, and I would have them imitate actions such as let's clap our hands. So, it's small things like that that would make them

feel like they are participating with us, which they like because they both like music.

Amy continued to explain:

So, going back to the chicken, the little girl with that situation tried to give the boy who is autistic the chicken. He ate it because he recognized it was food, but then threw it and tried to walk away. So, I said, “J,” come back, let’s make cupcakes for her. So, I try to engage with them and try to get them to play together so that he can see that he can play with them and not go off by himself and do his own thing. So, I try to bring it together more for them, but you know, it’s a little hard.

Emily and Amy’s responses center on intentional facilitation of peer interaction and cooperative play through structured guidance and prompts. Emily described actively guiding children to engage with peers (e.g., prompting teamwork, taking turns). She uses both small-group and large-group activities to promote these skills. The focus is on teaching social rules (turn-taking, collaboration) and creating opportunities for engagement. Amy explains intentionally using music to promote participation, inclusion, and engagement. She focused on making the child with ASD feel included in group activities. Amy further described how she used intentional intervention to extend and sustain peer interactions,

even when the child initially disengages. She recognized an opportunity for social connection instead of withdrawing.

Chuck, a childcare program director, also illustrated this view by stating:

So, one, they’re socializing, and they’re learning in the same group, that’s one. So, they’re at the tables together, there’s no separation throughout the day with him or other children his age. So, we don’t separate him because of his cognitive ability or inability. At this stage, we separate based on age. So, I have my early 2s and 3s in one group, older 3s and 4-year-olds in another group. That group typically can read, I mean, they know word recognition, they know colors, they know numbers, and their name. So, we don’t want them doing activities that are a year behind where they’re performing. And so, because he’s in a group with children his age, they’re learning at the same rate he’s learning.

Chuck highlights that children socialize and learn together without separation based on ability. He explained that the differentiated grouping is done by age, not diagnosis. This approach ensures that the autistic child participates in developmentally appropriate activities alongside peers.

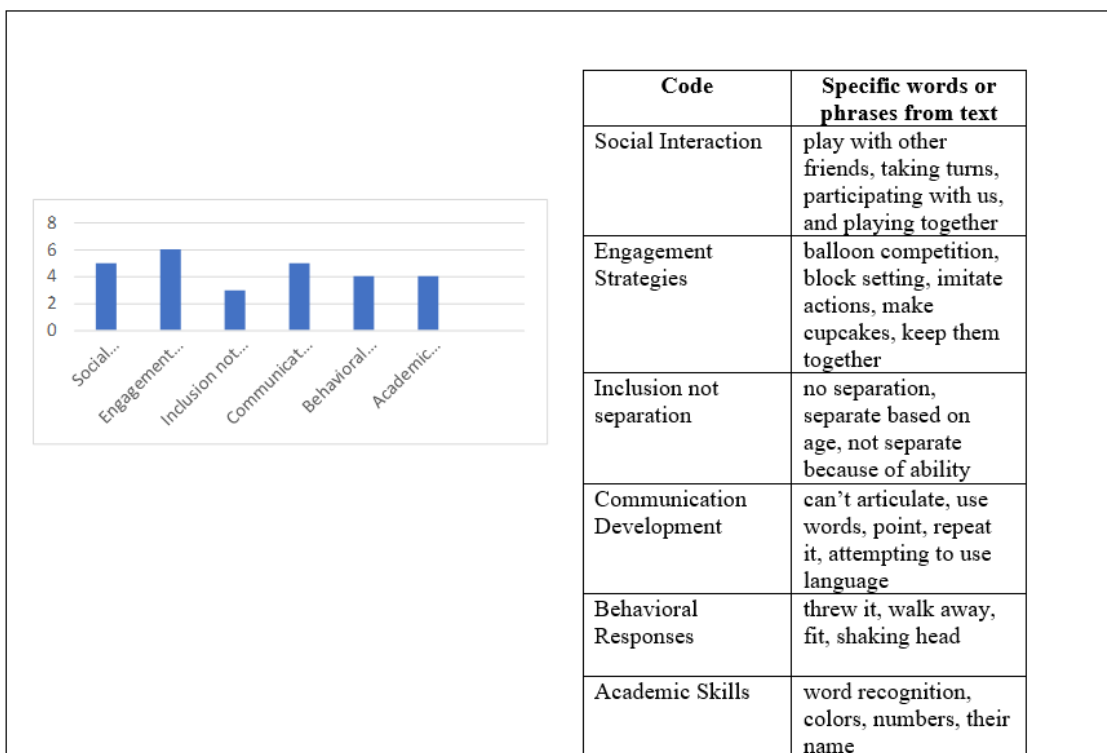


FIGURE 3 | Frequency of specific words and phrases from text with engagement strategies mentioned six times

Theme 2: Child-centered, Responsive Differentiation

Research Question 2 examined how preschool teachers adjust the classroom environment to enhance the socio-communicative participation of children with ASD in activities. Participants described differentiated practices and individualized accommodations to support engagement and learning. They also described prioritizing children’s autonomy within an inclusive environment that respects children’s sensory sensitivities. Figure 4 depicts the connections among specific words and phrases, with engagement strategies mentioned five times. This is followed by inclusion and no-separation, adaptation to interests, and grouping by ability and needs, all of which were mentioned four times. Wanda, a childcare director, explained accommodations based on autonomy and sensory triggers by stating:

So, if there’s a painting project and the two children, they can’t use the paint because the paint is a trigger for them. So, those children are allowed to go to let’s say that one likes the kitchen area, the other one likes the block area, those children are allowed to go to those areas, and she is keeping an eye on them in those areas while working with the children. She is

not making them sit there and torturing them, so to speak, by making them do that. She allows them to go and explore and do what they like within reason.

Wanda continues to explain that:

So, what she does is when she does projects, she doesn’t separate the projects. She tries to do projects that they all may like when they go to the centers where they all may play with each other. It doesn’t always work, but they do find themselves communicating at one point or another.

Joanne, a childcare director, explained differentiated practices and lesson plan modifications by stating:

In some cases, it’s grouping towards ability, and in some cases, it’s towards needs, right? And which teacher will work better with a certain group, and it’s not a fixed group, so that can change from any given day or time, or according to what the activity is, what the materials are going to be, so it’s not a fixed group that we can’t navigate. We try not to label children, of course, but we just consider children in the lesson planning and the materials that we are going to use, and those are fluid groupings.

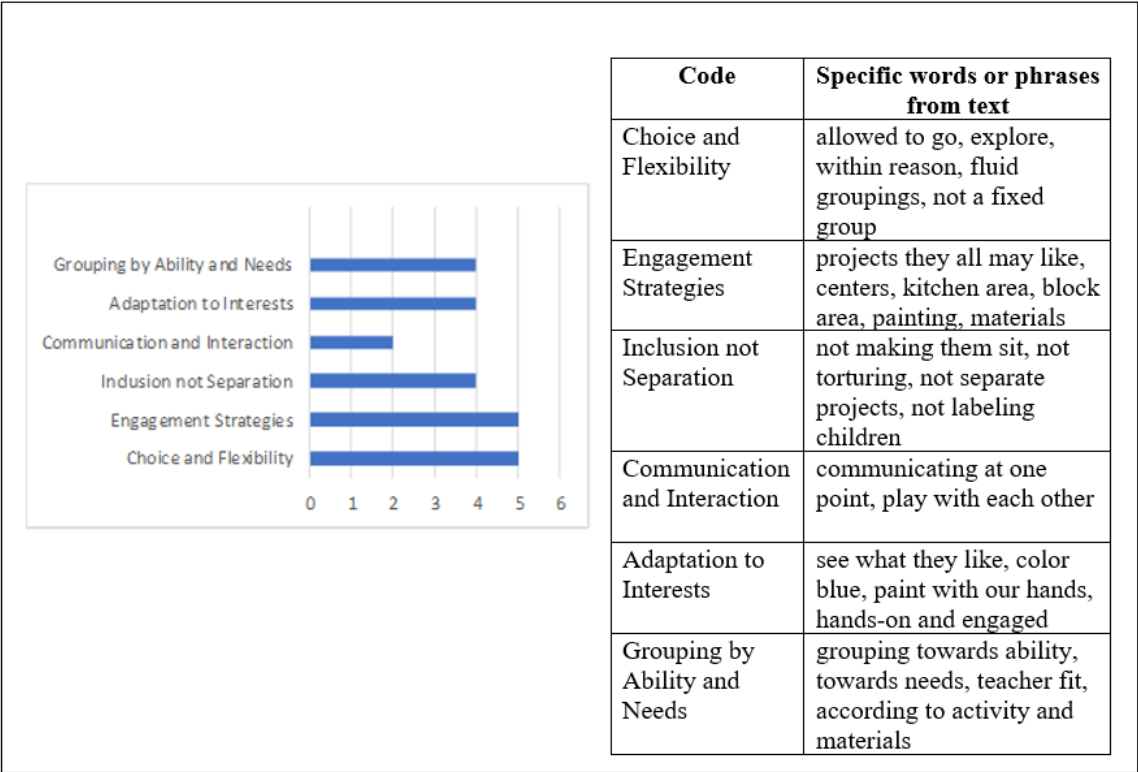


FIGURE 4 | Frequency of specific phrases from text with engagement strategies, choice, and flexibility mentioned five times

Amy, a preschool teacher of 3-year-olds, also described individualized accommodations to support engagement and learning by stating:

So, say that we are learning about the letter “A,” the project would be, say, using some cereal and gluing it to trace and make the letter “A.” Where they won’t be able to sit down and do that, then I would trace out the letter “A” and have them stand on the side and paint, because they like to paint and use their hands and stuff like that, where they are more hands-on and engaged, to keep them focused to do stuff that they like. Really, it’s more about paying attention to see what they like to do throughout the day. If they like the color blue, then let’s use blue paint, and try to paint with our hands, stuff like that. So, they would be learning the same thing, but it would be a little different to accommodate what works best for them.

Participants discussed how they adapt the classroom environment by thoughtfully considering the individual differences of children with ASD in their lesson planning and materials. They explained that these adaptations are based on the children’s preferences and sensory interests, and they emphasize hands-on activities tailored to meet each child’s unique needs.

Theme 3: Collaborative Teamwork with Perceived Gaps

The microsystem in the B-EST model aligns with the joint policy of the Department of Health and Human Services (DHHS) and the Department of Education (DOE) on early childhood inclusion. This policy emphasizes the importance of involving families in their children’s learning experiences. Therefore, the purpose of Research Question 3 was to identify the strategies that preschool teachers use to promote and encourage the participation of families with children diagnosed with Autism Spectrum Disorder (ASD) in their children’s learning experiences within the classroom. Figure 5 illustrates the connections between specific words and phrases, with communication mentioned six times. Following this, parent participation, collaboration, challenges and barriers, and supportive strategies were each mentioned four times. Wanda, a childcare director, described the challenges of parent communication and the gap in support services between the private and public sectors by stating:

Okay, the teachers continuously talk to the parents, but it’s hard. It’s really hard. Even with the ones who have gotten better, I give the credit to my teachers. I don’t even know

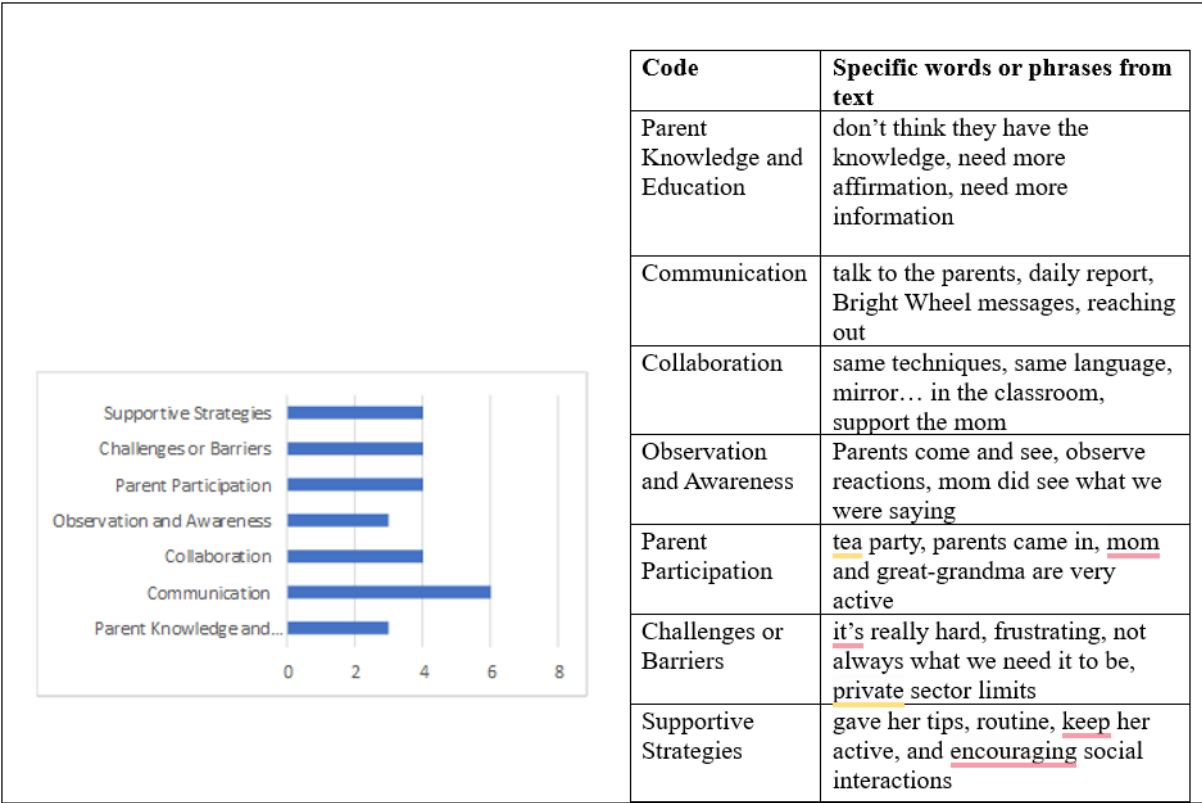


FIGURE 5 | Frequency of specific phrases from text with communication mentioned six times

what the parents are doing because they're constantly going back and forth with them. And it's like even though we need the children, it has gotten to the point where you say to yourself, you know what, they are social workers and things of that nature inside the public school that are not allowed to come inside the private sector but if they go to the public school they will be able to get the sort of help that they may need. We encouraged it, especially for certain children who are not really there.

Joanne, a childcare director, echoes Wanda's view by stating that:

From us, it looks like plenty of reaching out to them. What it looks like from them to us is not always what we need it to be. A lot of times, parents don't understand that at these early ages, it is very crucial and absolutely an opportunity to support something as a preventative measure.

Chuck, a childcare director, describes ongoing communication and involvement by stating:

For this child, mom and the great-grandma are very active. So, parent participate looks like them asking how was his day? You know, throughout the day, we'll send feedback to the mom telling her that he's having a good day, So, we give them a daily report when they come and pick him up because they want to know, and we also send it in writing through Bright Wheel. We can send them messages through our Bright Wheel account.

Participants emphasized the significance of collaborative partnerships to effectively support children with ASD. The importance of ongoing communication between teachers and parents was also highlighted, along with a comparison of limitations in the private sector versus the public sector.

Theme 4: Lack of Support and the Need for Improved Professional Development Focused on Specialized Content

The purpose of Research Questions 4 and 5 was to identify the strategies used to support preschool teachers and to explore the professional development training they participate in to better understand and address the individualized needs of children with

ASD. All participants noted a lack of support and a lack of professional development training. Figure 6 shows the connections between specific words and phrases, highlighting the lack of support and training limitations mentioned five times, followed by the issues of professional development (PD) and previous PD experiences. When asked to identify strategies that are used to support preschool teachers, Joanne, a childcare center director, explained that:

So, again, I wish that I could tell you that there are lots of training available, but there is not, and if there were, it's not free, and it's not necessarily good training around particular needs, or you know, it's something that is topical, so there isn't a lot of in-depth training. And even the CDA, those things are broad, and this is unfortunate, too. So, whether it's children on the spectrum or it's looking like it's going to be behavioral.

Joanne continues to state that:

So, a lot of the training that is out there is not necessarily around a child with a diagnosis, because this is such a grey area, because this is all supposed to be considered developmental, and children will grow or be supported out of it. So, I wish I could tell you that there are tons of strategies, and that all of these things are readily available, but there are none.

Amy, a preschool teacher of 3-year-olds, illustrated this view by stating:

So, we had online training. So, before the little girl came in, we were told that she is on the spectrum and that we should take the online training. It was on the computer. It was an hour, and we took that, but that was pretty much it. We were all just thrown in there.

When asked to explain the professional development training they participate in, Emely, a preschool teacher of 4-year-olds, stated:

To be honest, no one is equipped to give that professional development unless she (the director) gets it from outside, which I have yet to see, to be honest.

Zoey, a preschool teacher of 4-year-olds, stated:

Maybe they'll kick it up a little bit now that they see it's more and more kids who are on the spectrum. That may be one of the things I talked to my director about, like maybe you

need to go into this a little bit further, so we can have professional development on these things that we're going to deal with in life. Yeah, we're taking from those kids, definitely.

Joane, a childcare center director, stated:

We all, as mandated, we've all taken, you know, there's a list that the state gives us. Again, we've absolutely met all of those. The High Scope training, they've done all of those; there's been some around feeding, there's been some around nutrition, some around safety, so all of those. But again, these have nothing to do with

the development and the needs of the children in the classroom. There are absolutely the parameters of what needs to be, but they are not specific to the needs and development of children.

Participants highlighted the lack of adequate pre-service training for working with children with ASD and advocated for improved professional development on autism. They also noted the limited internal resources available for professional development on ASD.

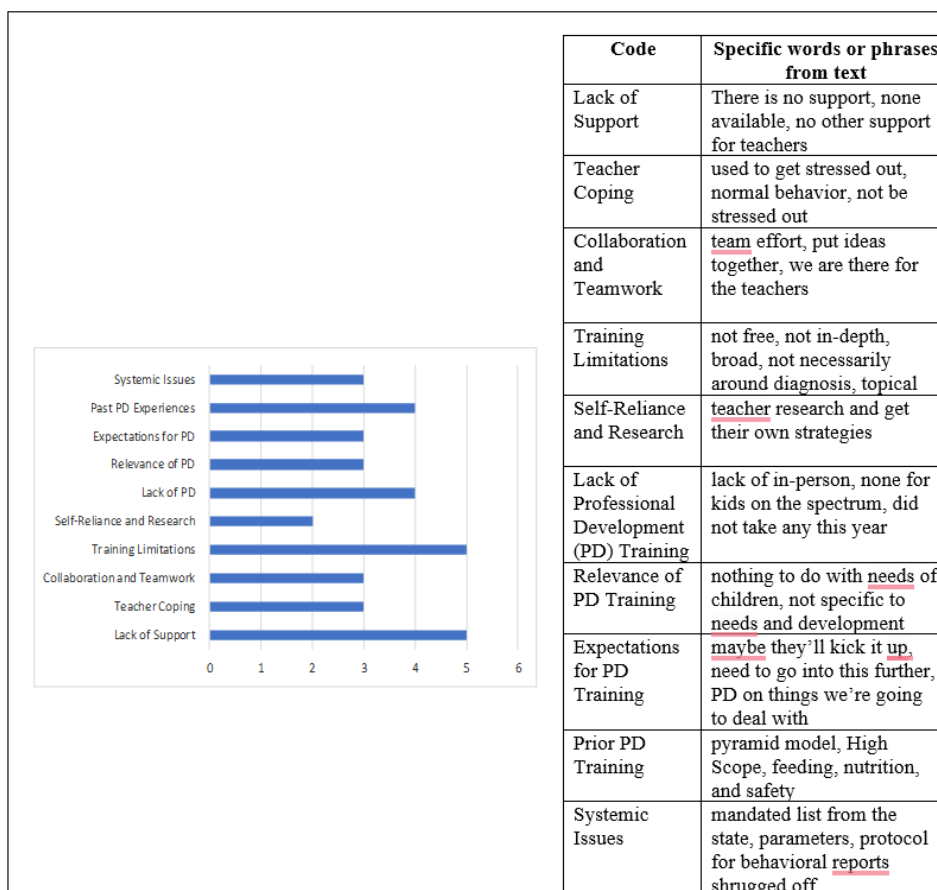


FIGURE 6 | Frequency of specific words and phrases from text with training limitation and lack of support mentioned five times

Discussion

These in-depth discussions offered valuable insights into the strategies preschool teachers employ to foster social interaction and communication between children with ASD and their peers. They also highlighted challenges related to classroom support and parent participation. The results indicated that, despite having limited qualifications, teachers are making an effort to create an inclusive classroom in

the least restrictive environment (LRE) for children with autism spectrum disorder (ASD). This may be attributed to preschool teachers' caring and nurturing approach, as well as the belief that young children learn best through play. Findings also revealed that many of the preschool teachers lack training and knowledge about ASD, which can lead them to believe that children with ASD do not belong in their childcare centers (Cade, 2023; Frankel, 2004; Sanz-Cervera et al., 2017).

Despite the lack of knowledge about ASD, results suggested that preschool teachers employ a guided, play-based cooperative approach to promote and maintain social interaction and peer engagement. They also encourage verbal communication, model language, and check for verbal imitation among the children. Additionally, the findings highlight that teachers use flexible grouping strategies with differentiated activities and modified lesson plans to support children with ASD. This approach aligns with Vygotsky's belief that teachers should adapt their methods by presenting information in ways that encourage each child's development (Bodrova & Leong, 2007; Cade, 2023).

The microsystem and mesosystem in Bronfenbrenner's bio-ecological systems theory (B-EST) of human development highlight the interaction between the environment and children's participation, emphasizing how this interaction can either hinder or promote participation (Piller & Pfeiffer, 2016; Saracho, 2023). The B-EST model also highlights the importance of not only the classroom environment but also parent engagement in promoting inclusion. Results indicated challenges in parent engagement, particularly highlighted by Zoey, Wanda, and Joanne, who reported difficulties in maintaining regular communication with parents. Zoey noted that parents may require more information and education about autism spectrum disorder (ASD). Meanwhile, Wanda and Joanne described their continuous efforts to reach out to parents, yet they felt that the levels of engagement and response from parents did not meet their expectations. This may be linked to limitations in local community support within the mesosystem of the B-EST model, which can create gaps in parental understanding about the critical importance of early childhood intervention and inclusion.

Despite the joint policy on early childhood inclusion by the U.S. Department of Health and Human Services (DHHS) and the U.S. Department of Education (DOE) in 2015, which emphasizes that most children with severe disabilities can achieve positive outcomes in inclusive classroom settings rather than in special education, results suggest that there are still significant challenges. Although private childcare centers are striving to implement inclusive early care and learning through a constructivist approach, they face limitations in resources and professional development training compared to public schools serving 3 and 4-year-old children. This disparity

leads to gaps in support services between the private and public sectors. Wanda and Joanne highlighted this issue when they discussed the need for external support and the barriers that private childcare centers encounter. The disparity in support services between private childcare centers and public schools may be related to the Race to the Top initiative and the Preschool For All Initiative Act (PFAI). These initiatives require school districts to form partnerships with certain private early childhood programs that serve preschool children. This has led to the integration of state standards and a shift in teaching methods, adopting a more traditional K–12 approach to education in preschool classrooms (Cade, Wardle, & Otter, 2022; McGuinn, 2015; U. S. Department of Education, 2016).

Conclusion

The Individuals with Disabilities Education Act (IDEA) aims to provide inclusive education in the least restrictive environment (LRE) for children with Autism Spectrum Disorder (ASD). However, a significant barrier is the lack of knowledge among educators regarding ASD. Educators may struggle when working with young children with ASD due to perceived notions that autistic children are different, that their behavioral characteristics are abnormal, and can be problematic. Chuck, a childcare director, illustrated this view by stating:

So, every child that is autistic, I've learned, doesn't create behavioral problems, but they may have barriers that prevent them from learning like everyone else, but it doesn't always constitute a behavioral problem. And I think, that's what I had to learn because when "C" transferred to me, I was told that he had behavioral issues because he's autistic. That's what was said to me. Because he's autistic, he has behavioral issues. That's not true, and I had to unlearn that because they don't have behavioral issues because they're autistic. They may have difficulty learning, they may have difficulty following instructions, and so you have to change the language so that you change the approach.

The joint policy on early childhood inclusion issued by the U.S. Department of Health and Human Services (DHHS) and the U.S. Department of Education (DOE)

in 2015 emphasizes that most children with severe disabilities can achieve better outcomes in inclusive classroom settings rather than in special education. Findings suggest that, despite lacking qualifications and knowledge about children with ASD, preschool teachers worked hard to create an inclusive environment; however, professional development training and resources are needed. They worked towards adopting a constructivist approach to teaching and learning by enabling children with ASD to engage in guided, play-based exploration alongside their peers and adults. This approach provided opportunities for meaningful experiences through active social interactions, allowing children to connect with both their peers and adults (Chad, 2023; Rannikmäe, Holbrook, & Soobard, 2020; Stapleton & Stefaniak, 2019). This aligns with Vygotsky's perspective on the importance of including children with ASD in environments with typically developing children. Such interactions help children construct knowledge and understand their experiences and the world around them through social engagement within their zone of proximal development (ZPD) (Bodner, 1986; Bodrova & Leong, 2007; Chad, 2023).

While Applied Behavioral Analysis (ABA) is a commonly used treatment for children with ASD, the study suggests that the constructivist approach in the least restrictive environment (LRE) can effectively support a child-centered learning approach. The findings also highlight the need for professional development training and resources to help implement the joint policy and to bridge the gap in support services between private childcare centers and public schools. Addressing these needs can also help overcome barriers related to educators' attitudes and beliefs about including children with ASD in the classroom environment (D'Agostino & Douglas, 2021; Khalifa et al., 2020; Steed et al., 2024).

Limitations and Further Research

While the contributions of this multi-case study are limited by the small sample size from private childcare centers in New Jersey, the findings may still be transferable to other childcare centers. While many parents can begin to observe concerns as early as 2 years of age, and a checklist for autism in toddlers can be initiated at 18 and 24 months (Barton & Harn, 2014), another potential limitation is that the study

only examined the classroom practices of preschool teachers. Examining the classroom practices of children ages 18 – 24 months is a potential area for future research.

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Shaping Career Momentum: Leadership in Action During Performance Calibration Cycles

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Abstract

Performance calibration processes are commonly designed to ensure consistency in employee evaluation and advancement decisions. However, these recurring discussions function as leadership systems through which organizations translate performance narratives into signals about opportunity, recognition, and career progression. This paper examines performance calibration cycles as structurally embedded decision environments that shape career momentum, institutional trust, and leadership pipelines. Drawing on research in organizational justice, managerial accountability, psychosocial work environments, and moral decision-making, the analysis explains how time pressure, comparative evaluation, and incomplete information can compress judgment within calibration settings. Over repeated cycles, small interpretive differences accumulate into structural patterns influencing career advancement and perceptions of fairness across organizations. When calibration systems incorporate transparent criteria, evidence-based reviews, and distributed accountability, they can moderate interpretive distortion and strengthen institutional credibility. Reframing calibration as leadership in action positions performance system design as a strategic capability for sustaining career autonomy, organizational wellness, and institutional resilience.

Introduction

Organizations often treat performance calibration as an administrative necessity. In practice, it functions as a recurring leadership architecture that shapes career momentum, institutional credibility, and long-term

opportunity distribution. Contemporary workforce research documented sustained increases in burnout, declining perceptions of career autonomy, and weakening institutional trust across organizational contexts (Kniffin et al., 2021; Shahidi et al., 2022). While external pressures such as workload intensity

and economic volatility were frequently cited as contributing factors, internal leadership systems also shaped how employees interpreted opportunity and advancement over time. Performance management processes functioned as visible institutional signals influencing perceptions of legitimacy and belonging (Colquitt et al., 2001). Among these systems, performance calibration cycles represented recurring leadership decision environments in which contribution and readiness were translated into career signals that influenced compensation, promotion, and development access. These recurring evaluation environments therefore operated not merely as administrative checkpoints, but as institutional mechanisms that shaped how employees understood the relationship between effort, recognition, and advancement.

Performance calibration systems operated as compounding mechanisms. Small evaluative judgments accumulated across cycles and influenced long-term career momentum and leadership pipeline composition (Son Hing et al., 2023). Research in managerial accountability demonstrated that time pressure and incomplete information increased reliance on compressed judgment processes, while structured accountability improved decision precision (Maske et al., 2021). Contemporary moral decision-making scholarship further indicated that organizational framing and contextual pressure shaped how evaluative thresholds were interpreted within institutional settings (Kouchaki & Smith, 2025). Calibration outcomes therefore reflected interaction between cognitive constraints and system architecture rather than individual intent alone. Over repeated cycles, interpretive compression shaped advancement trajectories and institutional patterns of opportunity distribution, reinforcing the structural nature of career momentum.

Reframing performance calibration as a structural leadership system rather than a procedural task positioned evaluation sessions as a strategic lever for sustaining institutional credibility and organizational wellness. Employees evaluated institutional trust through recurring system interactions rather than episodic leadership acts (Kniffin et al., 2021). When calibration systems were transparent, evidence-anchored, and reflective, they reinforced perceptions of fairness, autonomy, and advancement predictability (Shockley et al., 2021); however, when left unstructured, cumulative ambiguity

shaped confidence in institutional opportunity systems over time. This paper was written for senior executives, human resource leaders, talent management professionals, and organizational designers responsible for performance evaluation architecture. Its purpose was not to assess individual leadership character, but to examine how recurring calibration environments shaped autonomy, engagement, and long-term institutional resilience. Understanding calibration as leadership in action positioned performance system design as a structural determinant of organizational wellness, belonging, and sustainable leadership development (Son Hing et al., 2023).

Career Autonomy, Institutional Trust, and Internal Leadership Systems

Workforce research documented elevated burnout, diminished perceptions of career autonomy, and declining trust in institutions intended to support professional growth (Kniffin et al., 2021). Longitudinal evidence demonstrated reciprocal relationships between psychosocial work environments and burnout, suggesting that institutional ambiguity and perceived inconsistency reinforced cumulative strain over time (Shahidi et al., 2022). Although macro-level explanations frequently emphasized workload intensity and labor market volatility, empirical research indicated that employees' lived experiences were equally shaped by internal leadership systems governing how performance and opportunity were interpreted across recurring cycles. These systems influenced not only short-term morale but enduring perceptions of institutional credibility and advancement logic.

Recent scholarship demonstrated that perceptions of procedural fairness and advancement clarity were associated with engagement, retention intentions, and organizational commitment (Kim & Beehr, 2021; Son Hing et al., 2023). Performance management systems therefore operated as structural environments through which employees evaluated institutional legitimacy and opportunity predictability rather than as neutral administrative tools. Institutional trust developed through repeated interaction with processes perceived as transparent, consistent, and evidence-based (Kramer & Tyler, 1996). Organizational

justice research further established that procedural clarity predicted sustained cooperation and confidence in authority, reinforcing the trust-relevant nature of evaluation design (Colquitt et al., 2001). Together, this body of literature positioned calibration processes as institutional infrastructures shaping how advancement systems were interpreted and experienced.

Despite this structural influence, performance systems were often treated as compliance mechanisms rather than recurring sites of leadership enactment. Leadership was exercised not only in strategic decision forums but in routine evaluative discussions where interpretation shaped opportunity distribution and institutional meaning (Kouchaki & Smith, 2025). Calibration conversations translated organizational values into lived employee experience, signaling what forms of contribution were recognized and rewarded. Because these judgments accumulated across cycles, evaluation architecture carried consequences that extended beyond ratings to influence long-term perceptions of fairness, belonging, and institutional coherence.

Conceptual Framework and Analytical Approach

This paper employed a theory-building synthesis approach integrating contemporary research across performance management, organizational justice, managerial accountability, and moral decision-making. Performance calibration cycles were examined at the intersection of evaluative design, managerial cognition, and institutional signaling, positioning them as structurally embedded leadership systems rather than isolated administrative practices. Evaluation systems operated as socially embedded processes shaping perceptions of fairness, recognition, and advancement logic (Shockley et al., 2021), and employees interpreted these recurring interactions as indicators of organizational priorities and institutional integrity (Kniffin et al., 2021). Leadership was therefore conceptualized as judgment enacted within routine evaluative environments rather than episodic intervention, reinforcing the structural framing established in prior sections.

Within this framing, decision-making scholarship offered explanatory precision regarding how judgment operated under constraint. Research demonstrated

that under time pressure and informational ambiguity, evaluators relied more heavily on compressed reasoning processes, whereas structured accountability mechanisms improved judgment consistency and reduced distortion (Maske et al., 2021). Contemporary moral cognition research further indicated that organizational context influenced how responsibility, fairness, and evaluative thresholds were interpreted within institutional settings (Kouchaki & Smith, 2025). Calibration cycles frequently replicated these constrained conditions. By integrating scholarship on institutional trust, psychosocial work environments, and managerial accountability, this framework conceptualized calibration as an infrastructural leadership process through which routine judgments accumulated into structural career patterns and influenced organizational wellness over time (Shahidi et al., 2022; Son Hing et al., 2023).

Performance Calibration Cycles as Leadership Systems

Performance calibration cycles were designed to promote alignment and consistency across evaluative decisions. In practice, they represented compressed leadership moments in which months of performance were translated into comparative judgments under time constraints and competing priorities. Employees interpreted these discussions as signals of institutional logic, particularly regarding how contribution was weighted and advancement determined (Kniffin et al., 2021). Because calibration outcomes influenced compensation, promotion, and development access, they functioned as structural inflection points in career trajectories and warranted analysis as institutional governance mechanisms rather than routine administrative reviews.

The cumulative nature of calibration decisions amplified their institutional impact. Small evaluative distinctions, when repeated across cycles, accumulated into meaningful differences in advancement velocity and opportunity distribution (Son Hing et al., 2023). Variation in comparative framing influenced long-term trajectory patterns, particularly within competitive talent environments (Shockley et al., 2021). Calibration conversations occurred at the intersection of judgment, incomplete information, and organizational constraint—conditions under which cognitive narrowing was likely. (Kouchaki

& Smith, 2025; Maske et al., 2021). These recurring dynamics reflected features embedded within system design rather than isolated instances of individual decision error, reinforcing the structural basis of career momentum.

Group processes further intensified narrative compression within calibration environments. Perceived asymmetry in scrutiny shaped downstream assessments of fairness and legitimacy (Colquitt et al., 2001; Son Hing et al., 2023). Within these settings, narratives presented with greater clarity or confidence were processed more efficiently, whereas less structured accounts required additional justification. Over repeated cycles, these interaction patterns accumulated into structural differences in advancement outcomes. When calibration design incorporated structured evidence review and distributed accountability, cumulative distortion was moderated (Maske et al., 2021); when left informal, interpretive compression influenced the long-term composition and credibility of leadership pipelines. These dynamics clarified why calibration architecture functioned as a determinant of institutional resilience rather than merely an evaluative tool.

How Judgment Distortions Shape Career Momentum

Within calibration conversations, leadership judgment followed predictable patterns when structure and evidence were limited. Under pressure and ambiguity, evaluators relied more heavily on salient examples and narrative coherence, increasing dependence on episodic information (Kouchaki & Smith, 2025; Maske et al., 2021). Comparative evaluation intensified this tendency, as individuals were assessed relative to peers rather than against stable criteria (Son Hing et al., 2023). When discussions lacked structured evidence anchoring, interpretation shifted toward perceived readiness signals rather than longitudinal contribution data. These cognitive conditions generated interpretive asymmetries that were rarely visible in a single cycle but accumulated over time.

Although subtle in any one discussion, these distortions shaped advancement patterns across repeated evaluations. Small differences in emphasis, such as privileging recent visibility over sustained impact, compounded across cycles and influenced advancement velocity and leadership pipeline

representation (Son Hing et al., 2023). Documented narratives carried forward into succession planning and compensation decisions, reinforcing earlier interpretive framing. Career trajectories were therefore influenced less by isolated ratings and more by cumulative narrative reinforcement embedded within recurring system interactions.

At the institutional level, calibration systems functioned as translation mechanisms through which recurring judgments became structural opportunity patterns. Employees evaluated opportunity distribution based on perceived consistency between contribution and advancement signals (Kniffin et al., 2021). When narrative compression persisted across cycles, opportunity flow became uneven even in the absence of explicit intent. Over time, these dynamics affected not only individual career momentum but also the composition and credibility of leadership pipelines. Judgment embedded within routine calibration processes thus exerted compounding influence on institutional resilience.

Implications for Career Autonomy and Institutional Trust

Career autonomy reflected employees' perceived ability to influence professional trajectories within institutional structures. Psychosocial work environment research indicated that clarity, fairness, and perceived support moderated strain and shaped burnout trajectories over time (Shahidi et al., 2022). When evaluation systems produced inconsistent or opaque advancement signals, employees reported diminished confidence in their capacity to shape outcomes, reinforcing reciprocal strain patterns within the work environment. Calibration clarity therefore functioned not only as a procedural fairness concern but as a determinant of perceived agency within professional pathways.

Institutional trust operated at a broader systemic level, emerging through perceptions of legitimacy and procedural consistency (Kramer & Tyler, 1996). Fairness within evaluation systems was associated with engagement, thriving, and organizational commitment (Kim & Beehr, 2021; Son Hing et al., 2023). Repeated exposure to ambiguous advancement logic gradually shaped employee assessments of institutional reliability. When interpretive compression persisted across cycles, ambiguity

accumulated into skepticism regarding advancement structures, weakening confidence in institutional coherence. Calibration design therefore influenced not only individual perceptions but the durability of trust in organizational governance.

Beyond individual autonomy and trust, recurring calibration dynamics shaped collective perceptions of belonging and opportunity flow. Employees interpreted institutional care through patterned system interactions rather than episodic messaging (Kniffin et al., 2021). When evaluation processes were transparent, consistent, and evidence-based, they reinforced psychological safety and confidence in internal mobility systems. When advancement asymmetries accumulated, leadership pipeline composition and perceived inclusivity were affected. As a central gatekeeper of progression, performance calibration functioned as an infrastructural determinant of organizational credibility and long-term leadership resilience.

Leadership Practices That Protect Clarity and Momentum

If calibration functioned as infrastructural leadership, then addressing evaluative compression required structural intervention rather than awareness alone. Managerial accountability research demonstrated that decision quality improved when evaluation environments incorporated formalized criteria and distributed evidence structures (Maske et al., 2021). Structured calibration anchored discussions in documented performance patterns rather than retrospective recall, reducing cognitive load and improving consistency across comparative judgments. Clear articulation of advancement criteria further strengthened perceived fairness by aligning evaluative outcomes with transparent standards, reinforcing coherence between contribution and recognition.

Intentional friction within calibration environments such as prompted justification, comparative evidence review, and structured deliberation protocols – moderated reliance on compressed reasoning without constraining managerial discretion (Maske et al., 2021). Cumulative pattern analysis across cycles improved institutional awareness of advancement velocity and opportunity distribution trends (Son Hing et al., 2023). When organizations examined aggregate outcomes alongside qualitative discussion patterns,

alignment between institutional values and enacted practice became more visible. Leadership practices that protected clarity and momentum therefore operated at both conversational and architectural levels, reinforcing institutional credibility through consistent translation of contribution into opportunity structures.

Conclusion

Leadership within organizations often revealed itself in routine evaluative moments that shaped long-term opportunity structures. Judgment rarely faltered because of deficient intent; rather, it became vulnerable when speed, familiarity, and contextual pressure exceeded the structural support necessary for clarity. Performance calibration cycles represented recurring decision environments in which cognitive constraints, comparative framing, and organizational expectations converged (Kouchaki & Smith, 2025; Maske et al., 2021). Within these compressed settings, small differences in interpretation accumulated across cycles and influenced advancement velocity and leadership pipeline composition (Son Hing et al., 2023). These cumulative dynamics clarified that calibration outcomes reflected system design conditions as much as individual discretion, reinforcing the infrastructural nature of career momentum.

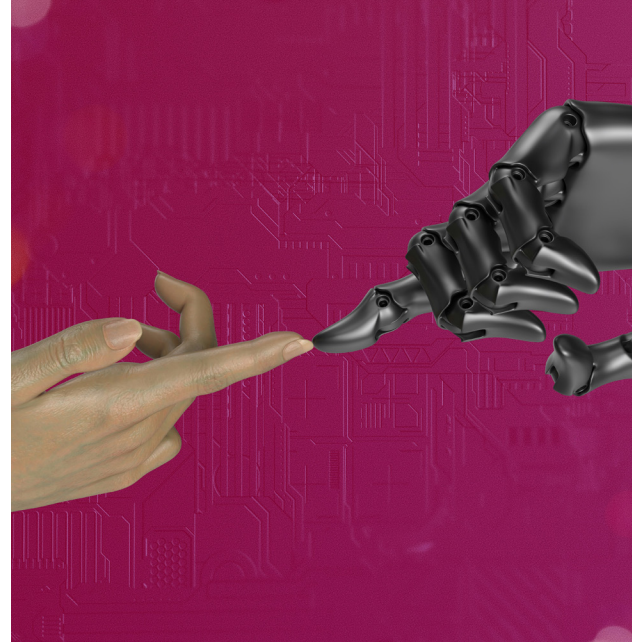
Calibration design therefore functioned as an institutional determinant of career autonomy, trust formation, and organizational resilience. When evaluation systems were transparent, evidence-anchored, and structured to moderate interpretive compression, employees reported stronger perceptions of fairness and advancement predictability (Kim & Beehr, 2021; Shahidi et al., 2022). When processes remained informal or inconsistently structured, cumulative ambiguity gradually eroded confidence in institutional opportunity systems. Reframing calibration as leadership in action positioned evaluation architecture as a strategic governance lever rather than an administrative requirement. By intentionally designing systems that protected clarity and momentum, organizations strengthened not only immediate evaluative integrity but the long-term resilience of their leadership pipelines, institutional credibility, and capacity to sustain trust across cycles of change.

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Building Institutional Trust in the Age of Artificial Intelligence: Workforce Development Strategies for Technology Adoption

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Abstract

The rapid integration of artificial intelligence (AI) into organizational work processes has created opportunities for improved efficiency, decision support, and workforce capability. Still, it has also intensified employee concerns about job security, skill relevance, surveillance, fairness, and leadership transparency. These concerns can weaken institutional trust and reduce employee engagement when AI implementation is framed primarily as a technical rollout rather than a workforce development challenge. This conceptual article synthesizes research on organizational trust, employee engagement, AI adoption, psychological safety, and workforce development to examine how organizations can sustain trust during AI-enabled transformation. The article argues that successful AI implementation depends on four trust-building practices: continuous workforce training, transparent communication from leadership, cross-functional collaboration, and structured feedback mechanisms. Together, these practices help employees understand the purpose of AI-enabled change, build confidence in their ability to work with new systems, exercise voice during implementation, and view AI adoption as part of a credible organizational commitment to shared adaptation and long-term workforce resilience.

Introduction

Artificial intelligence (AI) is increasingly shaping how organizations structure work, make decisions, allocate resources, and develop employees. In contemporary workplaces, AI-enabled systems automate routine tasks, generate insights from large datasets, support forecasting, assist with customer service, guide human resource processes, and augment professional judgment. Bankins, Ocampo, et al. (2024) describe AI as a multilevel organizational force because it affects individuals, teams, leadership practices, and institutional routines. Kellogg et al. (2020) similarly

show that algorithmic systems can reshape how work is monitored and controlled, while Przegalinska et al. (2025) emphasize that AI creates the most value when human capabilities and AI tools are aligned with task needs.

This change creates both opportunity and tension. AI can improve productivity, enhance decision quality, and enable employees to shift effort from repetitive tasks to more analytical, relational, and judgment-based work. At the same time, Souлами et al. (2024) show that workplace AI adoption raises employee concerns about well-being, work redesign,

and the future of human roles. Valtonen et al. (2025) further found that AI's effects on employee well-being depend less on adoption alone and more on how implementation affects task optimization, safety, and the work environment. These findings reinforce Raisch and Krakowski's (2021) argument that AI should be understood through both automation and augmentation rather than treated as a simple replacement technology.

For U.S. workers, these questions are especially important because AI adoption is occurring alongside broader labor market pressures, rising expectations for digital competence, and ongoing demands for reskilling. The U.S. Department of Labor's Employment and Training Administration (2026) recently released an AI literacy framework to guide workforce and education systems, signaling that AI capability is now a national workforce development priority. Muehlemann (2025) also found that AI adoption is associated with changes in workplace training strategies, including shifts in continuing training and apprenticeship activity. Organizations, therefore, cannot assume that employees will embrace AI merely because leaders identify operational benefits.

This article argues that successful AI implementation depends on cultivating institutional trust and employee engagement. Building on current AI adoption research, this conceptual synthesis integrates scholarship on trust, employee engagement, human-AI collaboration, psychological safety, and workforce development to identify practices that support AI-enabled transformation (Bankins, Hu, et al., 2024; Daly et al., 2025). The article identifies four interrelated practices that can support workers during AI-enabled transformation: continuous workforce training, transparent communication from leadership, cross-functional collaboration, and structured feedback mechanisms. These practices are not secondary to implementation; they are central to whether AI adoption becomes a legitimate, sustainable, and human-centered organizational change process.

Institutional Trust and Employee Engagement

Institutional trust refers to employees' confidence that organizational leaders, policies, and systems are competent, fair, reliable, and aligned with stated values. In AI-enabled workplaces, trust is not limited

to interpersonal confidence in supervisors. Daly et al. (2025) show that organizational support, visible benefits, and experience with AI shape employees' trust in AI adoption. Vuori et al. (2026) further demonstrate that employee responses to AI depend on both cognitive trust in system performance and emotional trust in the technology's implications. Institutional trust, therefore, includes confidence in the organization that selects, governs, explains, and evaluates AI-enabled systems.

AI adoption makes trust more complex because employees are asked to rely on systems that may be opaque, evolving, and embedded in managerial decision-making. Marimon et al. (2025) connect trust in generative AI with employee performance and engagement, suggesting that trust affects whether workers use AI as a productive resource. Prasad and De (2024) similarly found that trust mediates the relationship between user perceptions and organizational commitment in the context of generative AI use. These findings reinforce the argument that trust is not merely a general organizational value. It is a practical condition for using technology.

Employee engagement is closely connected to trust. Mazzetti et al. (2023) found that work engagement is strengthened by job resources such as supportive leadership, feedback, autonomy, learning opportunities, and psychologically safe work conditions. During AI adoption, these resources become especially important because employees are often expected to learn new tools while maintaining current performance expectations. Prasad and De (2024) also linked generative AI use to engagement and performance through user perceptions and trust, showing that employee engagement remains a central adoption issue rather than a separate human resources concern.

Trust and engagement, therefore, operate together. Employees are more likely to engage with AI-enabled change when they believe the organization is providing the resources needed to succeed, communicating honestly about the purpose of implementation, and responding to concerns that emerge during the transition. Valtonen et al. (2025) show that AI's workplace effects are mediated by concrete work conditions, while Soulati et al. (2024) link AI adoption to employees' concerns about well-being and organizational change. Conversely, low trust

may lead employees to comply superficially, avoid experimentation, withhold feedback, or interpret AI-related changes as primarily extractive.

AI Adoption as Workforce Development

Technology adoption is often discussed in terms of usefulness, ease of use, and facilitating conditions, but AI adoption requires a broader workforce-development lens. Langer and Landers (2021) explain that workers react to automated and augmented decisions based on perceived fairness, trustworthiness, transparency, and control. Raisch and Krakowski (2021) likewise argue that automation and augmentation are interdependent tensions rather than separate implementation choices. Employees are not simply learning a new software interface; they are adjusting to new patterns of decision support, human-machine collaboration, oversight, and accountability.

Recent AI scholarship supports this broader view. Bankins, Hu, et al. (2024) argue that AI can automate some tasks while complementing and reshaping other forms of human labor, underscoring the importance of AI literacy and human-centered skills. Muehleemann (2025) found that AI adoption is associated with changes in workplace training strategies, including increased apprenticeship activity and shifts in continuing training toward higher-skilled workers. These findings show that AI adoption is inseparable from workforce development, as organizations that introduce AI without a deliberate training strategy risk widening skill gaps and reinforcing the perception that the institution invests more in technology than in people.

Viewing AI adoption as workforce development changes the question of implementation. Instead of asking only whether employees will accept a system, leaders should ask whether employees understand why the system is being introduced, how their roles will change, what capabilities they will need, and how the organization will support them over time. The U.S. Department of Labor's Employment and Training Administration (2026) frames AI literacy as a flexible workforce capability that should be adapted across industries, roles, and educational contexts. That framing shifts AI implementation from a narrow technology project to a sociotechnical change process tied to long-term capability-building.

Workers may reasonably worry about automation, surveillance, biased outputs, or shifting expectations. Langer and Landers (2021) found that transparency, decision control, and perceptions of fairness shape reactions to AI-supported decisions. Daly et al. (2025) also show that negative attitudes toward AI can shift as employees gain experience, see visible benefits, and receive organizational support. Institutional trust is strengthened when leaders acknowledge concerns directly and design implementation processes that include employee learning, voice, and feedback.

Organizational Legitimacy and the Worker Experience

Institutional engagement depends in part on whether workers perceive organizational decisions as legitimate. In AI implementation, legitimacy is reinforced when employees believe that decisions are fair, explainable, consistent with organizational values, and respectful of worker dignity. Balasubramaniam et al. (2023) found that organizations treat transparency and explainability as central AI requirements, particularly when teams must define how systems work and what consequences they may create. Daly et al. (2025) add that trust in AI develops through experience, support, and visible benefits. These issues make legitimacy a practical implementation concern rather than a purely abstract organizational value.

AI-enabled systems can change the worker experience in visible and subtle ways. Employees may find new tools helpful when they reduce administrative burdens, improve access to information, or support safer and more efficient work. Kellogg et al. (2020), however, describe algorithmic systems as a contested terrain of workplace control because they can reshape power relations, discretion, and monitoring. Valtonen et al. (2025) show that employee well-being improves only when AI implementation produces positive changes in task optimization and safety. The same technology can therefore be experienced as support or surveillance depending on how it is introduced and governed.

Fairness and explainability are useful for understanding this dynamic. Langer and Landers (2021) show that workers' reactions to automated and augmented decisions depend on system design choices, including transparency and the retention of human control over decision-making.

Balasubramaniam et al. (2023) argue that explainability requirements should be developed through multidisciplinary teams that clarify the purpose of the AI system and analyze possible negative consequences. In AI adoption, procedural fairness includes explaining why tools are used, how decisions are reviewed, what human oversight remains, and how employees can report issues or contest inaccurate outputs.

A legitimacy-centered approach treats workers as participants in organizational adaptation rather than passive recipients of technological change. This distinction matters because AI adoption often requires tacit knowledge from frontline employees who understand exceptions, workflow realities, customer needs, and operational constraints. Bankins, Ocampo, et al. (2024) emphasize that AI affects organizational behavior across levels, while Przegalinska et al. (2025) show that organizations benefit when employees upskill and collaborate with AI in task-appropriate ways. When organizations invite employee knowledge into implementation, they improve both system design and employee trust.

Continuous Workforce Training and Development

Continuous workforce training is one of the most important trust-building practices during AI-enabled transformation. Training should not be limited to one-time instruction on how to operate a specific platform. Bankins, Hu, et al. (2024) emphasize that AI changes the skill mix needed for future work, including both technical literacy and human-centered capabilities. The U.S. Department of Labor's Employment and Training Administration (2026) similarly identifies AI literacy as a workforce capability that should be developed across education and employment systems. Employees often need support in AI literacy, data interpretation, prompt development, critical evaluation of outputs, privacy awareness, ethical use, and judgment in human-machine workflows.

The trust value of training is both practical and symbolic. In practice, training improves employee capabilities and reduces uncertainty. Symbolically, training communicates that the organization expects workers to remain central to the future of work rather than treating technology as a substitute for human development. Muehlemann (2025) shows that AI adoption is associated with changes in training investments, and Soulamy et al. (2024) identify

employee well-being and future role concerns as recurring issues in workplace AI research. Training, therefore, should be understood as part of the trust infrastructure surrounding AI adoption.

Organizations should design AI training as part of a broader workforce development strategy. Strategies may include baseline AI literacy for all employees, advanced training for roles that use AI more intensively, peer learning communities, supervisor coaching, and opportunities to practice with low-risk use cases. Przegalinska et al. (2025) found that AI-related skills enhancement matters for organizational task performance, while Marimon et al. (2025) connect trust in generative AI to employee performance and engagement. Training should also include clear boundaries around appropriate use, so employees know when AI can support their work, when human review is required, and when AI-generated outputs should not be used without verification.

Transparent Leadership Communication

Transparent leadership communication is central to institutional trust because AI adoption often produces uncertainty before employees see stable benefits. Leaders should explain why AI is being implemented, what organizational goals it serves, how it may change work, the risks considered, and the support available. Daly et al. (2025) identify organizational support and visible benefits as key conditions for fostering trust in AI adoption. Balasubramaniam et al. (2023) also show that transparency and explainability must be translated into concrete requirements rather than treated as broad ethical language. Vague messaging can cause employees to infer that leaders are withholding information or prioritizing efficiency over workforce stability.

Effective communication should be frequent, specific, and bidirectional. It is not enough to announce a new AI tool at the start of implementation. Employees need updates as workflows change, policies evolve, and early lessons emerge. Vuori et al. (2026) show that trust in AI can take different forms, including full trust, distrust, uncomfortable trust, and blind trust, each of which affects behavior during adoption. Leaders strengthen their credibility when they explain what is known, what remains uncertain, how decisions will be evaluated, and how employees can participate in improvement efforts.

Communication also shapes meaning. If AI implementation is described only in terms of

productivity, cost reduction, or speed, employees may interpret the initiative as extractive. Prasad and De (2024) found that trust supports organizational commitment and engagement in the context of generative AI tools. Valtonen et al. (2025) also suggest that AI improves employee well-being indirectly by enhancing meaningful work conditions. If leaders connect AI adoption to quality improvement, skill development, better decision support, and long-term organizational resilience, employees are more likely to see themselves as participants in the transition.

Cross-Functional Collaboration and Shared Ownership

Cross-functional collaboration strengthens trust by involving employees from multiple roles and departments in AI implementation. AI systems often affect operations, customer service, planning, human resources, quality control, compliance, and management simultaneously. Przegalinska et al. (2025) show that human-AI collaboration depends on matching AI capabilities with task demands and human skills. Balasubramaniam et al. (2023) likewise emphasize the importance of multidisciplinary teams when defining explainability requirements for AI systems. A narrow implementation team may overlook workflow realities that become obvious to employees who use or are affected by the system.

Collaboration improves trust in three ways. First, it gives employees a voice. Participation reduces the perception that change is being imposed without regard to frontline expertise. Second, it improves decision quality by incorporating operational knowledge that may not be visible to senior leaders or technology vendors. Third, it supports shared ownership because employees are more likely to engage with changes they helped shape. Edmondson and Bransby (2023) connect psychological safety with learning and candor in uncertain environments, underscoring the importance of collaboration when employees are expected to surface concerns about AI tools and workflows.

Psychological safety is especially important in this process. Edmondson and Bransby (2023) emphasize that psychologically safe environments help teams learn from uncertainty, errors, and disagreement. AI implementation frequently exposes knowledge gaps, data quality problems, workflow inconsistencies, and disputes about appropriate use. Balasubramaniam et al. (2023) note that multidisciplinary teams are

better positioned to analyze negative consequences and clarify system purpose, while Kellogg et al. (2020) show that algorithmic systems can create new control dynamics. Organizations benefit when employees can raise those issues without fear of embarrassment or punishment.

Structured Feedback and Adaptive Learning

Structured feedback mechanisms are essential for maintaining trust after implementation begins. AI systems may produce unintended effects, including workflow disruptions, usability challenges, role confusion, inconsistent outputs, or employee concerns about monitoring and fairness. Langer and Landers (2021) show that the decision process, system design, task context, and perceived outcomes shape reactions to automated decisions. Daly et al. (2025) also found that employees' attitudes toward AI can become more positive when they gain knowledge, experience, support, and evidence of benefits. Feedback systems such as pilot reviews, pulse surveys, team debriefs, user advisory groups, listening sessions, and issue-tracking processes help organizations detect problems early and respond visibly.

Feedback communicates respect. When employees see that their experience influences implementation decisions, they are more likely to believe the organization is responsive rather than unilateral. Souлами et al. (2024) show that workplace AI adoption raises employee-centered questions about well-being, future roles, and organizational change. Vuori et al. (2026) further demonstrate that distinct trust configurations elicit distinct employee behaviors during AI adoption. Feedback helps leaders distinguish between resistance to change and legitimate implementation problems, such as unclear policies, insufficient training, poor data quality, or a mismatch between system design and actual workflow.

Feedback mechanisms should be paired with adaptive learning. Organizations should communicate what they heard, what they changed, and what they are still evaluating. This closes the loop and prevents feedback from becoming performative. Daly et al. (2025) found that experience and organizational support can help employees develop calibrated trust in AI, while Balasubramaniam et al. (2023) emphasize the need to define explainability requirements in practice. In AI adoption, visible responsiveness helps convert skepticism into participation and supports the long-term trust needed for AI-enabled transformation.

Implications for Workers and Institutions

The future of work in the United States will be shaped not only by the AI systems organizations adopt, but also by how institutions manage the human experience of adaptation. The U.S. Department of Labor's Employment and Training Administration (2026) frames AI literacy as a workforce and education priority, underscoring that AI capability is now tied to national talent development. Valtonen et al. (2025) show that employees benefit when AI improves task and safety conditions, while Soulamy et al. (2024) caution that AI adoption can also generate concerns about well-being and employment futures. Workers in high-trust, development-oriented organizations are more likely to experience AI as a source of capability, decision support, and professional growth.

This distinction has practical implications for employers, higher education institutions, and workforce development partners. Employers should treat AI training, communication, employee voice, and feedback as core elements of the implementation strategy rather than optional supports. Bankins, Hu, et al. (2024) identify AI literacy and human-centered capabilities as essential future work skills, and Muehleman (2025) shows that AI adoption changes training needs inside firms. Higher education and professional programs can contribute by preparing learners for hybrid work environments that require technical literacy, ethical judgment, adaptability, communication, and critical evaluation of AI-generated outputs.

The broader implication is that institutional trust should be understood as a strategic asset. AI adoption may begin as a technology initiative, but it becomes an institutional test of credibility. Daly et al. (2025) show that trust in AI adoption develops through experience, organizational support, and evidence of benefits. Bankins, Ocampo, et al. (2024) further position AI as an organizational behavior issue that affects people, teams, leaders, and institutional systems. Organizations that maintain trust are better positioned to adapt, retain talent, improve learning, and identify implementation problems before they undermine performance.

Conclusion

Artificial intelligence is reshaping contemporary work, but technological sophistication alone does not ensure organizational success. The effectiveness of AI adoption depends heavily on whether employees trust the institutions introducing change and whether they remain meaningfully engaged throughout the process. Current AI scholarship shows that trust, training, transparency, human-AI collaboration, and employee well-being are central to adoption outcomes rather than peripheral concerns (Daly et al., 2025; Przegalinska et al., 2025; Valtonen et al., 2025). For this reason, AI implementation should be understood not merely as a technical challenge but as a challenge to workforce development and institutional trust.

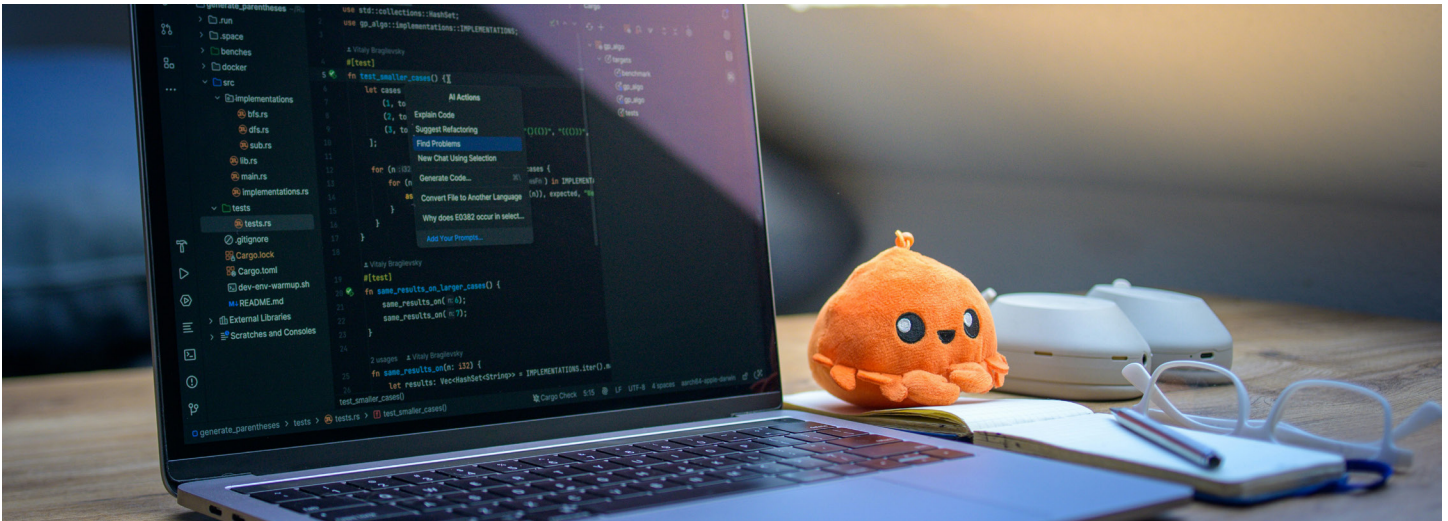
This article has argued that organizations can cultivate trust during AI adoption through four interrelated practices: continuous workforce training, transparent leadership communication, cross-functional collaboration, and structured feedback mechanisms. These practices help employees build competence, interpret change as legitimate, exercise voice, and participate in adaptive learning. They also help organizations avoid the mistake of treating AI adoption as a purely technical rollout, separate from the employee experience.

For workers facing rapid technological change, institutional trust may be one of the most important determinants of whether innovation is experienced as empowerment or displacement. Organizations that invest in trust-building practices are more likely to create resilient workplaces in which AI-enabled systems support both performance and human development. In that sense, the future of AI adoption is inseparable from the future of institutional credibility.

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AI, Autonomy, and Institutional Trust: Cultivating Workforce Engagement in the Era of Intelligent Work

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Abstract

Burnout and disengagement are frequently explained through the Job Demands–Resources (JD–R) model, which holds that sustained job demands combined with insufficient resources predict strain and reduced well-being, with inadequate recovery deepening negative outcomes (Bakker & Demerouti, 2017; Sonnentag, 2018). Concurrently, artificial intelligence (AI) is reshaping task structures and skill requirements across industries (Brynjolfsson et al., 2023; Huang & Rust, 2021), and awareness of AI’s impact can heighten employment-risk perception, particularly among workers who lack adaptive confidence (Liang & Zhai, 2025). Because trust in AI systems and in institutional decision-making shapes acceptance of technological integration (Glikson & Woolley, 2020), and because sustainable-career scholarship ties long-term employability to ongoing development and organizational support (De Vos et al., 2020), this article argues that structured AI upskilling—implemented through autonomy-supportive practices—can strengthen workforce engagement and institutional trust.

Introduction

The Job Demands–Resources (JD–R) model explains burnout as the result of job demands exceeding available psychological and organizational resources, with autonomy, development, and institutional support buffering strain and insufficient recovery intensifying it (Bakker & Demerouti, 2017; Sonnentag, 2018). Rapid technological change—particularly generative AI—introduces new demands by reshaping productivity

and task structures and by unsettling perceptions of career stability and employability (Brynjolfsson et al., 2023; Huang & Rust, 2021). Awareness of AI’s labor-market impact is associated with heightened employment-risk perception, especially where confidence and prior knowledge are low, underscoring the role of perceived competence in how workers respond to AI integration (Liang & Zhai, 2025).

Yet AI’s effect is not fixed. Trust—shaped by reliability,

transparency, and institutional intent—moderates acceptance of AI systems (Glikson & Woolley, 2020), and sustainable-career theory holds that employability depends on continuous learning aligned with organizational support (De Vos et al., 2020). Read together, these literatures suggest that AI-enabled professional development can act as a resource within the JD–R framework, reframing technological change as supportive rather than disruptive. This article integrates burnout, technological disruption, trust, and career sustainability into a single argument and proposes a framework for how AI-centered workforce investment can strengthen engagement and institutional trust.

Theoretical Framework

This article integrates three perspectives—the JD–R model, sustainable career theory, and research on trust in AI—to explain how technological transformation functions as either a demand or a resource depending on institutional design. The JD–R model holds that strain occurs when demands exceed resources, while autonomy, learning opportunities, and support promote engagement, and inadequate recovery deepens negative outcomes (Bakker & Demerouti, 2017; Sonnentag, 2018).

Generative AI introduces new cognitive and performance demands by reshaping workflows and decision-making in knowledge work (Brynjolfsson et al., 2023) and is often positioned as a driver of innovation (Huang & Rust, 2021)—but its psychological cost rises when workers lack the adaptive resources to meet it (Liang & Zhai, 2025). Sustainable career theory frames long-term employability as dependent on continuous learning, adaptability, and alignment between individual growth and organizational support (De Vos et al., 2020); in this light, AI training can operate as a resource that builds competence rather than as a destabilizing force. Trust completes the picture: perceptions of reliability, transparency, and institutional intent shape acceptance of AI, while opacity breeds resistance (Glikson & Woolley, 2020), and adaptive work-design choices further condition how employees experience change (Yildizhan et al., 2023). Together these perspectives indicate that AI transformation is not inherently destabilizing; its impact depends on whether institutions implement it as a demand that heightens uncertainty or a resource that enhances competence, autonomy, and trust.

Burnout, Autonomy, and Career Sustainability in Technological Contexts

Within the JD–R model, burnout follows from diminished autonomy and limited development: as resources contract, strain and disengagement rise, and insufficient recovery compounds them (Bakker & Demerouti, 2017; Sonnentag, 2018). Perceived stagnation thus operates as a resource deficit—and, in sustainable-career terms, as a disruption of the adaptive processes on which employability depends (De Vos et al., 2020).

Generative AI can intensify these pressures. Introduced without structured skill development or transparent communication, it adds psychological demand and elevates employment-risk perception among workers who lack confidence or prior knowledge (Brynjolfsson et al., 2023; Liang & Zhai, 2025). Burnout in technologically dynamic environments therefore arises not only from heightened demands but from eroded autonomy, recovery, and growth pathways. The same forces, differently managed, point toward the remedy: skill acquisition and confidence function as protective resources within the JD–R framework.

AI as a Catalyst for Autonomy Restoration

Job resources—autonomy, learning opportunities, and skill development—do more than buffer strain; they enhance motivation and engagement by supporting goal attainment (Bakker & Demerouti, 2017). AI integration can join that list of resources when it is paired with structured development rather than left to informal adaptation.

Because competence shapes how workers appraise AI (Liang & Zhai, 2025), formal AI training reduces perceived threat even as generative tools reshape knowledge work (Brynjolfsson et al., 2023). Transparent communication operates as a parallel institutional resource, since clarity about a system’s purpose and limits strengthens acceptance while opacity undermines it (Glikson & Woolley, 2020). And because sustainable careers depend on continuous learning (De Vos et al., 2020), AI-literacy and professional-development initiatives reinforce

adaptability—an effect echoed in evidence that structured, AI-supported learning environments advance competency development (Tan et al., 2024). Framed as a structured learning opportunity rather than performance pressure, AI can enhance competence, support autonomy, and strengthen institutional trust.

Institutional Investment, Work Design, and Trust Formation

What determines which face AI shows—demand or resource—is institutional design. In JD–R terms, supervisory support and learning opportunities mitigate demands and raise engagement, making organizational investment in development a decisive determinant of employee well-being (Bakker & Demerouti, 2017); sustainable-career theory likewise centers institutional support and continuous learning (De Vos et al., 2020). Faced with AI’s reshaping of roles, institutions effectively choose between structured training and informal adaptation (Brynjolfsson et al., 2023), and AI literacy lowers perceived threat by building competence (Liang & Zhai, 2025).

Trust and work design shape the outcome alongside training. Perceptions of reliability, fairness, and transparency govern acceptance, while unclear implementation increases resistance (Glikson & Woolley, 2020); flexible, adaptive structures influence how employees absorb change (Yildizhan et al., 2023); and intentional, AI-supported learning systems support professional development (Tan et al., 2024). Institutional investment in AI literacy and structured skill development therefore moderates the relationship between technological disruption and workforce engagement: paired with transparent communication and formal growth pathways, AI strengthens trust and adaptability; absent them, strain and risk perception intensify.

A Framework for AI-Enabled Institutional Trust and Workforce Engagement

The preceding synthesis suggests that technological transformation influences engagement through the interaction of demands, resources, perceived competence, and institutional transparency. Building

on that logic, the following framework proposes four interrelated institutional pillars through which organizations can convert AI from a demand into a developmental resource.

Structured AI skill development as a resource-allocation strategy. Because AI awareness raises risk perception where confidence is low (Liang & Zhai, 2025) and continuous learning sustains employability (De Vos et al., 2020), institutions that formalize AI-literacy programs convert technological exposure into structured skill development—reframing AI from a demand into a resource.

Transparent AI governance and communication. Because transparency, reliability, and fairness drive acceptance while unclear implementation breeds skepticism (Glikson & Woolley, 2020), transparent governance functions as an institutional resource that shapes how employees interpret technological change.

Alignment between technological integration and sustainable career pathways. Because employability depends on alignment between individual growth and organizational systems (De Vos et al., 2020), tying AI integration explicitly to internal mobility and professional development reinforces adaptability rather than uncertainty (Brynjolfsson et al., 2023).

Work-design adaptation to support autonomy. Because autonomy is a critical job resource (Bakker & Demerouti, 2017) and structural design choices shape individual and organizational outcomes (Yildizhan et al., 2023), AI integration that preserves decision-making latitude functions as a resource rather than a constraint.

Taken together, the framework casts AI-enabled workforce development as a resource-conversion process: technological integration introduces new demands, but institutional design determines whether those demands are offset by competence-building, transparency, and autonomy-supportive structures. Institutional trust in technologically dynamic environments is thus a function not of innovation intensity but of resource alignment—and AI, paired with deliberate investment in sustainable-career infrastructure, can act as a stabilizing rather than a destabilizing force.

Implications for Higher Education and Organizational Leadership

These arguments carry implications for both the institutions that prepare the workforce and those that employ it. As generative AI becomes embedded in knowledge work (Brynjolfsson et al., 2023), higher-education institutions serve as foundational contributors to workforce resilience by embedding AI literacy and adaptive skill development into curricular and professional-training systems—an emphasis reinforced by evidence that structured, AI-supported learning shapes professional-development trajectories (De Vos et al., 2020; Tan et al., 2024).

For organizational leaders, the JD–R model offers a resource-allocation logic: when AI introduces new cognitive or performance demands, institutions must supply corresponding resources—training and autonomy-supportive work design—or risk strain and disengagement (Bakker & Demerouti, 2017; Sonnentag, 2018). Two levers matter especially. Transparent governance and clear communication about AI’s capabilities, limits, and intent reduce uncertainty and build trust (Glikson & Woolley, 2020); and structured upskilling raises perceived competence, buffering the risk perception that rises when workers lack confidence or prior knowledge (Liang & Zhai, 2025). Leadership choices about flexibility and task autonomy further shape how employees interpret systemic change (Yildizhan et al., 2023). Cultivating institutional trust in the era of intelligent work, in short, requires coordinated investment across educational preparation, workplace learning, transparent governance, and adaptive work design.

Conclusion

The integration of AI represents a structural transformation in knowledge-intensive work, introducing new cognitive and performance demands (Bakker & Demerouti, 2017; Brynjolfsson et al., 2023). Unmatched by resources, those demands can deepen strain, disengagement, and employment-risk perception—particularly for workers low in confidence or prior knowledge (Sonnentag, 2018; Liang & Zhai, 2025). Matched by continuous learning, transparent governance, and autonomy-supportive design, the same demands become manageable, and AI functions

as a resource rather than a threat (De Vos et al., 2020; Glikson & Woolley, 2020). AI does not inherently diminish engagement; its impact depends on institutional design. Aligned with skill development, transparent governance, and sustainable-career pathways, AI can strengthen both workforce engagement and institutional trust.

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Trauma-Informed Care in Alternative Education Settings: Educators' Lived Experiences

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Abstract

Alternative education settings disproportionately serve Black and Brown adolescents who experience high rates of trauma associated with poverty, community violence, housing instability, and systemic racism. Although trauma-informed care (TIC) has received increasing attention within educational research, limited scholarship has examined how educators in alternative education settings experience and implement TIC in practice. Consequently, TIC implementation remains inconsistent, leaving educators to address complex student needs without sufficient training, resources, or systemic support. This manuscript draws on a qualitative, exploratory case study using purposive sampling to recruit 17 educators, administrators, and social workers across the greater Washington, D.C., metropolitan area who had direct experience implementing TIC in alternative education settings. Six themes emerged: challenges in implementing TIC, positive behavioral and academic transformations, effective practices, integration with traditional methods, the evolution of TIC over time, and stakeholder perceptions of students. Findings underscore the need for culturally responsive, systemic TIC approaches that prioritize trust-building, professional development, and intersectional awareness. Recommendations for practitioners, administrators, and policymakers are offered.

Keywords: trauma-informed care, alternative education, Black and Brown adolescents, educators' experiences, qualitative case study, culturally responsive pedagogy

Introduction

Trauma is a pervasive and often invisible force shaping the academic trajectories of youth across the United States. For Black and Brown adolescents in alternative education settings, its impact is

particularly acute. These students frequently arrive in classrooms carrying histories of adverse childhood experiences (ACEs), including poverty, family instability, community violence, and systemic racism, that fundamentally alter how the brain processes stress, learning, and trust (Downey & Crummy,

2021; SAMHSA, 2014). Approximately 62.5% of high school adolescents have experienced at least one ACE (Mercera et al., 2024), with rates substantially higher among students enrolled in alternative education programs. The consequences are well-documented: elevated rates of absenteeism, chronic behavioral incidents, and school dropout (Perfect et al., 2016). These outcomes are not indicators of student failure; they are indicators of systemic failure to recognize and meaningfully respond to the realities students carry into the classroom every single day.

Trauma-informed care (TIC) represents a paradigm shift in how educators understand and respond to student behavior. Rather than asking what is wrong with a student, a trauma-informed lens asks what happened to that student and how the school environment can be structured to promote healing and safety (SAMHSA, 2014). Evidence-based frameworks such as the Healthy Environments and Response to Trauma in Schools (HEARTS) model have demonstrated that whole-school, multilevel TIC implementation can meaningfully improve school climate and student outcomes (Dorado et al., 2016). However, despite these frameworks, TIC continues to be implemented unevenly and inconsistently, particularly in alternative education settings serving historically marginalized populations. Understanding the lived experiences of educators who operate in these spaces is essential for identifying what works, what does not, and the systemic supports needed to sustain TIC at scale.

This manuscript presents findings from a qualitative exploratory case study examining how educators across the greater Washington, D.C., metropolitan area experience and implement trauma-informed care in alternative education settings (Taylor, 2024). Guided by five research questions exploring administrative experiences, implementation challenges, effective TIC components, the reconciliation of traditional and trauma-informed methods, and the evolution of TIC practices over time, the study engaged 17 educators, administrators, and social workers. Six themes emerging from interviews and focus group data illuminate both the transformative potential and the persistent barriers of TIC in practice, offering actionable insights for practitioners, administrators, and policymakers committed to building more equitable educational environments for vulnerable youth.

Background and Significance

The consequences of unaddressed trauma in educational settings have been extensively documented across decades of research. Trauma exposure is linked to impaired cognitive functioning, emotional dysregulation, difficulty with attention and memory, and elevated rates of school avoidance and suspension (Perfect et al., 2016). These effects are not uniformly distributed across the student population. Cruz-Gonzalez et al. (2022) demonstrated that Black and multiracial individuals experience more elevated and more persistent post-traumatic stress symptoms compared to White counterparts, even after controlling for known risk factors, a disparity reflecting the compounding burden of structural racism, community disinvestment, and racialized trauma. This racialized dimension of trauma must be treated as central, not incidental, to any serious and credible educational response.

For Black and Brown adolescents in the Washington, D.C., area, trauma is frequently rooted in chronic exposure to poverty, police brutality, housing insecurity, and community violence (Boyd et al., 2022). Alternative education programs were originally designed to offer flexible, individualized pathways for students who have not found success in traditional school environments. In practice, however, many of these programs have inherited the same punitive discipline structures and deficit-oriented frameworks that first marginalized students. Curricula and disciplinary approaches that fail to recognize students' cultural backgrounds and lived experiences can themselves become re-traumatizing, further eroding the trust that learning fundamentally depends upon (Blitz et al., 2020). Resti et al. (2025) emphasized that promoting mental wellness in classrooms is not supplementary to academic instruction but foundational to it, a recognition that is especially urgent in alternative education contexts where students' mental health needs are most acute and least resourced.

SAMHSA (2014) articulates six core TIC principles: safety; trustworthiness and transparency; peer support; collaboration and mutuality; empowerment, voice, and choice; and attention to cultural, historical, and gender issues. These principles provide a widely adopted framework for TIC implementation across

behavioral health and educational settings. Yet research consistently finds that school-based TIC adoption is hampered by inadequate professional development, high staff turnover, insufficient resources, and the absence of supportive institutional policy (Huo et al., 2023). For alternative education settings, where student needs are greatest and institutional resources are most limited, these barriers are typically magnified rather than reduced, creating a troubling gap between the students who most need trauma-informed environments and the schools best positioned to provide them.

Despite growing evidence supporting trauma-informed care in educational settings, significant gaps remain in the literature. Existing studies have largely focused on traditional K–12 environments, school-wide implementation models, and student behavioral outcomes (Dorado et al., 2016; Perfect et al., 2016; Eggleston et al., 2021). Comparatively little research has examined the lived experiences of educators implementing TIC within alternative education settings serving Black and Brown adolescents. Furthermore, limited scholarship has explored how educators navigate tensions between trauma-informed approaches and traditional accountability, disciplinary, and instructional expectations. Although recent researchers have called for more culturally responsive and intersectional trauma-informed frameworks (Blitz et al., 2020; Joseph-McCatty et al., 2024), empirical studies examining how these principles are enacted in alternative education settings remain scarce. Consequently, a gap exists in understanding how educators experience, interpret, and operationalize trauma-informed care in contexts where student trauma exposure is often particularly acute. Although the literature consistently supports the value of trauma-informed care, findings are less consistent regarding how best to implement and sustain these practices across educational settings. Some studies report improvements in student behavior, engagement, and school climate following trauma-informed initiatives, whereas others conclude that implementation remains uneven because of inconsistent training, limited organizational support, competing institutional priorities, and resource constraints. These inconsistencies highlight the need for research examining educators' lived experiences of implementing trauma-informed care within alternative education settings. The present study addresses this gap by centering the perspectives of

educators, administrators, and social workers working directly within alternative education programs.

Theoretical and Conceptual Framework

The study was guided by a multi-theoretical framework integrating Bronfenbrenner's (1979) ecological systems theory, TIC principles, life course theory, and intersectionality theory. This framework is well-suited to studying TIC in alternative education because it accounts for the multilevel influences—individual, interpersonal, institutional, community, and societal, that shape both how students experience trauma and how educators respond to it. Bronfenbrenner's model situates individual development within nested, interacting systems extending from the immediate family and school environment outward to broader cultural and societal forces. For Black and Brown adolescents, trauma cannot be understood solely as an individual psychological experience; it must be located within the structural conditions of racism and poverty that generate and sustain adverse experiences across generations. Educators operating from an ecological perspective recognize that supporting a traumatized student requires attention to the full ecosystem surrounding that student, including family dynamics, neighborhood conditions, and institutional policies, not only what occurs within the classroom walls.

Intersectionality theory, originating with Crenshaw (1989), posits that overlapping systems of identity and structural power create compounded vulnerabilities that single-axis approaches cannot adequately address. For Black and Brown adolescents in alternative education, the intersection of race, class, gender, and educational marginalization creates distinctive pressures that demand responses attending to structural conditions as much as individual trauma histories. Joseph-McCatty et al. (2024) argued specifically for intersectional TIC frameworks in K-12 settings, demonstrating that gender compounds racial trauma in ways requiring nuanced, targeted, and culturally grounded responses. This intersectional orientation shaped both the study design and the interpretation of all emergent themes throughout the research process.

Methodology

Study Design

This qualitative exploratory case study design is consistent with the interpretivist paradigm and appropriate for investigating complex, contextually embedded phenomena that are not yet fully understood (Tisdell et al., 2025; Yin, 2018). This design enables in-depth exploration of a bounded system, trauma-informed care implementation across alternative education settings in the Washington, D.C., metropolitan area, using multiple converging sources of evidence. A qualitative case study is particularly well suited to examining participants' lived experiences because it facilitates an in-depth understanding of phenomena within their real-world contexts while preserving the complexity of those experiences (Yin, 2018). The design therefore provided a rigorous framework for exploring how educators perceive, interpret, and implement trauma-informed care within the unique organizational and cultural environments of alternative education settings.

Sampling Strategy

A purposive sampling strategy was used to recruit 17 participants, including teachers, administrators, and social workers from alternative education programs across the greater Washington, D.C., metropolitan area. Purposive sampling was appropriate because participants possessed specialized knowledge and direct experience implementing trauma-informed care and could provide rich, information-rich perspectives relevant to the study's research questions.

Sample Size Justification

A sample of 17 participants was appropriate for this study's qualitative exploratory case study design and research aims. Qualitative research seeks depth of understanding rather than statistical generalizability, and studies employing in-depth interviews commonly reach thematic saturation within a comparable range of participants. Hennink and Kaiser (2022) reported that saturation is often achieved between nine and seventeen interviews, with larger samples contributing to meaning saturation and richer thematic development. The present sample was drawn from a bounded system consisting of alternative education programs within a single metropolitan region and included participants with direct experience

implementing trauma-informed care. Consequently, the sample size was sufficient to support robust thematic analysis and the identification of recurring patterns across participant experiences. However, a sample of this size would not be appropriate for studies seeking statistical generalization, population-level comparisons, or examination of regional variation in trauma-informed care implementation. Such objectives would require substantially larger samples and quantitative or mixed-methods approaches. The purpose of the present study was not statistical generalization but the development of rich, contextualized understanding of educators' lived experiences implementing trauma-informed care in alternative education settings.

Participant Inclusion and Exclusion Criteria

Inclusion criteria required that participants be currently employed in an alternative education setting within the greater Washington, D.C., metropolitan area, serve in a role as a teacher, administrator, or social worker, and possess a minimum of two years of direct experience implementing or supporting trauma-informed care (TIC) practices. These criteria ensured that participants had sufficient professional experience and firsthand knowledge to provide meaningful insight into TIC implementation. Participants were excluded if they had less than two years of TIC-related experience, worked exclusively in traditional (non-alternative) educational settings, or held positions without direct and regular student contact, such as exclusively administrative, operational, or facilities-based roles. Because the purpose of the study was to explore lived experiences of TIC implementation, participation required sustained engagement with students and direct involvement in trauma-informed practices.

Data Collection Procedures

Data were collected through semi-structured individual interviews with 13 participants and a focus group with 4 participants. This combination was selected to capture both individual experiences and perspectives as well as insights generated through group interaction and discussion. Individual interviews lasted approximately 45 to 60 minutes, and the focus group lasted approximately 90 minutes. All sessions were audio-recorded with participant consent and transcribed for analysis.

The semi-structured interview format was selected

because it provided consistency across participants while allowing greater depth in exploring experiences. Interview and focus group questions were aligned with the study's five research questions and explored participants' experiences implementing trauma-informed care (TIC), challenges encountered during implementation, effective practices and strategies, approaches to integrating TIC with traditional educational expectations, and perceptions regarding the evolution of TIC over time. Sample questions included: "Can you describe a time when a trauma-informed approach changed the outcome of a difficult situation with a student?" and "What barriers, if any, interfere with the consistent implementation of trauma-informed practices in your role?" Follow-up and probing questions were used as needed to clarify responses and encourage participants to elaborate on emerging ideas and experiences.

Ethical Considerations

This study received approval from the University of Phoenix Institutional Review Board (IRBNet Project #2211306-2) on August 29, 2024, through an expedited review process prior to participant recruitment and data collection. All participants provided informed consent after receiving information regarding the study's purpose, procedures, voluntary nature, potential risks and benefits, and their right to withdraw at any time without penalty. Confidentiality was protected through the use of pseudonyms in all transcripts, field notes, and reporting, and identifying details, including specific school names and potentially identifying program characteristics, were removed or generalized prior to analysis. To further protect participant anonymity while preserving the authenticity of the findings, all quotations presented in the Findings section are attributed using researcher-assigned pseudonyms rather than participants' actual names or professional titles. Audio recordings, transcripts, consent forms, and research materials were stored on a password-protected and encrypted device accessible only to the researcher and were retained in accordance with University of Phoenix data security and record-retention requirements. Given the sensitive nature of trauma-related discussions, participants were reminded that they could decline to answer any question and were provided with information regarding available support resources should participation raise difficult personal or professional concerns.

Data Analysis

Data were analyzed using Braun and Clarke's (2006) six-phase thematic analysis framework. The analytic process involved familiarization with the data, generation of initial codes, identification of candidate themes, review and refinement of themes, definition and naming of themes, and preparation of the final report. Interview and focus-group transcripts were reviewed multiple times to identify recurring patterns, meanings, and relationships related to participants' experiences implementing trauma-informed care in alternative education settings. Coding was conducted systematically across all transcripts to ensure that themes were grounded in participants' accounts and consistently reflected the patterns emerging throughout the dataset.

Trustworthiness

Several strategies were employed to enhance the trustworthiness of the study. Member checking was used to verify the accuracy of participant perspectives and researcher interpretations. Triangulation across individual interviews, the focus group, and multiple participant roles (teachers, administrators, and social workers) strengthened the credibility of the findings. In addition, reflexive journaling was maintained throughout the research process to document analytic decisions, monitor researcher assumptions, and promote transparency during data interpretation. Collectively, these strategies enhanced the credibility, dependability, confirmability, and overall rigor of the study's findings.

Findings

Six primary themes emerged from the thematic analysis of interview and focus group data. These themes collectively illuminate the complexity of TIC implementation in alternative education settings and capture both the meaningful progress educators have made and the entrenched structural obstacles they must navigate in order to serve students effectively. Together, the themes offer a nuanced and practitioner-grounded portrait of TIC in action.

Theme 1: Challenges in Implementing Trauma-Informed Care

Participants consistently identified trust-building as both the most fundamental and the most challenging

aspect of TIC implementation. Students who have experienced institutional betrayal, through punitive discipline, inconsistent adult relationships, and the chronic neglect of systems designed to serve them, often arrive in alternative settings with profound and well-founded mistrust of authority figures. One participant reflected, “The biggest challenge is getting through that barrier and being able to show them that this is a safe space.” Sustained consistency, authenticity, and highly personalized engagement were described by multiple participants as prerequisite foundations without which no TIC strategy could meaningfully take hold or produce lasting change.

External trauma further complicated implementation in ways participants found emotionally taxing and practically difficult to address. Students returned each day to unsafe home environments, neighborhoods marked by violence, and caregivers themselves carrying unresolved trauma. As one administrator observed, “We’re trying to undo years of trauma in the few hours we have them each day.” Intergenerational trauma among families created additional barriers, with some caregivers’ own histories of institutional harm producing deep distrust of school-based mental health services, limiting the family collaboration that holistic TIC requires. Structural barriers, including insufficient professional development, high staff turnover, and inadequate resources, compounded these relational challenges, consistent with Huo et al. (2023), who identified systemic resource constraints as a primary implementation barrier across institutional settings. Participant I9 tied this mistrust directly to authenticity, observing that students “can pick up on things where if they feel that you are not being genuine,” and noting that “if you’re genuine and try to build a relationship with them, they’ll see that you care about them.”

Theme 2: Positive Behavioral and Academic Transformations Through TIC

Despite formidable challenges, participants reported meaningful and observable improvements in student behavior and academic engagement when TIC was applied with consistency and genuine relational investment. Students who initially presented as guarded, defensive, and academically disengaged gradually demonstrated greater willingness to participate in learning, improved emotional self-regulation, and renewed trust in adult support. These

behavioral shifts correlated with improved attendance, reduced disciplinary referrals, and for some students, a renewed sense of academic possibility that they had abandoned long before arriving in alternative settings. Bethell et al. (2019) demonstrated that positive school experiences can significantly buffer the long-term effects of ACEs on adult health, a buffering effect participants described witnessing in real time as students began, over months and sometimes years, to exhibit genuine resilience and a developing sense of personal agency. Participant F1, an administrator, described this shift directly: “Students become less defensive around authority figures. Initially, they come in ready to fight or shut down, but as we continue to show up for them and build that trust, they start engaging more.” Echoing this progression, Participant I1 linked the change to measurable outcomes, explaining that once relational strategies were consistently in place, “we saw the students’ attendance increase” alongside a marked decline in impulsive disciplinary incidents.

Theme 3: Effective Trauma-Informed Practices

Participants identified restorative conflict resolution, mindfulness exercises, flexible scheduling, calming spaces, and relationship-centered instruction as consistently effective approaches. Relationship-centered instruction, prioritizing genuine human connection before academic content, was described by nearly all participants as the single most essential feature of effective TIC practice. The HEARTS model’s emphasis on embedding TIC across all levels of the institutional system rather than limiting it to individual classrooms was echoed by participants who stressed that individual educator efforts were insufficient without corresponding systemic commitment (Dorado et al., 2016). Cultural responsiveness emerged as an indispensable dimension: acknowledging students’ cultural identities, honoring their community contexts, and designing interventions that reflect their lived realities were foundational to the trust TIC depends upon. Paris (2021) advocated for culturally sustaining pedagogies that actively affirm rather than merely accommodate students’ cultural backgrounds, a principle participants operationalized daily. As Participant F3 explained, safety was built through structured, low-stakes dialogue: “We hold open forums or circles where students can share whatever’s on their mind without fear of judgment or punishment.” Participant

I13 connected this same sense of safety to relational predictability, noting that effective practice meant “making sure that you have a safe and predictable relationship with your students, making sure that the students feel safe and like their mental state is good.”

Theme 4: Integrating TIC With Traditional Methods

A persistent tension involved reconciling trauma-informed approaches with regulatory frameworks requiring standardized curricula, behavioral codes, and accountability measures not designed with TIC principles in mind. Participants described navigating this as a constant balancing act, honoring students’ needs for safety and relational connection while meeting institutional requirements for academic progress and behavioral compliance. Several participants developed hybrid approaches embedding TIC principles within existing instructional frameworks rather than treating TIC as a separate program. The most effective integration occurred when administrators actively championed rather than merely permitted these adaptations. Anderson et al. (2015) documented that professional development models supporting context-specific TIC translation were associated with more durable implementation, a finding participants accounts affirmed consistently. Participant I6, a school principal, described bringing in outside clinical capacity to bridge this gap, explaining, “I had the opportunity to reach out and bring in multiple therapeutic services, and multiple mental health services in the building, because I understood the need” given how many students had experienced trauma. Participant I9 similarly pointed to ongoing data review as a stabilizing mechanism, noting that the team was “able to gather data to make improvements” and to identify “the trends” that guided adjustments to practice.

Theme 5: The Evolution of Trauma-Informed Care Practices

Participants reflected on developmental trajectories from deficit-oriented frameworks, understanding challenging behavior primarily as a character or disciplinary problem, toward strength-based, trauma-informed perspectives developed through experience, mentorship, and in some cases formal training. This arc underscores that genuine TIC adoption is an ongoing professional learning process rather than a one-time training event. The broader field has

similarly evolved: Eggleston et al. (2021) documented the growing integration of trauma-responsive approaches into PreK-12 discipline frameworks, marking a meaningful cultural shift away from zero-tolerance models toward restorative and relationally grounded alternatives. Participants noted increased institutional awareness of TIC over their careers, while characterizing this shift as still incompletely realized, reflecting meaningful progress alongside substantial remaining work. Participant F1 captured this incomplete progress starkly, stating, “we need more mental health professionals in schools,” because “the demand is just too high for the few counselors we have.” Participant F3 pointed to a similar resource gap beyond the school walls, calling for “housing services, and even law enforcement, to create a broader support system for our students.”

Theme 6: Stakeholder Perceptions of Students

The final theme addressed how educator perceptions of students shaped TIC implementation. Participants described wide and consequential variation within institutions, from compassionate strengths-based orientations to deficit-focused perspectives that treated challenging behavior as evidence of poor character. Colleagues operating from a deficit lens were identified as significant barriers to TIC fidelity, undermining the consistency students need. Participants holding trauma-informed perceptions described a transformative reorientation, moving from “this student is defiant” to “this student is scared and doing the best they can.” This perceptual shift fundamentally altered both educator-student relationships and the efficacy of subsequent interventions. Boyd et al. (2022) found that strength-based perceptions of Black youth affected by community violence are associated with meaningfully better mental health outcomes, underscoring the profound importance of practitioner mindset. Participant F3 described this shift in stakeholder perception as one of the most rewarding outcomes of the work: “It’s seeing students find their voice. Many of our students come in feeling like they don’t have a say in their lives, but through trauma-informed practices, we help them realize that they do have power and agency.”

Discussion and Implications

The findings carry important implications across

practice, policy, and professional development. At the practitioner level, the data confirm that relationship-building is the irreducible foundation of effective TIC. No curriculum or structured program substitutes for the consistent, authentic presence of an adult who understands trauma and responds with compassion and genuine belief in student potential. Educators in alternative settings need institutional permission, protected time, and adequate support to invest meaningfully in relationships with students, and they need training to sustain that investment through the emotionally demanding realities of this work. Anyon et al. (2018) found that educators who prioritized relational strategies in preventing exclusionary discipline consistently identified cultural recognition and respect as foundational to those relationships, a convergence the present findings strongly affirm. Cultural responsiveness must be treated not as supplementary but as a core dimension of TIC in any setting serving diverse populations.

At the institutional level, systemic TIC implementation is imperative. Administrators play decisive roles in creating conditions under which TIC can flourish: embedding trauma-informed principles in school culture, revising punitive discipline policies, allocating meaningful resources for professional development, and building sustained community partnerships. Schools that relegate TIC to a peripheral program or occasional workshop rather than embedding it in organizational identity will continue producing the fragmented and unsustainable implementation that participants described. At the policy level, the chronic under-resourcing of alternative education settings represents a structural injustice that TIC alone cannot remedy. Policymakers and funding bodies must commit sustained investment in TIC infrastructure, educator support, and community partnership in these settings, recognizing that meeting the needs of the most vulnerable students demands the most robust institutional commitment.

Limitations and Assumptions

Several limitations should be considered when interpreting these findings. First, the study involved a relatively small purposive sample of 17 participants from alternative education settings within the Washington, D.C., metropolitan area. While appropriate for qualitative inquiry, the findings are

not intended to be statistically generalizable to all educational contexts. Second, participant accounts relied on self-reported experiences, creating the possibility of recall bias or social desirability bias. Third, because the study focused exclusively on educator perspectives, the findings do not capture the experiences of students, families, or community stakeholders who may hold different perspectives regarding TIC implementation. Finally, organizational and regional factors unique to the study setting may limit transferability to other geographic locations.

The study was guided by several assumptions. It was assumed that participants would provide honest and accurate descriptions of their experiences, that participants possessed sufficient knowledge of trauma-informed care practices to discuss implementation meaningfully, and that the interview and focus-group formats would facilitate open and authentic dialogue regarding both successes and challenges associated with TIC implementation.

Recommendations

These recommendations are consistent with emerging research emphasizing that successful trauma-informed care implementation requires sustained professional development, organizational commitment, culturally responsive practice, and cross-sector collaboration (Anderson et al., 2015; Huo et al., 2023; Joseph-McCatty et al., 2024). The findings of this study reinforce and extend these recommendations within the specific context of alternative education settings serving Black and Brown adolescents. Based on the study findings, four recommendations are offered.

First, alternative education programs should invest in ongoing, contextualized professional development that extends well beyond introductory TIC training to include culturally responsive frameworks, practical skill-building grounded in educators' actual institutional contexts, and sustained reflective supervision. This recommendation is supported by Anderson et al. (2015), who found that school-university partnership models emphasizing context-specific implementation produced more durable trauma-informed practice than standardized training alone. Consequently, one-time workshops are unlikely to build sustainable educator capacity; instead, continuous professional learning communities and

reflective supervision should be prioritized to support long-term implementation.

Second, school leaders should systematically examine institutional culture and policies to identify practices that inadvertently re-traumatize students, replacing punitive and zero-tolerance approaches with restorative alternatives that maintain high expectations while prioritizing relational repair and student dignity. This recommendation aligns with the HEARTS framework, which emphasizes whole-school implementation rather than isolated classroom interventions (Dorado et al., 2016). Together, the current findings and existing research suggest that sustainable trauma-informed care requires organizational change rather than relying solely on individual educator efforts.

Third, alternative education programs should establish and sustain partnerships with community mental health providers, social service agencies, and families to create comprehensive wraparound systems of support that extend trauma-informed care beyond the classroom. This recommendation is consistent with Huo et al. (2023), who identified cross-sector collaboration and organizational support as essential facilitators of successful and sustainable trauma-informed implementation. Such partnerships recognize that addressing trauma requires coordinated efforts across the multiple environments influencing students' lives.

Fourth, trauma-informed care competencies—including foundational trauma awareness, culturally responsive practice, and strength-based student engagement—should be intentionally incorporated into recruitment, hiring, induction, and ongoing professional development for all school personnel, including teachers, administrators, counselors, security staff, and support personnel. This recommendation is supported by Joseph-McCatty et al. (2024), who argued that culturally responsive and intersectional trauma-informed practice depends on organization-wide commitment rather than reliance on individual specialists. Embedding these competencies across the workforce can help establish trauma-informed care as a sustained organizational culture rather than an isolated initiative.

Future Research

Future research should expand understanding

of trauma-informed care implementation across diverse educational contexts. Comparative studies examining TIC implementation in traditional public schools, charter schools, and alternative education settings could help identify context-specific facilitators and barriers. Research involving larger and more geographically diverse samples would strengthen understanding of regional variations in implementation practices. Future investigations should also incorporate student, family, and community stakeholder perspectives to provide a more comprehensive understanding of how trauma-informed practices are experienced across educational systems. Additionally, mixed-methods and longitudinal studies could examine the long-term effects of TIC implementation on academic outcomes, behavioral indicators, attendance, graduation rates, and student well-being. Given the intersectional nature of trauma among Black and Brown adolescents, future studies should further explore how race, gender, socioeconomic status, and community context shape both trauma experiences and responses to trauma-informed interventions.

Conclusion

The lived experiences of educators in alternative education settings reveal both the transformative potential of trauma-informed care (TIC) and the persistent structural barriers that continue to impede its full implementation. For Black and Brown adolescents whose educational experiences have been shaped by chronic and compounding adversity, a consistently implemented, culturally responsive TIC approach is more than a pedagogical strategy; it can be a catalyst for healing, engagement, and educational success. Participants in this study described how trust, safety, and authentic relationships create opportunities for students to reconnect with learning, develop resilience, and envision new possibilities for their futures.

Building on the findings of this study, the following theoretical proposition is advanced for future investigation: when trauma-informed care is implemented through culturally responsive, relationship-centered, and systemically supported practices, educators are more likely to establish trust-based learning environments that improve student engagement, behavioral outcomes, and educational persistence among trauma-affected youth. Future

research should examine this proposition across diverse educational settings, student populations, and geographic contexts to determine its transferability and broader theoretical applicability.

Ultimately, the challenge facing the field is not whether trauma-informed care works, but whether educational systems are willing to invest in the conditions necessary for its sustained success. Achieving this requires organizational commitment, adequate resources, informed leadership, meaningful policy reform, and ongoing professional development. By centering the voices and expertise of educators working directly with trauma-affected youth, this study contributes to a growing body of knowledge that calls for trauma-informed care to become a systemic and enduring feature of educational practice rather than the isolated effort of individual practitioners. Every student, regardless of circumstance, deserves a learning environment that prioritizes safety, dignity, belonging, and the opportunity to thrive.

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A Systems-Level Framework for Autonomy, Trust, and Workforce Engagement in AI-Enabled Organizations

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Abstract

The integration of artificial intelligence (AI) into organizational systems is transforming work design, decision-making processes, and employee experiences across contemporary workplaces. Although worker autonomy, institutional trust, and workforce engagement have been widely studied within organizational research, these constructs are often examined in isolation, limiting understanding of how they interact within AI-enabled environments. This article proposes a systems-level conceptual framework in which AI integration influences employee autonomy, which in turn shapes institutional trust and subsequently workforce engagement. The framework conceptualizes AI as both enabling and constraining employee autonomy depending on how technological systems are designed and implemented within organizations. Grounded in socio-technical systems theory and self-determination theory, the framework further reconceptualizes institutional trust as a dual-target construct encompassing trust in both organizational leadership and algorithmic systems. By integrating technological, motivational, and institutional perspectives, the framework offers theoretical and practical insights for designing AI-enabled workplaces that support autonomy, foster institutional trust, and sustain workforce engagement.

Keywords: Artificial intelligence, AI-Enabled organizations, autonomy, human-AI interaction, organizational trust, socio-technical systems, systems theory, workforce engagement, workplace technology

Introduction

The rapid development and adoption of artificial intelligence (AI) technologies is increasingly reshaping how organizations design work, allocate decision authority, and coordinate human and technological systems. Advances in machine learning, predictive analytics, and generative AI have expanded the role of AI from supporting routine automation toward augmenting human decision-making and knowledge work across a wide range of organizational contexts

(Kellogg et al., 2020; Raisch & Krakowski, 2021). As AI systems become embedded within organizational infrastructures, their influence extends beyond operational efficiency to include broader implications for work design, organizational governance, and employee experiences in the workplace.

At the same time, many organizations are confronting growing concerns about employee engagement, workplace trust, and career stability. Research on contemporary work environments suggests that burnout and occupational stress remain significant

organizational challenges affecting employee well-being, productivity, and retention (Pladdys et al., 2024). In this context, the adoption of AI technologies is not only a technical or operational issue but also a human and institutional one, raising important questions about how technological systems influence employees' experiences of autonomy, trust, and engagement at work (Glikson & Woolley, 2020; Malik et al., 2022). These workforce challenges have intensified interest in how organizations can cultivate institutional trust, support employee autonomy, and sustain engagement in environments increasingly shaped by emerging technologies.

Within organizational research, workforce engagement is widely recognized as an important predictor of employee performance, organizational commitment, and overall organizational effectiveness (Bailey et al., 2017; Saks, 2022). Engagement refers to the degree to which employees invest cognitive, emotional, and behavioral energy into their work roles, reflecting a deep sense of involvement, purpose, and connection with organizational activities (Kahn, 1990). High levels of engagement have been associated with improved performance, stronger collaboration, and greater resilience in the face of organizational change. However, technological transformations, particularly those involving algorithmic decision systems and automated management processes, may influence how employees experience their roles within organizations.

Self-determination theory provides an important theoretical basis for understanding these dynamics. The theory proposes that human motivation and engagement are influenced by the satisfaction of fundamental psychological needs, including autonomy, competence, and relatedness (Ryan & Deci, 2017). Among these needs, autonomy, defined as the perception that one has meaningful control over one's actions and decisions, plays a particularly important role in shaping motivation and workplace engagement. Organizational environments that support employee autonomy tend to foster higher levels of motivation, well-being, and engagement, whereas environments that restrict autonomy may weaken motivation and diminish employee commitment (Ryan & Deci, 2000a; Slemp et al., 2015).

At the same time, institutional trust represents another important dimension of organizational functioning. Trust in organizational systems and leadership influences employees' willingness to cooperate with

organizational goals, accept technological change, and invest effort in their work roles (Fulmer & Dirks, 2018; Mayer et al., 1995). In technology-mediated workplaces, institutional trust may also extend to employees' perceptions of algorithmic systems that influence work processes and decision-making. When employees perceive organizational systems, including technological systems, as fair, transparent, and accountable, they may be more likely to develop trust in those systems and remain engaged in their work.

Despite the growing literature on AI adoption, employee engagement, and organizational trust, comparatively fewer studies have examined how these dynamics interact within integrated organizational systems (Kellogg et al., 2020; Raisch & Krakowski, 2021). Much of the existing research on AI implementation focuses on technological performance, operational efficiency, or algorithmic governance. Less attention has been devoted to understanding how AI integration may indirectly influence workforce engagement through intermediate organizational mechanisms such as work design and institutional trust. Addressing this gap is important because the success of AI-enabled organizational systems may depend not only on technological capabilities but also on how those technologies interact with human motivational processes and institutional relationships within organizations.

To address this gap, the present article proposes a systems-level conceptual framework linking AI integration, worker autonomy, institutional trust, and workforce engagement, as illustrated in Figure 1. Within the framework, AI integration is conceptualized as a technological driver that may reshape work design and employees' perceptions of autonomy. These perceptions of autonomy may subsequently influence the development of institutional trust within organizations, which in turn may affect workforce engagement. The framework also incorporates feedback relationships in which workforce engagement may influence institutional trust and future decisions regarding AI integration, reflecting the adaptive nature of organizational systems. By integrating insights from organizational behavior, motivation theory, and emerging research on AI in the workplace, this article contributes a conceptual model that clarifies how AI-enabled organizational systems may influence workforce engagement through the intermediary mechanisms of worker autonomy and institutional trust.

The purpose of this article is to present a systems-level framework that examines how artificial intelligence integration may influence workforce engagement through its relationships with employee autonomy and institutional trust within contemporary organizations.

Conceptual Framework

The conceptual framework proposed in this article is grounded in a socio-technical perspective in which technological systems influence organizational outcomes through intermediate organizational and psychological mechanisms rather than through direct technological effects alone. Socio-technical systems theory suggests that technological infrastructures interact with organizational structures, work practices, and human actors to shape organizational outcomes (Baptista et al., 2020; Emery & Trist, 1960; Leonardi, 2020). Within this perspective, artificial intelligence integration represents a structural transformation in organizational technology that may reshape work design and the allocation of decision authority within organizations.

Figure 1 presents the systems-level conceptual framework linking AI integration, worker autonomy, institutional trust, and workforce engagement. In the proposed model, AI integration is conceptualized as the technological driver within the organizational system. The framework suggests that AI integration may influence workforce engagement indirectly through two intermediate mechanisms: worker autonomy and institutional trust. Specifically, AI integration may reshape work design and the allocation of decision authority, which may influence employees' perceptions of autonomy in their work roles. These perceptions of autonomy may subsequently contribute to the development of institutional trust within organizations. Institutional trust, in turn, may influence workforce engagement by shaping employees' willingness to invest cognitive, emotional, and behavioral energy in their work roles.

In addition to these forward relationships, the framework incorporates feedback dynamics that reflect the adaptive nature of organizational systems. Workforce engagement may reinforce institutional trust through ongoing relational interactions within organizations, while employee responses to AI-enabled systems may influence future organizational decisions regarding the design, governance, and integration of

AI technologies. These feedback relationships reflect the reciprocal interactions characteristic of socio-technical systems, where technological infrastructures and human organizational processes evolve together over time.

By integrating technological, motivational, and institutional perspectives, the framework provides a structured foundation for understanding how organizations may implement AI technologies in ways that influence employee experiences and workforce engagement. The following sections examine each construct within the framework and the theoretical relationships connecting them, beginning with AI integration as the technological component of the system.

Artificial Intelligence and Changing Work Design

AI integration refers to the incorporation of AI-enabled technologies into organizational processes, decision-making systems, and operational workflows. Recent advances in machine learning, predictive analytics, and generative AI have expanded the role of AI from task automation toward decision augmentation and knowledge generation across a wide range of organizational contexts (Kellogg et al., 2020; Raisch & Krakowski, 2021). Organizations increasingly deploy AI systems to support activities such as customer interaction, operational forecasting, medical diagnostics, logistics optimization, and knowledge work, reflecting the growing influence of AI on both routine and complex work processes (Dwivedi et al., 2021).

As these technologies become embedded within organizational infrastructures, their influence extends beyond productivity improvements to include broader implications for work design, employee experiences, and organizational governance. In many organizational settings, AI systems function as decision-support tools that assist human judgment by processing large volumes of data and generating analytical insights. In other contexts, AI technologies operate as algorithmic management systems in which automated decision rules influence task allocation, scheduling, performance monitoring, or evaluation processes (Kellogg et al., 2020; Li et al., 2025). These differing implementation approaches may lead to substantially different organizational outcomes because they shape

how decision authority is distributed between human workers and technological systems.

From a socio-technical perspective, the effects of AI integration depend not only on technological capabilities but also on how organizations structure the interaction between human workers and intelligent systems. Socio-technical systems theory suggests that technological infrastructures interact with social structures, work practices, and institutional norms to shape organizational outcomes (Baptista et al., 2020; Leonardi, 2020). Within this perspective, AI technologies are best understood as components of broader organizational systems in which technological infrastructures and human actors mutually influence one another.

These dynamics are particularly relevant to work design, which refers to the structure of tasks, responsibilities, and decision authority within organizations. Work design research suggests that technological change can reshape the allocation of decision authority and the degree of autonomy employees experience in their work roles (Liu et al., 2025; Parker et al., 2017). In AI-enabled workplaces, algorithmic systems may provide employees with advanced analytical capabilities that expand decision-making capacity and enhance perceived autonomy. Conversely, when algorithmic systems tightly control task execution or continuously monitor employee performance, workers may perceive reduced control over their work processes.

Research suggests that employees' responses to AI technologies depend significantly on how these systems are implemented and communicated within organizational contexts. Factors such as perceived transparency, fairness, and accountability of algorithmic systems appear to influence employee acceptance of AI-enabled decision processes (Lee et al., 2015; Malik et al., 2022). When organizations clearly communicate how AI systems function and maintain human oversight in critical decisions, employees may be more likely to perceive these technologies as supportive tools rather than sources of control.

Collectively, these findings indicate that AI integration may represent more than technological innovation and may instead reflect a structural transformation in how work is designed and coordinated within organizations. Within the framework proposed in this article, AI integration therefore functions as

the technological driver that may influence worker autonomy within organizational environments. By shaping decision authority, information flows, and task coordination, AI-enabled systems may indirectly shape employees' perceptions of autonomy in their work roles.

Worker Autonomy in AI-Supported Work Environments

Worker autonomy refers to the degree to which employees perceive that they have meaningful control over how they perform their work tasks, make decisions, and organize their activities within organizational roles. Within organizational research, autonomy is widely recognized as a central dimension of work design and an important predictor of employee motivation, satisfaction, and engagement (Parker et al., 2017; Slemp et al., 2015). Employees who experience higher levels of autonomy in their work roles are generally more likely to demonstrate initiative, creativity, and sustained involvement in organizational activities.

Self-determination theory provides an important theoretical foundation for understanding the role of autonomy in workplace motivation. According to self-determination theory, autonomy represents a fundamental psychological need that supports intrinsic motivation and well-being (Ryan & Deci, 2017). When employees perceive that they have the freedom to exercise judgment, make meaningful choices, and influence their work processes, they are more likely to experience a sense of ownership and engagement in their roles. Conversely, organizational environments that restrict decision-making authority or impose rigid control mechanisms may undermine motivation and reduce employees' sense of agency.

The integration of AI technologies into organizational systems is increasingly influencing how employees interact with work processes and decision-making structures. In AI-supported environments, technological systems may shape the degree of discretion employees experience in carrying out their work tasks. A growing body of interdisciplinary research has begun examining the organizational, technological, and human implications of AI adoption in contemporary workplaces (Dwivedi et al., 2023; Glikson & Woolley, 2020; Raisch & Krakowski, 2021). In some contexts, AI systems operate as decision-

support tools that enhance employees' ability to process information, evaluate alternatives, and make informed decisions. In such cases, these technologies may augment human capabilities and potentially expand employees' perceived autonomy in their work roles. For example, AI-enabled analytical tools may allow workers to access real-time insights or predictive forecasts that support independent decision-making.

In other organizational settings, AI technologies may function as algorithmic management systems in which automated decision rules guide or constrain employee behavior. Algorithmic systems may influence task allocation, performance monitoring, scheduling, or evaluation processes, thereby shaping how employees carry out their work (Kellogg et al., 2020). When such systems impose strict decision rules or limit employees' discretion, workers may perceive reduced control over their work activities. These contrasting implementation approaches suggest that AI integration may influence autonomy in different ways depending on how technological systems are designed and governed within organizations.

Emerging empirical research indicates that employees' perceptions of autonomy in AI-supported environments depend not only on the technological capabilities of AI systems but also on organizational practices that govern their implementation. Factors such as transparency, accountability, and opportunities for human oversight appear to influence whether employees perceive AI systems as supportive tools or as mechanisms of control (Glikson & Woolley, 2020; Malik et al., 2022). When organizations implement AI technologies in ways that preserve human judgment and communicate clearly about algorithmic processes, employees may be more likely to perceive these technologies as enhancing rather than restricting autonomy.

Within the conceptual framework proposed in this article, worker autonomy represents the first organizational mechanism through which AI integration may influence broader organizational outcomes. By shaping employees' perceptions of decision authority and control over their work processes, AI-enabled work systems may influence how employees evaluate their relationship with organizational structures and leadership. These perceptions of autonomy may therefore contribute to the development of institutional trust within organizations, which represents the next component of the framework.

Institutional Trust in AI-Enabled Workplaces

Institutional trust refers to employees' confidence in the fairness, reliability, and integrity of the organizational systems and leadership structures that guide workplace activities. Within organizational research, institutional trust has been widely associated with cooperation, commitment, and positive workplace attitudes (Fulmer & Dirks, 2018; Mayer et al., 1995). Employees who trust organizational systems and leadership are generally more willing to support organizational goals, adapt to change, and invest effort in their work roles.

Trust becomes particularly important during periods of technological transformation, when employees may face uncertainty regarding how new systems will influence work processes, decision authority, or job security. The introduction of AI technologies into organizational environments may therefore influence not only operational workflows but also employees' perceptions of the institutional structures governing those technologies. In AI-enabled workplaces, employees may develop perceptions of trust not only toward organizational leadership but also toward the technological systems that shape their work experiences.

Recent research suggests that employees' trust in AI systems depends significantly on perceptions of transparency, fairness, and accountability in algorithmic decision-making processes (Glikson & Woolley, 2020; Malik et al., 2022). When AI systems influence decisions related to task allocation, scheduling, or performance evaluation, employees may evaluate whether these systems operate in ways that are understandable, consistent, and aligned with organizational values. Transparent communication regarding how AI systems function, along with opportunities for human oversight or appeal, may help foster trust in technologically mediated organizational processes.

Worker autonomy may play an important role in shaping these trust perceptions. When employees experience autonomy-supportive work environments, they may perceive organizational systems and leadership practices as more fair, supportive, and trustworthy. Organizational trust research suggests that trust develops through repeated experiences

with institutional structures that signal competence, integrity, and benevolence (Fulmer & Dirks, 2018; Mayer et al., 1995). In AI-enabled workplaces, employees' experiences with algorithmic systems may therefore contribute to broader evaluations of whether organizational institutions operate in trustworthy ways.

Conversely, when technological systems restrict employee discretion, reduce transparency, or are perceived to prioritize efficiency over fairness, employees may develop concerns regarding institutional integrity and accountability. Algorithmic systems that influence performance evaluation or career opportunities may generate perceptions of procedural unfairness if employees do not understand how decisions are made or how they can contest those decisions. Such perceptions may weaken trust in both organizational leadership and the technological infrastructures guiding workplace decisions.

Within the conceptual framework proposed in this article, institutional trust represents the relational mechanism through which employee experiences with work design and technological systems influence broader organizational attitudes. When employees perceive organizational institutions and technological systems as trustworthy, they may be more willing to cooperate with organizational goals and remain psychologically invested in their work roles. These dynamics are particularly relevant to workforce engagement, which represents the central behavioral outcome of the framework.

Workforce Engagement as a System Outcome of AI Integration

Workforce engagement represents the degree to which employees invest cognitive, emotional, and behavioral energy in their work roles and organizational activities. Engagement research suggests that employees who are highly engaged tend to demonstrate stronger commitment to organizational goals, greater persistence in the face of challenges, and higher levels of performance and collaboration (Bailey et al., 2017; Saks, 2022). As a result, workforce engagement has become an important focus within organizational research and leadership practice, particularly in environments characterized by rapid technological change.

The concept of engagement is commonly traced to

the foundational work of Kahn (1990), who described engagement as the psychological presence employees bring to their work roles. According to this perspective, engaged employees express themselves physically, cognitively, and emotionally while performing their work tasks. Engagement therefore reflects a deeper form of involvement than simple job satisfaction or organizational commitment, encompassing the extent to which employees actively invest their energy and identity in their roles.

Workforce engagement is understood as a behavioral outcome that emerges from the interaction of technological, organizational, and psychological conditions within AI-enabled workplaces. Specifically, the framework suggests that employees' experiences with AI-supported work systems may influence engagement indirectly through the intermediate mechanisms of worker autonomy and institutional trust. When AI technologies are implemented in ways that support employees' sense of autonomy and reinforce trust in organizational systems, employees may be more likely to remain engaged in their work roles and committed to organizational objectives.

Conversely, AI implementations that restrict autonomy or undermine trust may reduce employees' willingness to invest effort and psychological energy in their work activities. For example, highly restrictive algorithmic management systems that tightly monitor employee behavior or limit decision-making discretion may generate perceptions of reduced control or fairness. Such perceptions may weaken employees' psychological attachment to their work roles and diminish engagement over time.

Engagement therefore represents not only an individual-level psychological state but also an outcome of broader organizational systems that shape employees' work experiences. In AI-enabled organizations, workforce engagement may reflect how successfully technological systems are integrated with human work practices and organizational relationships. Organizations that implement AI technologies while preserving employee autonomy and fostering institutional trust may be better positioned to sustain engagement in technologically evolving workplaces.

Within the framework proposed in this article, workforce engagement also plays an adaptive role within organizational systems. Engaged employees may contribute to collaborative organizational

cultures, reinforce trust-based relationships, and support organizational learning processes that influence future decisions regarding technological adoption and governance. In this sense, workforce engagement can be understood both as an outcome of AI-enabled organizational systems and as a contributor to how those systems evolve over time.

Leadership Implications for AI-Enabled Organizations

The systems-level framework proposed in this article highlights several implications for organizational leaders responsible for integrating AI technologies while sustaining employee autonomy, institutional trust, and workforce engagement. As AI systems become increasingly embedded within organizational processes, leaders are not only responsible for technological implementation but also for managing the broader organizational conditions under which these technologies operate. The framework developed in this article suggests that the organizational outcomes associated with adoption of AI may depend not solely on technological capabilities but also on how AI systems interact with work design, institutional relationships, and employee experiences.

One implication for organizational leadership concerns the design of AI-enabled work systems. Leaders may benefit from considering how AI technologies influence the allocation of decision authority within organizations. When AI systems function primarily as decision-support tools that augment human capabilities, employees may perceive greater autonomy and control over their work activities. In contrast, highly restrictive algorithmic management systems that tightly regulate employee behavior may reduce employees' sense of discretion and agency. Organizational leaders may therefore seek to design AI-enabled work environments that preserve opportunities for human judgment and meaningful decision-making.

A second implication relates to transparency and communication surrounding the implementation of AI technologies. Employees' perceptions of institutional trust may depend significantly on how clearly organizations communicate the purpose, functioning, and governance of algorithmic systems. Leaders who provide transparent explanations regarding how AI systems influence decision-making processes,

particularly in areas such as performance evaluation, scheduling, or resource allocation, may help reduce uncertainty and strengthen employee trust in organizational systems.

A third implication concerns the governance and oversight of AI technologies within organizational contexts. Establishing mechanisms for accountability, human oversight, and procedural fairness may help organizations maintain trust when algorithmic systems influence workplace decisions. When employees perceive that technological systems operate within transparent and accountable governance structures, they may be more likely to view AI technologies as legitimate components of organizational decision-making rather than as opaque sources of control.

Finally, the framework suggests that organizations may benefit from adopting participatory approaches to AI implementation. Engaging employees in discussions regarding how AI systems are introduced and integrated into work processes may foster greater acceptance of technological change and strengthen institutional trust. Participation may also allow organizations to identify potential concerns regarding autonomy, fairness, or transparency before technological systems become fully embedded in organizational workflows.

Collectively, these implications suggest that effective AI integration requires attention not only to technological performance but also to the human and institutional conditions surrounding technological change. Organizational leaders who approach AI implementation as a socio-technical transformation, rather than solely as a technical innovation, may be better positioned to sustain workforce engagement in AI-enabled workplaces.

Conclusion

The integration of AI into organizational systems represents an important shift in contemporary workplaces. As organizations increasingly rely on AI-enabled technologies to support decision-making, automate processes, and augment human capabilities, understanding how these technologies influence workforce experiences has become an important area of inquiry. While much of the existing research on AI adoption has focused on technological performance or implementation challenges, comparatively fewer

studies have examined how AI integration interacts with organizational design and human motivational processes to influence workforce engagement.

The conceptual framework presented in this article provides a systems-level perspective for examining these relationships by integrating insights from organizational behavior, motivation theory, and socio-technical systems research into a unified model explaining how AI-enabled organizational systems may influence workforce engagement. Specifically, the framework proposes that AI integration may influence workforce engagement indirectly through intermediate organizational mechanisms involving worker autonomy and institutional trust. By shaping work design and the allocation of decision authority, AI technologies may influence employees' perceptions of autonomy in their work roles. These perceptions may subsequently contribute to the development of institutional trust within organizations, which has been widely associated with cooperation, commitment, and positive workforce outcomes.

Importantly, the framework also highlights the dynamic nature of organizational systems by incorporating feedback relationships between workforce engagement, institutional trust, and technological integration. Employees' responses to AI-enabled work environments may influence organizational learning processes and future decisions regarding technological adoption and governance. In this sense, workforce engagement can be understood not only as an outcome of organizational systems but also as a potential contributor to how those systems evolve over time. Such feedback dynamics are consistent with socio-technical perspectives that emphasize the reciprocal interaction between technological infrastructures and human organizational processes.

From a practical perspective, the framework suggests that organizations seeking to integrate AI technologies effectively may benefit from considering the broader organizational contexts in which these technologies operate. Approaches that preserve employee autonomy, promote transparency in algorithmic decision processes, and maintain trust-based relationships between employees and institutional systems may help organizations integrate technological innovation while sustaining workforce engagement. Conversely, implementations that diminish perceived autonomy or introduce

opaque technological governance structures may risk weakening institutional trust and reducing employee engagement over time.

Future research may further explore the relationships proposed in this framework through empirical studies examining how AI-enabled work systems influence autonomy, trust, and engagement across different organizational contexts. Such research may contribute to a broader understanding of how organizations can design and govern AI technologies in ways that support both technological innovation and positive workforce outcomes. As AI continues to reshape the future of work, integrating insights from organizational behavior, technology management, and socio-technical systems research may remain essential for understanding how technological change interacts with human motivational processes and institutional dynamics within contemporary organizations.

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The Spark: What Entrepreneurs Teach Us About Artificial Intelligence, a Narrative Inquiry

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Abstract

Entrepreneurs are rapidly adopting artificial intelligence (AI) as both a creative partner and an operational resource. However, a semantic review of 50 studies, published between 2024 and 2026 revealed that existing scholarships have focused primarily on AI adoption in education and business enterprises, leaving limited understanding of how individual entrepreneurs use AI to generate ideas, innovate, and build new ventures. To address this gap, this study involved purposeful sampling with a podcast-based interview format to collect and analyze entrepreneurial AI experiences. Using narrative inquiry, investigators examined the lived experience of one entrepreneur—Ron—whose AI journey began with a question at a shooting range. In fewer than four months, Ron's collaboration and communication with his ChatGPT named "Homie" helped him to produce a patented product, a published book, a website, and an operational business. His narrative illustrates how entrepreneurial engagement with AI can support venture development through prompting, iterative questioning, contextual refinement, and collaborative problem-solving. Findings suggest that entrepreneurs provide a vital lens for understanding AI's creative and operational potential. The study offers implications for educators, practitioners, and researchers. Future research could expand narrative samples, compare entrepreneurs' AI experiences across contexts, and examine longitudinal patterns in entrepreneurial AI use.

Introduction

AI Adoption Beyond Institutional Settings

Artificial intelligence (AI) has the potential to transform how work is imagined, organized, and executed (Bandara, et al., 2025). In academic and business settings, AI adoption is often approached with caution, structure, and ethical deliberation (Marguerit, 2025). However, personal conversations with

entrepreneurs across global communities revealed a different reality. Entrepreneurs are using AI urgently, experimentally, and creatively to build new ventures, automate existing processes, and to scale current operations (J. Cardwell, personal communications, 2025-2026). Current scholarship offers limited insight into how individual entrepreneurs, particularly those operating outside the constraints of institutional infrastructures, are using AI in practice. This gap is

significant because entrepreneurs often serve as early adopters and boundary-pushers, revealing emerging forms of creativity, productivity, and autonomy. Understanding entrepreneurial AI experiences is essential for examining how AI is evolving beyond traditional institutions.

What Can We Learn About AI from Entrepreneurs?

This inquiry began not with a hypothesis, but with a question that lingered in the mind of a scholar-practitioner: How are entrepreneurs using AI for ideation, innovation, or upscaling? In academic spaces, AI was integrated cautiously through structured research protocols, ethical reviews, and institutional deliberation (Tillmanns et al., 2025). Similarly in business there are approvals and other protocols needed for integration or adoption of AI (Hwang, 2024). Yet in personal conversations with entrepreneurs across the globe, a different story appears. Entrepreneurs spoke of AI not as a tool but as a collaborator, something they brainstormed with, experimented with, and pushed to its limits (J. Cardwell, personal communications, 2024-2026).

The Collaboration

In March 2026, an email to the Center for Leadership and Entrepreneurial Research (CLER) introduced an entrepreneur who had developed an AI-powered product. That message led a collaboration between two former colleagues—one in Michigan and one in Georgia—who shared a strong interest in how entrepreneurs are using AI to build and grow their businesses.

A single phone call set the collaboration in motion. The two colleagues quickly recognized a shared purpose: one brought a research question in need of deeper inquiry, while the other brought a story that illustrated the very phenomenon under investigation. That story became the “spark” at the center of this narrative inquiry.

Ron’s Narrative Emerges

The collaboration centered on Ron, a Georgia neighbor and retired district manager in the retail food industry, who described an AI-powered project he was developing. For a scholar-practitioner teaching critical thinking and studying business uses of AI, Ron’s story immediately stood out as a meaningful example of entrepreneurial AI practice. His account led to a Zoom conversation between the two collaborators and Ron.

During that meeting, Ron described how a practical question evolved into a larger process of invention, authorship, business formation, and AI-supported problem-solving.

From Observation to Venture

Ron explained that his foray into AI began with a simple observation at a shooting range: “There must be an easier way to zero a scope.” That statement became a question prompt for ChatGPT: “How can I zero a scope?” Beginning in September 2025, Ron spent sustained time using AI to explore and refine answers. His inquiry quickly expanded beyond the original question.

Through iterative prompting and sustained dialogue, Ron developed an AI-powered product, wrote a book chronicling the journey, created a website, and launched a functioning business. Throughout the process, Ron described working with AI by being specific, providing context, refining prompts, clarifying intent, and verifying outputs. He did not treat AI merely as a tool; he engaged AI as a collaborative partner in thinking, designing, and problem-solving.

AI as a Collaborative Guide

Ron’s narrative traced the dynamic interplay between human direction and AI-supported development. By January 2026—only four months after the idea first appeared—his business was operational. He offered concrete examples of using AI to refine the product, navigate intellectual property protections, and secure both a patent and a trademark. He also spoke candidly about the constraints he encountered and the challenges he overcame. Most notably, Ron accomplished developing and patenting a product, authoring a book, and building a functional website, without prior coding or web development experience. Instead, he relied on AI as a guide through unfamiliar technical, creative, and entrepreneurial terrain. Ron’s collaboration with his AI, which he named “Homie” demonstrated how AI served as his collaborative guide.

Entrepreneurial AI a Window into Potential for the Future of Work

Ron’s AI experience and conversations with other entrepreneurs offers a valuable lens for understanding how entrepreneurial practice may foreshadow future patterns of work, innovation, and human-AI collaboration. Scholars have documented how business organizations adopt AI, but much of that work focuses on small and medium-sized enterprises

(SMEs) (Yesuf & Fields, 2025; Wang et al., 2025). Far less is known about how individual entrepreneurs who are often working without formal institutional infrastructure are using AI for ideation, innovation, and scaling. This contrast between institutional caution and entrepreneurial creativity became the central spark for this narrative inquiry.

Literature Background and Context

To situate Ron's experience within the existing scholarly landscape, we conducted a systematic review of recent literature. Using the Elicit search engine, a semantic search tool spanning over 138 million academic papers, we queried: "What are the key findings published after 2024 on the impact of artificial intelligence on entrepreneurial outcomes?" The focus was primarily on research published between 2024 to 2026. This specification was necessary due to the dynamic and rapidly growing influence of AI. The search returned 50 relevant articles.

Across contemporary entrepreneurship research, Artificial Intelligence (AI) consistently emerges as a transformative force reshaping how entrepreneurs sense opportunities, innovate, manage labor, and make strategic decisions. A wide range of recent studies demonstrates that AI is altering entrepreneurial practice at structural, operational, and cognitive levels. Yet, despite this rapidly expanding body of work, a critical gap persists: the literature explains what AI does to or for entrepreneurship, but not how entrepreneurs personally experience these changes. This gap did not satisfy the question that sparked this inquiry. "How are entrepreneurs using AI?" While 50 studies were synthesized to answer the question, the following sampling of themes and representative studies confirmed a gap existed.

AI as Strategic Transformation

AI enhances market analysis, product development, customer engagement, and operational efficiency (Usman, et al., 2024). AI has the potential to reshape decision making, workforce agility, and sustainability. These behavioral changes are noted as entrepreneurs integrated AI into their ventures (Rastogi & Pandita, 2025). Entrepreneurial identity in AI-mediated environments is constantly evolving (Jeremiah, 2025). AI enhances opportunity recognition, automates routine labor, and accelerates innovation (Latif et al., 2026).

Existing surveys, conceptual maps, thematic analyses, and related methodologies revealed that AI integration is reshaping entrepreneurial practice. However, this work has not fully captured entrepreneurs lived experiences as they incorporate AI into their ventures. While prior studies document broad impacts and patterns, they stop short of capturing how entrepreneurs themselves narrate these changes, make meaning from them, and describe their personal stories behind their personal AI-enabled transformations.

AI in Entrepreneur Education

Recent surveys confirmed strong demand for entrepreneurship education: 60% of teens are interested in starting a business, 45% want schools to teach business creation, and 37% want entrepreneurship programs (Junior Achievement USA & The Hartford). Similarly, 50% of U.S. young adults intend to start a business (Global Entrepreneurship Monitor, 2023). As a result, schools, colleges, and nonprofits have expanded entrepreneurship courses, incubators, boot camps, accelerators, hackathons, and pitch competitions (UNESCO, 2023; OECD, 2022; Hernholm, 2025). This demand explains why literature on AI and entrepreneurship education was included in this review.

AI transforms entrepreneurship education through adaptive learning, creativity support, and immersive digital environments (Bandara et al., 2025). Digital literacy, institutional support, and pedagogical orientations are shaped by AI adoption while limited resources and concerns about the human dimension of teaching EE education with AI remain key barriers (Belguith, 2025). Artificial intelligence has the potential to enhance students' entrepreneurial competencies specifically by spotting opportunities, creativity, vision, and valuing ideas, along with ethical and sustainable thinking (Somià & Vecchiarini, 2024).

Despite a growing demand for EE education the literature lacks narrative accounts of how entrepreneurs internalized AI literacy concerns. The current knowledge also lacks the emotional experience of learning about AI alongside digital intelligent systems.

AI and Entrepreneurs Ethics, Bias, and Trust

Artificial intelligence is increasingly embedded in entrepreneurial decision making, amplifying both opportunity and risk (Jeremiah, 2025).

As entrepreneurs rely on AI for forecasting, personalization, and operational efficiency, ethical concerns around bias, transparency, and accountability become central to responsible innovation.

Biased training data and opaque algorithms can produce discriminatory outcomes, undermining trust in AI enabled ventures (Mehrabi, 2026). Ethical AI practices, such as fairness, explainability, and human oversight, are essential for safeguarding stakeholder confidence and ensuring equitable entrepreneurial ecosystems. Specifically, without ethical guardrails, AI adoption risks eroding autonomy, credibility, and long term venture sustainability. (Kumar et al., 2025). Challenges with entrepreneurs' technical efficiency and ethical legitimacy, highlight the need to integrate algorithmic capabilities with principles of responsible governance (Fernández-Fernández et al., 2026). Opportunity recognition is increasingly emerging from hybrid cognitive systems in which heuristic and cognition mechanisms, analytical reasoning, and algorithmic cues jointly influence entrepreneur's judgment (Mehrabi, 2026).

Studies examining AI and entrepreneurs' ethics, bias, and trust provide critical guidance and information; however, they do not capture the real-world experiences of entrepreneurs faced with responsible governance. Existing studies do not provide insight into how an entrepreneur validates outcomes, questions AI responses, or the interchange between the AI and the entrepreneur that builds trust.

Why These Gaps Matter

This sampling of AI and entrepreneurs' scholarship revealed one unmistakable pattern. The literature explains AI's effects on entrepreneurship, but not the entrepreneur's lived experiences. Only one study captured entrepreneurs talking about AI in their own words (Rastogi & Pandita, 2025). However, none of the existing research captured how entrepreneurs narrated identity shifts, ethical dilemmas, emotional tensions, or negotiated meaning in real time as AI reshapes their work. And no study provided opportunity to hear the voice of the AI, which is why the methodology and podcast delivery were chosen for this study.

Methodology

Narrative Inquiry Framework

The spoken word is a powerful communication tool that enables opportunity to bridge the divide between scholar-practitioner perspectives and lived entrepreneurial experience. This study uses narrative inquiry to explore how entrepreneurs make meaning through their interactions with AI.

As a qualitative research method, narrative inquirers intentionally ask, "why or how" (Gilstein, 2023). As a framework for research the focus is to validate and explore the contribution of individuals' experiences within social constructs (Clandinin & Connelly, 2000). Collaboration is a key aspect for narratives, requiring researchers to actively engage with participants to capture experiences. This is why the implication for the use of narratives is that knowledge can be shared, stored away, and retrieved to be shared again. (Gilstein, 2023).

Design Framework

This on-going study integrates single-case narratives, a semantic literature review of current scholarships, and a podcast-based narrative data collection method. The sampling strategy is purposeful. Entrepreneurs are intentionally selected based on their active use of AI in venture creation, their ability to articulate their AI practices, and their willingness to share their stories publicly. To be included participants must be entrepreneurs or business founders. They must be using AI directly in product development, operations, or creative processes, they can describe their AI interactions, and they consent to podcast recording and narrative publication. Participants who do not use AI in their entrepreneurial work, who cannot provide detailed accounts of their AI practices or decline consent for recording or publication are excluded.

Ethical Considerations

Ethical protocols include informed consent to share stories in podcast setting, confidentiality options, secure storage of audio/video files and transcripts, disclosure of AI involvement, respect for intellectual property.

Data Collection and Analysis

Data is collected through semi-structured interviews, recorded Zoom podcast conversations, and field

notes. Semi-structured interview questions explore how entrepreneurs began using AI, how AI shaped their venture creation, challenges encountered, and reflections on AI as collaborator vs. tool. Data analysis involves coding for narrative threads, reviewing participant accounts, thematic synthesis, and integration with scholarly literature

Limitations and Assumptions

Limitations included, single-case narrative, self-report bias, selection bias, podcast performance effects, AI-output verification issues. Assumptions include the accuracy of participant accounts, meaningfulness of AI interactions, relevance of entrepreneurial narratives, and value of narrative evidence.

Findings

Ron's story illustrates how entrepreneurs engage AI through iterative questioning, collaborative problem-solving, rapid venture creation, and constraint navigation. Using video conferencing software (Zoom) we captured Ron's story in our first recording session. However, due to technology challenges, we had to process that session as audio only. Our second session was designed for us to observe Ron as he collaborated with his AI that he had named Homie. Although we encountered different technology issues, we were able to clearly hear and record the AI's (Homie) female voice in response to Ron's prompted interview. In that session, we interviewed Ron to capture personal feedback and we interviewed the AI. Due to confidentiality Ron positioned himself as the interface between our questions and his AI. We would ask Ron the question then he would ask his AI the question. Ron demonstrated his process of iterative questioning of his AI. It appeared as if he was talking with and collaborating with his business partner. Ron demonstrated how he challenged the AI responses, asked for clarification, and encouraged his AI to share their history of collaboration on developing his project.

Discussion

Based on our experience, we have multiple recommendations for future research. For educators we recommend integrating entrepreneurs' AI narratives into curriculum using video conferencing software. Another suggestion is to teach Socratic-prompting (Stamatellos, 2025) to increase AI output

potential. For entrepreneurs we recommend iterative questioning with their AI agents. As we saw Ron, we found that he would ask a question in diverse ways to increase AI engagement. Documenting AI interactions is another recommendation. There is a great amount of data collected when collaborating with AI. Organizing and categorizing output sessions was a key observation of how Ron managed his AI output. For researchers, our recommendation is to expand narrative samples. Although this report is based on one entrepreneur's narrative, this is an ongoing research project. We plan a future session with Ron, and we have several entrepreneur volunteers who want to appear on the podcast. This will enable us to conduct comparative case narratives and to explore longitudinal patterns. While narrative inquiry is time intensive, due to the complexities of AI expansion, the potential to capture narratives experiences from leaders and workers has potential to increase knowledge.

Conclusion

Entrepreneurs are redefining what AI can be and are moving beyond productivity tools to collaborative partners in innovation. Ron's story shows how a single question, paired with iterative AI dialogue, can evolve into a patented product and operational business. By capturing these narratives through purposeful sampling and podcast-based inquiry, this study illuminates emerging forms of AI-enabled creativity and autonomy. Entrepreneurs offer a vital lens for understanding AI's future, because they are not limited or bound by institutional approvals, and their stories provide a foundation for ongoing research.

AI Disclaimer

This document used the assistance of artificial intelligence (AI) tools, including Elicit for research and Microsoft Copilot, to improve clarity, organization, and readability. All intellectual content, interpretations, and conclusions are the author's own. The author's reviewed and approved all edits and remains responsible for the accuracy, integrity, and originality of the final work.

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What Can We Learn About AI from Leaders and Entrepreneurs?

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Abstract

This article introduces the University of Phoenix Center for Leadership and Entrepreneurial Research | AI Lab (CLER | AI Lab), a new initiative examining artificial intelligence through the lived experiences of leaders and entrepreneurs. Grounded in scholar-practitioner principles, the lab explores four interconnected areas: AI-informed leadership decision-making; entrepreneurial innovation and AI adoption among small and mid-sized organizations; ethical, responsible, and inclusive AI governance; and organizational learning and workforce readiness. Drawing on emerging research, the lab seeks to bridge theory and practice, advancing evidence-based approaches that help organizations navigate AI transformation responsibly. As AI reshapes leadership, identity, equity, and the future of work. The CLER | AI Lab positions scholar-practitioners to contribute rigorous, timely insights that inform AI policy, practice, and education.

What Can We Learn About AI from Leaders and Entrepreneurs?

What can we learn about AI from leaders and entrepreneurs? This question inspired a new initiative: the University of Phoenix Center for Leadership and Entrepreneurial Research | AI Lab (CLER | AI Lab). The lab examines AI through the lens and lived experiences of leaders and entrepreneurs, with the goal of increasing knowledge of how scholar-practitioner leadership can bridge theory and practice. The aim is to provide guidance on AI transformation using evidence-based, practice-informed approaches.

1. What Can We Learn from Effective AI-Informed Leadership Decision Making?

Westover (2025), recognizing the increased power of information supplied for decision making in the

AI era identified essential competencies for leaders navigating AI-driven decision-making. These competencies include but are not limited to strategic vision and data acumen, digital integration, managing AI risks, human centric leadership, growth mindset for responsible innovation, and change-management. A central advisory is that leaders should treat AI as a tool that can amplify human capability rather than simply automating tasks.

One aim of the CLER | AI Lab is to explore how AI is reshaping leadership decision-making and organizational strategy to drive meaningful, human-centered transformation.

2. What Can We Learn About Entrepreneurial Innovation and AI Adoption?

Jeremiah (2024) analyzed the growing relationship between AI and entrepreneurial practice. She found

that AI improves efficiency and decision-making while simultaneously altering traditional conceptions of entrepreneurial identity and creativity. These shifts raise important questions about what it means to be an entrepreneur in an AI-enabled world.

One goal of the CLER | AI Lab is to examine how entrepreneurs and small-to-midsize organizations leverage AI for innovation, growth, and competitive advantage—while managing the unique challenges of uncertainty, risk, and limited resources.

3. What Can We Learn About Ethical, Responsible, and Inclusive AI Leadership?

Kumar et al. (2026) identified significant ethical challenges surrounding AI, including the potential for misuse, the absence of emotional awareness in AI systems, and growing regulatory gaps. Because many existing financial and legal frameworks were not designed with AI in mind, questions of liability and compliance remain largely unresolved.

Importantly, roles requiring empathy and a “human touch” remain less vulnerable to automation—a reminder that ethical and relational dimensions of leadership are not only enduring but increasingly vital.

One goal of the CLER | AI Lab is to investigate ethical leadership, governance, bias mitigation, and accountability in AI-enabled systems, examining how equity, transparency, and responsible innovation can be maintained as AI continues to grow and evolve.

4. What Can We Learn About Organizational Learning and Workforce Readiness in the AI Era?

At the 2026 Nvidia GPU Technology Conference, Perplexity CEO Arvind Srinivas suggested that AI-driven job displacement could free workers to pursue entrepreneurship—and that people “should be happy to be unemployed due to AI” (Curry, 2026). Critics quickly responded that such views reflect a disconnect from the daily economic realities facing working adults who depend on stable employment and may be threatened by AI advancements.

One goal of the CLER | AI Lab is to explore how leaders can foster cultures of continuous learning, support reskilling and upskilling initiatives, while preparing working adults—particularly those from underserved communities—for AI-driven organizational change and the future of work.

Why a Focused CLER | AI Lab

The tension between advocates of AI advancements and human workers underscores a critical challenge for organizations and leaders pursuing AI integration in the workplace. The need to understand how AI is being used and what it is being used for by leaders and entrepreneurs is necessary as new AI programs, models, and avatars (robots) are and projected to be continuously launched. A quick search using Elicit, Semantic Scholar or other academic search AI reflects that research into AI and humans’ currently trends to originate in Eastern and African nations. Simply put, there appear to be fewer studies originating from the USA. We invite students and fellows to join this effort to learn more about AI from leaders and entrepreneurs.

Note: The author used Claude (Anthropic, 2026), an AI language model, to assist with summarizing and drafting the abstract. All AI-generated content was reviewed, edited, and verified by the author.

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Psychological Capital as a Foundation for Career Optimism: A Strategic Integration of Research and Contemporary Workforce Insights

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Abstract

This paper explores Psychological Capital (PsyCap) as a crucial foundation for career optimism, integrating scholarly research with contemporary workforce insights from the 2025 Career Optimism Index®. PsyCap, comprised of hope, optimism, resilience, and self-efficacy, is presented as a developable resource that enhances individual adaptability, motivation, and performance. The paper demonstrates how PsyCap fosters workforce readiness, student success, and organizational stability by bridging the gap between career aspirations and actual capabilities. Core components such as hope and optimism drive goal pursuit and confidence, while resilience and self-efficacy support adaptability and proactive growth. Empirical evidence shows that higher PsyCap is linked to increased engagement, retention, and reduced stress, benefiting both employees and organizations. By embedding PsyCap development into talent management and workforce strategies, institutions can cultivate a resilient, optimistic, and future-ready workforce prepared to thrive amid ongoing change and uncertainty.

Across higher education and the modern workplace, the ability of individuals to adapt, persist, and thrive amid uncertainty has become a defining factor of long term success. As economic, technological, and social conditions shift rapidly, both students and employees face increasing pressure to navigate complex career pathways while maintaining confidence in their future prospects. The 2025 Career Optimism Index® study

underscores this reality, revealing that although many Americans express optimism about their long term careers, they often lack the psychological resources, institutional support, and developmental opportunities necessary to translate that optimism into meaningful progress. This gap between aspiration and capability highlights the urgent need for frameworks that strengthen individuals' internal

psychological resources, specifically Psychological Capital (PsyCap).

PsyCap, a higher order construct composed of hope, optimism, resilience, and self efficacy, offers a powerful and research supported approach to enhancing individual and organizational outcomes. Hope contributes to the psychological and physical well-being of an individual (Laranjeira & Querido, 2022). Hopeful individuals can redirect efforts and resources to achieve desired outcomes (Collins et al., 2009; Shan & Xu, 2025). These attributes, along with optimism, resilience, and self efficacy, form the foundation of PsyCap and have been shown to predict positive behaviors, improved performance, and greater well being across diverse contexts (Luthans & Youssef, 2004; Luthans et al., 2007).

This paper integrates scholarly research with contemporary insights from the Career Optimism Index® study to demonstrate how PsyCap development can strengthen workforce readiness, enhance student success, reduce attrition, and support long term organizational performance. By blending academic rigor with practical application, this analysis offers a strategic perspective on why PsyCap is essential for universities, employers, and individuals navigating today's evolving career landscape.

Understanding Psychological Capital

PsyCap is rooted in positive psychology, a field that shifted attention away from deficits and dysfunction toward human strengths, potential, and optimal functioning (Seligman et al., 2004). PsyCap represents a measurable, developable psychological state characterized by four components: hope, optimism, resilience, and self efficacy. Unlike personality traits, which are relatively stable, PsyCap is malleable and can be strengthened through intentional development, training, and supportive environments (Bonner, 2016; Luthans & Youssef, 2004).

PsyCap has been thoroughly validated both conceptually and empirically, establishing its reliability as a predictor of positive workplace outcomes (Luthans et al., 2007; Luthans et al., 2009; Stajkovic, 2006). Research demonstrates that PsyCap is associated with increased engagement, job satisfaction, commitment, and organizational citizenship, while also contributing to reduced

turnover intentions and fewer counterproductive behaviors. These findings are reinforced by the 2025 Career Optimism Index® which highlights that individuals with robust psychological resources, like hope, are more confident in navigating career challenges, more likely to pursue upskilling opportunities, and experience lower levels of career-related stress. Collectively, these insights underscore the importance of PsyCap as a vital asset for individuals and organizations striving to improve performance, adaptability, and sustained success in today's evolving professional landscape.

Hope as a Driver of Career Progression

Hope is a central component of PsyCap and plays a vital role in shaping individuals' ability to set, pursue, and achieve meaningful goals. It encompasses not only the capacity to visualize a desired outcome, but also the motivation and strategic planning required to reach it. Hopeful individuals formulate clear goals, identify multiple pathways to achieve those goals, and maintain a positive outlook even in the face of obstacles (Laranjeira & Querido, 2022; Titone et al., 2013). This positive orientation enables them to persist through challenges, adapt their strategies when necessary, and sustain momentum toward their objectives. By fostering hope, individuals become more resilient, proactive, and confident in their ability to overcome setbacks and realize their ambitions, which is particularly important in today's dynamic career landscape (Rivera et al., 2021).

Hopeful individuals are better equipped to navigate obstacles, adjust their strategies, and maintain momentum even when challenges arise. Hopeful individuals can redirect efforts and resources to obtain the desired outcome by demonstrating flexibility and persistence (Guse & Wilson Fadji, 2025). This aligns with findings from the 2025 Career Optimism Index® which shows that workers with clearer goals and stronger internal motivation exhibit higher levels of career confidence and are more likely to pursue advancement opportunities.

Adding Optimism to the Mix

Optimism, another core component of PsyCap, reflects an individual's expectation that good things will

happen and that challenges can be overcome. Luthans (2012) describes optimism as a forward looking sense of positivity, while Carver et al. (2010) emphasize its role in sustaining confidence during adversity. Optimism is not blind positivity; rather, it is a realistic belief in one's ability to influence outcomes and navigate difficulties.

Optimism, as a core pillar of PsyCap, directly influences career optimism by shaping how individuals interpret challenges and setbacks in their professional lives. When optimism is present, individuals are more likely to perceive career obstacles as temporary and surmountable, which fosters a proactive attitude toward growth and development (Gong et al., 2026). This mindset not only encourages persistence in the face of adversity but also supports a belief in one's ability to achieve long-term career goals, making optimism a key driver of career confidence and sustained ambition.

Optimism may be influenced by a person's perception of their ability to impact outcomes (Tenney et al., 2015). This connection between optimism and perceived control is particularly relevant in the context of career development. The 2025 Career Optimism Index® reveals that optimistic workers are more likely to pursue professional development, engage in upskilling, and remain committed to long term career goals. They are also more likely to view challenges as temporary and solvable, which enhances resilience and reduces stress.

In organizational settings, optimism contributes to higher morale, stronger team cohesion, and greater willingness to embrace change. For students, optimism supports academic persistence, confidence in career pathways, and openness to new opportunities. Universities and employers can cultivate optimism by creating environments that emphasize strengths, celebrate progress, and provide clear pathways for growth.

Resilience as a Foundation for Adaptability

Resilience refers to the ability to recover from setbacks, adapt to change, and continue moving forward despite adversity. The ability to rebound not only requires the desire to recover but also the foresight that adversity is a temporary circumstance (Haglund et al., 2007; Sisto et al., 2019). This

perspective highlights the cognitive and emotional components of resilience, including the belief that challenges can be overcome and that difficulties do not define one's future.

Resilient individuals are better equipped to navigate the uncertainties of modern careers, which increasingly involve transitions, disruptions, and evolving skill demands. The 2025 Career Optimism Index® reinforces this point, showing that resilient workers are more likely to adapt to change, pursue new opportunities, and maintain momentum during periods of uncertainty. They are also less likely to experience career related stress and more likely to remain engaged in their work.

Self Efficacy and Confidence in Capability

Self efficacy, defined as the belief in one's ability to successfully complete tasks, is a powerful predictor of motivation, performance, and persistence. According to Luthans et al. (2007) and Stajkovic and Luthans (1998), self efficacy reflects an individual's belief in the ability for successful completion of a task. Individuals with high self efficacy are more likely to take on challenging tasks, persist through difficulties, and view obstacles as opportunities for growth.

Workers with strong self efficacy are more likely to engage in upskilling, seek promotions, and navigate career transitions with confidence. This belief in one's abilities not only fuels motivation but also encourages individuals to pursue challenging assignments, adapt to evolving job requirements, and proactively manage their professional growth (Alkal, 2025). High self efficacy fosters resilience when facing setbacks and helps workers maintain a positive outlook, making them more persistent in overcoming obstacles and achieving long term career goals. As a result, these individuals are better positioned to take advantage of new opportunities, embrace change, and thrive in dynamic work environments.

In contrast, low self efficacy is associated with avoidance, disengagement, and higher levels of career related anxiety. Individuals who doubt their capabilities may shy away from learning new skills, resist advancement opportunities, and feel overwhelmed by transitions or workplace challenges. This lack of confidence can lead to decreased motivation, increased stress, and a reluctance

to pursue professional development, ultimately hindering career progression and satisfaction. Addressing self efficacy through supportive leadership, skill building programs, and constructive feedback is therefore crucial for fostering workforce engagement and long term success (Mazzetti & Schaufeli, 2022).

PsyCap as a Predictor of Career Outcomes

PsyCap may predict a wide range of outcomes. Research shows that individuals with higher PsyCap exhibit greater engagement, commitment, job satisfaction, and organizational citizenship (Mathur et al., 2013; Memili & Welsh, 2014; Srivalli & Vijayalakshmi, 2015). They are also less likely to engage in counterproductive behaviors (Sharma & Sharma, 2013) and less likely to leave their jobs (Schulz et al., 2014). PsyCap has also been linked to greater perceived employability and stronger coping during job searches (Chen & Lim, 2012).

These findings align closely with the 2025 Career Optimism Index®, which shows that individuals with stronger psychological resources report greater confidence in navigating career challenges, higher likelihood of pursuing upskilling, and lower levels of career related stress. Together, these insights demonstrate that PsyCap is a powerful predictor of both individual and organizational success.

Employees with higher levels of hope, optimism, resilience, and self efficacy are more likely to persist through challenges, engage in learning, and pursue meaningful career pathways. These psychological resources empower individuals to maintain motivation and a positive outlook even when faced with adversity, enabling them to view setbacks as opportunities for growth rather than barriers (Shaban et al., 2025). As a result, such employees tend to demonstrate greater adaptability, proactively seek out upskilling opportunities, and remain committed to their professional development.

Organizations that invest in PsyCap development by fostering hope, building resilience, nurturing optimism, and strengthening self-efficacy may create a more supportive and empowering work environment. This investment not only enhances employee outcomes such as job satisfaction, engagement, and performance but also contributes to the overall effectiveness and stability of the institution (Shaban

et al., 2025). Enhanced PsyCap among employees leads to reduced turnover, lower stress levels, and increased organizational citizenship behaviors, all of which are essential for long-term institutional success (Zambrano-Chumo & Guevara, 2024). By prioritizing PsyCap development through targeted interventions, supportive leadership, and ongoing professional growth initiatives, organizations position themselves to retain top talent and remain competitive in an ever-evolving workforce landscape.

Implications for Talent Retention and Workforce Stability

PsyCap has been consistently linked to positive workplace behaviors, including engagement, commitment, and job satisfaction (Memili & Welsh, 2014; Saleem et al., 2022). These outcomes are central to talent retention, particularly in environments where employees face increasing pressures, shifting expectations, and rapid organizational change. While PsyCap has been discussed in the context of recruitment, its most powerful organizational impact emerges after individuals join an institution. High levels of hope, optimism, resilience, and self efficacy contribute to an employee's ability to remain motivated, navigate challenges, and sustain long term commitment to their organization.

The 2025 Career Optimism Index® reinforces this connection by highlighting that workers who possess strong psychological resources are significantly more likely to stay with their employer, even when facing uncertainty. Employees with higher resilience and optimism report lower levels of career related stress and demonstrate greater adaptability during organizational transitions. These findings align with research showing that PsyCap is negatively related to turnover intentions (Saleem et al., 2022; Schulz, et al., 2014) and positively related to organizational citizenship behaviors (Carter & Youssef-Morgan, 2022; Mathur et al., 2013; Srivalli & Vijayalakshmi, 2015). Together, these insights suggest that PsyCap is not merely a predictor of initial fit or early engagement but a long term stabilizing force within the workforce.

Retention is also strengthened by the developable nature of PsyCap. Unlike fixed personality traits, PsyCap can be intentionally cultivated through targeted interventions, coaching, and supportive leadership practices (Bonner, 2016). Organizations

that invest in building employees' hope, resilience, optimism, and self efficacy create environments where individuals feel capable, valued, and supported. This sense of psychological safety and empowerment reduces burnout, enhances loyalty, and encourages employees to envision a future within the organization rather than seeking opportunities elsewhere.

The 2025 Career Optimism Index® further emphasizes that employees who feel supported in their growth and career development are more likely to remain with their employer. PsyCap directly contributes to this sense of support by equipping individuals with the internal resources needed to pursue advancement, manage stress, and maintain confidence in their long term career trajectory. When employees believe in their ability to succeed and perceive their organization as a partner in that success, retention naturally increases.

In higher education settings, PsyCap plays a similar role in retaining faculty, staff, and student workers. Institutions that foster psychological resources among their employees create more resilient teams, reduce turnover related costs, and strengthen institutional continuity. As the attached document notes, PsyCap has been linked to decreased counterproductive workplace behaviors (Saleem et al., 2022; Sharma & Sharma, 2013) and increased positive contributions to organizational culture (Carter & Youssef-Morgan, 2022). These outcomes are essential for universities seeking to maintain stability, preserve institutional knowledge, and support long term strategic goals.

Shifting the focus from recruitment to retention reveals the deeper value of PsyCap: it is not simply a tool for attracting talent but a framework for sustaining it. By cultivating hope, optimism, resilience, and self efficacy, organizations and educational institutions can create environments where individuals thrive, remain engaged, and choose to stay. In a labor market defined by rapid change and increasing mobility, PsyCap offers a research supported pathway to long term workforce stability and organizational success.

Organizational Applications and Workforce Development

PsyCap, which encompasses hope, optimism, resilience, and self-efficacy, is recognized as a developable and teachable skill, making it a highly valuable target for organizational development

efforts (Bonner, 2016). Unlike fixed personality traits, PsyCap can be intentionally fostered through strategic interventions such as coaching, formal training, and mentorship programs (Peláez Zuberbuhler et al., 2020). Organizations that prioritize PsyCap development benefit from enhanced employee productivity, engagement, retention, and adaptability. Supportive workplace cultures foster collaboration, trust, and a sense of belonging, which collectively enhance both individual performance and team cohesion. These targeted interventions not only improve organizational climates but also contribute to sustainable long-term outcomes, such as reduced turnover, increased job satisfaction, and a stronger foundation for future growth (Mazzetti & Schaufeli, 2022). By embedding PsyCap development into workforce strategies, organizations position themselves to thrive amidst ongoing change and uncertainty, ensuring stability and continued success.

The 2025 Career Optimism Index® further underscores the importance of psychosocial resources by highlighting that workers who receive support in building confidence, resilience, and career clarity are not only more likely to stay with their employer but also more inclined to pursue advancement opportunities and maintain high levels of engagement in their work. This proactive investment in employees' psychological well-being ensures a workforce that is prepared to navigate challenges, embrace change, and remain committed to organizational goals over the long term.

Conclusion

The convergence of PsyCap research and the 2025 Career Optimism Index® Report make one conclusion clear: psychological resources are foundational to career success, organizational performance, and long term well being. As workplaces and educational institutions navigate rapid change, cultivating hope, optimism, resilience, and self efficacy is essential for building a confident, capable, and future ready workforce. PsyCap provides a measurable, teachable, and impactful framework for strengthening both individual and organizational outcomes. By integrating PsyCap development into recruitment strategies, workplace training, and development, organizations can create environments that empower individuals to thrive in the face of uncertainty and pursue meaningful, sustainable career pathways.

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Future Forecasts? - Is AI a Workforce Revolution or Disruption?

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Abstract

This narrative literature review synthesizes findings from research studies, publications from 2024 to 2026, and AI-generated prompts to examine forecasts of how artificial intelligence (AI) may affect the workforce. The literature consistently showed that AI is transforming job structures, automating routine tasks, and changing skill requirements. Information-based and cognitive roles appear most vulnerable to automation, while physically intensive and interpersonal jobs are less affected. At the same time, new employment categories are emerging in AI development, digital transformation, human-AI collaboration, and data-driven decision support. The literature also raises concerns about job displacement among low-skill workers, widening inequality, the need for large-scale retraining, regulatory safeguards, and the continued importance of human-driven innovation. Overall, scholars, practitioners, and leaders suggest that AI is more likely to augment, rather than fully replacing human labor. Although AI's long-term impact on the workforce remains uncertain, its influence is undeniable as organizations adapt to rapidly evolving technological capabilities.

Introduction

AI Revolution?

The term *revolution* is commonly defined as “a sudden, complete, or marked change in something” (Merriam-Webster Dictionary, n.d.). By this definition, the rapid expansion of artificial intelligence (AI) into daily life may reasonably be viewed as revolutionary. Nearly every facet of everyday life now involves some form of AI-supported action, service, or interaction (Tuhin, 2026). A secondary definition of *revolution*, “a single turn of this kind” (Oxford English Dictionary, n.d.), also reflects the dramatic shift that occurred when generative AI became publicly accessible in November 2022. Initial responses ranged from curiosity to

concern, as many individuals hesitated to fully engage with the emerging technology.

AI Disruption?

By 2026, private-sector organizations, public-sector agencies, businesses, and academic institutions had moved beyond tentative exploration to the integration of AI-enabled systems into daily operations (Tuhin, 2026). This adoption has transformed organizational structures, workflows, and professional expectations (Gallup, 2026). This is why AI may also be viewed as a *disruption*, commonly defined as a break or interruption in the normal course of an activity or process (Merriam-Webster, n.d.). The Oxford English Dictionary further defines *disruption* as disorder or upheaval (n.d.), a description that fits the ways AI has

altered the regular flow of work, education, and human life.

Rapid Expansion and Uncertainty

Due to rapid expansion and evolution, AI has become a catalyst for uncertainty in both workplaces and educational settings (Hassard, 2024). According to Ong (2026) AI's current capabilities may look very different within a year or two. This assessment is valid, considering that each year since 2022, the rapid acceleration of AI integration has demonstrated how quickly its influence has expanded across industries and everyday life activities (Tuhin).

Workforce Benefits and Concerns

One of the most widely discussed questions is “how will AI affect the workplace?” The 2026 Career Optimism Index reports “*workers are increasingly using AI to build skills, boost confidence and prepare for career mobility*” (p.8). Workers with strong AI prompting skills are becoming highly valuable organizational assets (Duncan, 2025). At the same time, concerns persist that AI may replace human workers in certain roles (Kanagarla, 2024).

Purpose and Scope of the Review

This paper summarizes a narrative review of research studies, reports, and publications from 2024 to 2026. The reviewer examined how artificial intelligence is reshaping the workforce and considered whether AI is best understood as a revolutionary force, a disruptive threat, or a combination of both. Because AI technologies and workplace applications are advancing rapidly, the review was focused on a narrow time frame. This approach also reflects the changing nature of research itself, as AI becomes increasingly integrated into the research life cycle and publication process (Van Quaquebeke, 2025). Given that AI-related studies may become outdated before completing peer review and publication, this review draws on varied sources, including forecasts from researchers, industry leaders, and AI systems. Although these findings may date quickly, they provide a useful starting point for understanding AI's potential impact on the workforce.

Researchers' Forecasts

AI has become a leading subject in research submitted to CARI Journals (Editor, 2025), reflecting growing

scholarly attention to its effects on human life and work. Although the studies summarized here do not represent the full scope of AI and employment research, they provide useful forecasts of AI's potential impact on jobs, skills, and workplace transformation.

Working with AI: Measuring the Applicability of Generative AI to Occupations

Tomlinson et al. (2025) examined 200,000 anonymized Microsoft Bing Copilot conversations to understand how generative AI was being used across work-related tasks. The researchers assigned each conversation an applicability score that connected Copilot use to specific job functions. This method offered a distinctive way to forecast future workforce needs by analyzing real patterns of AI use. Based on these usage patterns, the researchers identified 40 occupations where AI may reduce the need for human workers and 40 occupations where AI use was least applicable.

The occupations with the highest AI applicability were generally those involving intellectual, communication-based, or information-processing tasks. The top ten occupations ranked for potential AI-related workforce reduction were:

1. Media and Communication Workers
2. Sales Representatives - Services
3. Information and Records Clerks
4. Mathematical Science Occupations
5. Tour and Travel Guides
6. Postsecondary Teachers
7. Sales Reps.- Wholesale and Manufacturing
8. Communications Equipment Operators
9. Baggage Porters, Bellhops, and Concierges
10. Computer Occupations

In contrast, occupations with the lowest AI applicability were more likely to involve physical labor, hands-on support, or in-person care. The ten occupations ranked lowest for potential AI-related workforce reduction were:

1. Forest and Conservation Workers
2. Plant and System Operators
3. Grounds Maintenance Workers
4. Home Health Aides and Nursing Assts
5. Extraction Workers
6. Textile, Apparel, and Furnishings Workers

7. Occupation and Physical Therapy Workers
8. Farming, Fishing, and Forestry Sups
9. Helpers, Construction Trades
10. Other Healthcare Support Occupations

The significance of this study is that it was commissioned by Microsoft. Giving access to Copilot conversations with AI end users provided data to validate the forecast.

Artificial Intelligence and Employment Transformation

Kanagarla's (2024) multi-sector analysis offered another forecast of AI's workforce impact. The study involved econometric analysis across 327 employment sectors, semi-structured interviews with 142 stakeholders, and case studies of 47 firms that had implemented AI. Kanagarla found that traditional middle-skill jobs in manufacturing, logistics, and leadership had already declined by 23.4% due to AI-related changes. At the same time, the researcher identified a 31.7% increase in new employment categories, including:

- AI development
- Human-AI collaboration
- Digital transformation roles

This econometric statistical analysis uncovered financial impacts on human resources, while interviews and case studies provided additional details to confirm if impacts were due to AI in the workplace. This is the type of data needed as leaders consider integrating AI into the workplace.

Multiple Impacts of Artificial Intelligence on Occupations and Labor Markets

Song (2024) used quantitative data analysis and qualitative interviews to forecast how AI technologies may affect job roles and labor markets. The findings suggest that AI-driven automation may place low-skill jobs at greater risk, contributing to structural unemployment and increased job insecurity. In contrast, highly skilled workers may benefit from AI-supported productivity gains, which could create new professional roles. Song emphasized the need for ethical safeguards, regulatory measures, and job retraining programs to balance AI adoption with worker protection.

Artificial Intelligence and Labor Markets: Analyzing Job Displacement and Creation

Maria et al. (2025) examined AI's impact across several industries using statistical trend analysis, comparative sector evaluations, and qualitative interviews. Their forecast identified the following jobs as most vulnerable to AI-driven replacement:

- Manufacturing Jobs (assembly line workers, machine operators, quality inspectors)
- Retail jobs: cashiers, warehouse pickers, logistics workers, and customer service representatives
- Finance jobs: clerical staff, basic analysts, and customer support workers

These roles may be vulnerable because AI systems can perform structured, rules-based tasks more quickly and accurately. At the same time, Maria et al. (2025) forecast growth in several emerging or expanding job areas, including:

- Health Care Jobs (AI-assisted diagnostics specialists, robotic surgery technicians, clinical analysts).
- Education Jobs (EdTech platform designers, AI tutors, learning analytics specialists)
- Finance jobs: AI risk modelers, fintech developers, and algorithmic trading specialists
- Cross-industry jobs: data scientists, AI ethicists, automation managers, and intelligent systems supervisors

Maria et al. (2025) also emphasized skills development as a central workforce priority. Preparing workers for AI-enabled environments requires development in key areas, including:

- Technical skills: data literacy, data analysis, privacy awareness, machine learning, AI system monitoring, robotics, cybersecurity, and automated workflow design
- Digital competencies: digital literacy, human-AI collaboration, and effective use of AI tools in daily workflows

AI Cannot Replace the Need for Human-Driven Innovation

Sonnenblick (2025) argues that although AI is a powerful tool for efficiency, analysis, and automation, it cannot replace the human capacities required for

genuine innovation. AI can process data and identify patterns, but it lacks curiosity, imagination, emotional intelligence, and contextual judgment that often drive breakthrough ideas. Sonnenblick emphasized that innovation emerges from human experience, diverse perspectives, and the ability to challenge assumptions—capacities that AI cannot replicate. The author also warns that organizations may risk stagnation if they rely too heavily on AI for creative work, because AI tends to optimize existing ideas rather than generate truly original ones. Instead, leaders should adopt a hybrid approach in which AI handles routine tasks and frees people to focus on exploration, experimentation, and strategic thinking. In this view, AI can accelerate innovation, but the spark of innovation remains fundamentally human and depends on cultures that support collaboration, psychological safety, and bold thinking.

The researchers' forecasts were generally consistent and grounded in existing data. This consistency prompted interest in whether AI-generated forecasts would reach similar conclusions.

AI Forecasts

Drawing on the recommendation of Chowdhury et al. (2025) that we can use AI to predict future workforce needs, using this prompt, *"How will AI impact Jobs in the Future?"* I asked two AI programs to provide me with a forecast.

Claude Forecast

According to Claude (Anthropic, 2026), artificial intelligence is poised to fundamentally reshape the global workforce in ways that could be both disruptive and transformative. The impact will be felt across nearly every industry, creating a complex mix of job displacement, job creation, and job evolution. This is a summation of the Claude AI forecast.

Automation of Routine Tasks

AI will most aggressively replace jobs that involve repetitive, predictable tasks. Roles in manufacturing, data entry, customer service, transportation, and basic accounting face the highest risk.

Emergence of New Roles

History shows that technological revolutions destroy old jobs while creating new ones. AI will be no different. Demand will surge for AI trainers,

prompt engineers, ethics auditors, cybersecurity specialists, and human-AI collaboration managers roles that barely existed a decade ago. The net effect on employment remains debated among economists.

Augmentation Over Replacement

For many professions, AI will serve as a powerful copilot rather than a replacement. Doctors, lawyers, teachers, and engineers will leverage AI tools to work faster and more accurately. This augmentation will raise productivity expectations and redefine what "skilled work" truly means.

Widening Inequality

One of the most concerning risks is that AI's benefits may concentrate among highly skilled workers and capital owners, while lower-wage workers bear the brunt of displacement. Without strong policies, such as retraining programs, updated education systems, and social safety nets, inequality could deepen significantly.

The Human Advantage

Creativity, emotional intelligence, ethical judgment, and complex interpersonal skills remain difficult for AI to replicate. Jobs centered on these uniquely human qualities will remain resilient and increasingly valuable.

According to Claude (2026), the future of work will ultimately depend not just on AI's capabilities, but on how societies choose to adapt, regulate, and harness it. The Claude forecast aligns with the human researchers' forecasts.

ChatGPT Forecast

The same prompt, *"How will AI impact Jobs in the Future?"* was entered into ChatGPT. According to ChatGPT, Artificial Intelligence is not simply eliminating jobs; it transforms how work is done.

Jobs Will Be Redesigned, Not Just Replaced

Tasks that are repetitive, routine, or data-driven are increasingly automated, allowing people to focus on higher-value activities such as critical thinking, creativity, and relationship-building. As a result, many professions from education to finance are evolving to emphasize human judgment and interaction over mechanical tasks.

New Jobs and Entrepreneur Opportunities Will Be Created

At the same time, AI is creating new opportunities across industries. New roles are emerging in areas such as AI strategy, ethics, and human-AI collaboration. This shift is also lowering barriers to entrepreneurship, enabling individuals and small businesses to innovate, launch products, and scale operations more quickly and affordably. The workforce is not shrinking; it is reshaping, with growth in areas that require adaptability, innovation, and technological fluency.

Skills Will Shift

The most significant impact of AI is on skills rather than job titles. Skills such as emotional intelligence, strategic thinking, creativity, and AI literacy are becoming increasingly valuable. In contrast, routine cognitive and administrative tasks are declining in importance. Leaders must also adapt by learning how to interpret AI-generated insights, address ethical concerns, and effectively lead teams that integrate both human and intelligent systems.

Leaders Will Need New Capabilities

Ultimately, the future of work will center on value creation rather than task completion. While some jobs will decline, many will evolve, and new ones will emerge. Individuals who succeed will be those who embrace continuous learning, use AI as a collaborative tool, and focus on uniquely human capabilities. In this changing landscape, the key advantage will not be avoiding AI but knowing how to work effectively alongside it.

AI – A Revolution and A Disruption

The Human Researchers' forecasts and the AI forecasts all report that artificial intelligence is transforming workplaces and will continue to shape the nature of work. These predictions share similarities, as human researchers and AI software leverage the same published sources. The inference is that AI will revolutionize the workplace, creating a need to enhance workplace skills. The forecasts that some jobs may be replaced or eliminated as AI and technology in the workplace become a necessity, rather than an option, suggest that AI is indeed a disruption. The reliability of such forecasts is questionable; ultimately, only time will provide clarity.

The reality is that conclusions asserting that AI will definitively revolutionize or disrupt human workplaces remain foggy. Are we seeing the future with AI through a clouded lens, or through the lens of looking backward? Perhaps the best way to forecast future workplace needs would be through technology reports. Knowing what technologies are in their developmental and application stages is becoming necessary to predict advancements and/or use for workplace needs. We have reached a point where scholars, practitioners, and leaders must work together to understand the future of AI and workplace technologies.

The Future of Artificial Intelligence and Workplace Technologies

The 2025 McKinsey & Company Technology Trends Outlook Report identified three “transformative AI trends” that are likely to influence the workplace. *Agentic* AI can operate as a virtual coworker by planning and completing workflows. *Autonomous* AI can expand the use of robots and digital agents (Yee et al., 2025). Edwards (2025) reported that AI and robotics could automate 40% of U.S. jobs by 2030. Adaptive AI enables technology to respond to human intent and behavior, as seen in current health technologies.

Together, these trends suggest that AI and related technologies will continue to reshape work as they evolve. The Silicon Review Team (2025) similarly offers that *as automation becomes embedded in consulting processes; firms will need to adjust talent strategies*. Although that article focused on consulting, its broader message applies across all industries. Simply put, the future of work will depend on combining human imagination with technological automation.

Any discussion of AI's expanding role in the workplace must also consider how organizations will meet rising technical demands. Ong (2026) predicted that all IT work will involve AI by 2030, a projection that aligns with McKinsey's 2025 survey findings that redesigning workflows to integrate AI may produce the greatest return on investment. Workplace dependence on technology has already intensified: 85% of employees say technology is essential to productivity, and 70% report that technical problems directly affect their ability to work (Ong, 2026).

This growing need for technologically skilled workers aligns with Gallup's findings on AI adoption across public and private sector jobs (Gallup, 2026). However,

greater reliance on technology is also increasing frustration. Nearly half of employees say their IT tools are outdated, and 58% report that technology problems increase stress, suggesting a gap between organizational expectations and technological readiness (Ong, 2026).

Job postings now increasingly require at least one AI-related skill, signaling the rising demand for AI fluency (Yee et al., 2025). Overall, these technical reports suggest that future workplaces will require deeper technological integration, stronger technical support, and broader AI-related skill development. Our reality is a clarion call confirming that “*AI is disruptive revolution; AND yes, the robots are coming*” (Yee et al, 2025).

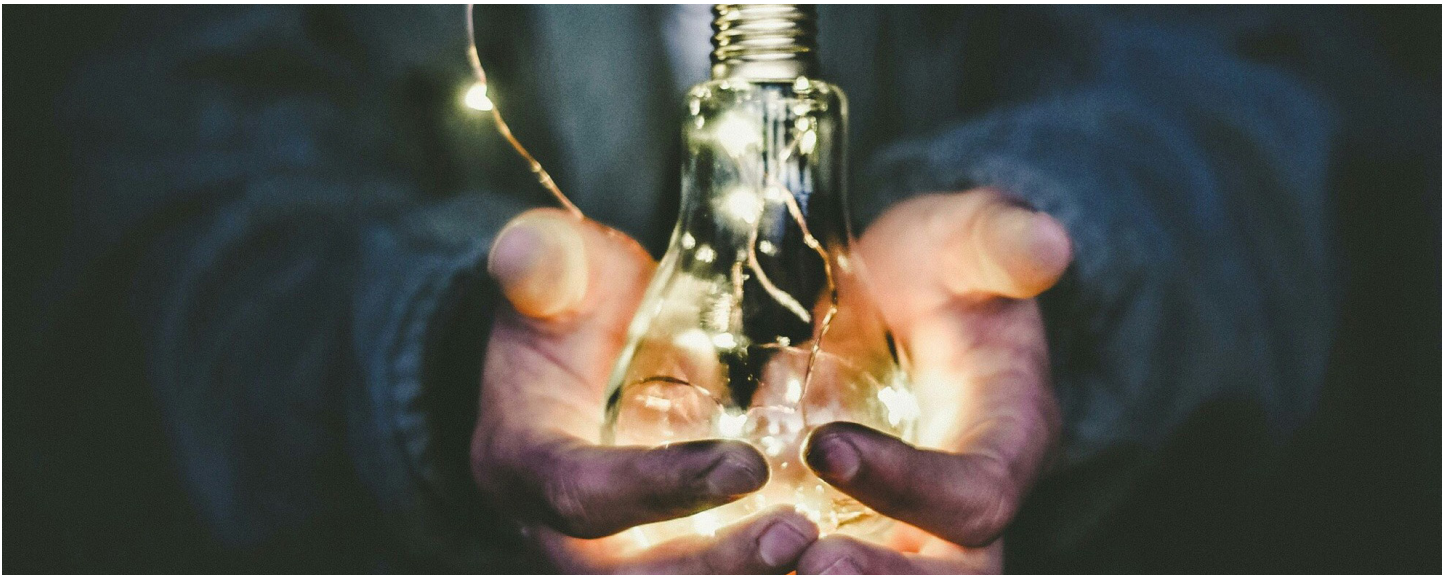
Author Disclaimer

Microsoft Copilot (Microsoft, 2025) was used to support the development of this article by assisting with editing. The research, analysis, and final writing are the author’s own. All AI-generated suggestions were reviewed and revised by the author. Any errors or misquotations are the responsibility of the author.

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Encyclopedic or Metagogical? Two Postures for AI in a Workforce Facing a Crisis of Trust

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Abstract

The 2025 Career Optimism Index documents an American workforce in crisis — record-high burnout, autonomy collapse, and an unprecedented turn toward artificial intelligence as a tool for skill development and resilience. This essay argues that the institutional question for 2026 is not whether to adopt AI but in whose service it is held. Two postures are named: *encyclopedic*, in which the tool replaces practitioner judgment, and *metagogical*, in which the tool extends it. The article draws on the metagogy framework (McCaslin & Scott, 2012), names the trust-building mechanism that distinguishes the two postures, locates what is at stake for the Scholar-Practitioner-Leader (McCaslin, 2013), and offers a concrete instance from doctoral teaching practice. The argument is that institutional trust is built or eroded at the level of posture, not at the level of adoption. The distinction is defined here as a construct, and the claim is framed so that it can be tested.

Keywords: institutional trust, metagogy, scholar-practitioner-leader, artificial intelligence, leadership education, faculty practice

The 2025 Career Optimism Index® paints a workforce at a breaking point. Burnout has reached a record high — fifty-one percent of American workers report it. Twenty-one percent say their sense of control over their professional future has gotten worse over the past five years. Hope, the Index reports, has become “a coping mechanism” — seventy-six percent of workers

rely on it just to get through the year (University of Phoenix, 2025). The institutional context for these numbers is, in the Index’s own framing, “record-low institutional trust and growing workplace grievances.” Inside that landscape, the workforce has turned, with notable urgency, toward artificial intelligence.

Seventy-nine percent of workers say AI helps them close knowledge gaps. Eighty-one percent say it improves work-life balance. Workers who use AI report measurable gains in autonomy, resilience, and adaptability compared to non-users (University of Phoenix, 2025). For employers, the numbers are similarly stark: sixty-eight percent say knowledge of AI is valuable for their employees' careers, and sixty-one percent say they would prioritize hiring candidates with AI training or experience even at the cost of traditional skills.

The institutional response, fairly read, has been to invest in AI, train the workforce on AI, and let AI close the development gap that internal investment has not. The data, however, also tell a quieter story. Sixty percent of employers continue to prefer hiring new employees over training current staff. Forty-three percent of workers report a lack of access to necessary training — an eight-point increase since 2021 (University of Phoenix, 2025). The trust crisis is not, on the evidence, being addressed by AI adoption alone. It may, in fact, be exacerbated by certain kinds of AI adoption.

This essay raises the question the Index does not directly ask: which AI, used how, in whose service? My claim is that institutional trust is built or eroded not at the level of adoption but at the level of posture. AI deployed in one posture rebuilds the practitioner-to-person relationship that workplace trust ultimately depends on. AI deployed in another posture replaces that relationship altogether. The two postures look identical from a distance — same tools, same workflows, same vendor names. They produce opposite effects in the people they touch. I name them *encyclopedic* and *metagogical*. The frame is drawn from the metagogy literature (McCaslin & Scott, 2012). It speaks directly to the integrated identity the Phoenix Scholar exists to serve — the Scholar-Practitioner-Leader (McCaslin, 2013) — and the institutional implications are the burden of this essay.

Two Postures Named

In encyclopedic AI use, the tool is asked to deliver an answer the practitioner would otherwise be expected to deliver themselves. A manager facing a difficult conversation prompts the tool for the conversation. A faculty member facing a stack of student work prompts the tool for the feedback. A trainer facing a curriculum

design prompts the tool for the curriculum. The encyclopedic posture treats the AI as an oracle — a vast, available, indefatigable encyclopedia, whose role is to substitute for cognition under conditions where cognition is taxed or scarce.

Encyclopedic AI use is not malicious. Often, it is exhausted. The practitioner is operating under loads — cognitive, emotional, temporal — that the institution has not made arrangements to lighten by other means. The AI arrives as relief, and the relief is real. The cost, however, is delayed. It appears in the people who receive what the encyclopedia produced. Their feedback feels generic. Their training feels off-the-shelf. Their conversation feels processed. The encyclopedic posture, deployed at scale across an institution already in a crisis of trust, extends the colonization of the lifeworld by the system (Habermas, 1987) into the most intimate moments of the workplace — the encounter between one person and another.

Metagogical AI use is, in nearly every visible respect, identical. The tool is open. The practitioner is using it. The output is shaped by the prompt. What differs is the posture. In metagogy — a term coined to name “the teaching to and learning from human potential” (McCaslin & Scott, 2012, p. 1) — the practitioner does not seek substitution. They seek extension. The AI helps them articulate, more quickly and more consistently across cases, the judgment they already hold. It serves the practitioner's voice rather than supplying its own. The relationship between the practitioner and the person they serve is preserved, and in some cases lifted, by the tool.

The structural difference between the two postures is locatable in a single line a practitioner can say to themselves and mean: *the voice is mine, the judgment is mine, the substance is mine, the tool serves the work*. When that statement is true, the posture is metagogical. When any clause of it is false, the posture has slid toward encyclopedic.

Posture, in the sense used here, is a construct worth defining. It is neither intention, nor temperament, nor the mere fact of tool use. A practitioner may intend well and still, under load, adopt an encyclopedic posture; posture is not a fixed trait but a stance held — and re-held — case by case, which is what makes it teachable. Nor is it visible in adoption data: the same observable tool use can express either posture. Posture is the practitioner's operative stance toward the tool

in the moment of use — whether the tool is held to substitute for, or to extend, the practitioner’s own judgment and presence. It is read not in the dashboard but in the artifact and in the encounter: in whether the practitioner’s voice, judgment, and substance remain present in what goes out, and in whether the receiver experiences being known rather than processed.

The original metagogy paper, written fourteen years before the technology now in question existed, named the posture but had no instrument for embodying it at scale. McCaslin and Scott (2012) wrote of the *Potentiator* — “expert listeners...forever open to learning...[who] approach life with a ‘second naïveté’ or hold the world with an ‘innocent eye’” (p. 5) — a practitioner whose orientation was catalytic rather than depository, whose presence served the human potential of the learner rather than the transmission of content (cf. Maslow, 1971; Walsh & Vaughan, 1993). *Catalytic teaching*, the practice held by Potentiators, “advances higher and deeper understanding of a concept” through the relationship the practitioner sustains (McCaslin & Scott, 2012, p. 6). The framework, in its day, was advanced. What it lacked was a tool that could amplify the catalytic posture without diluting it. Pedagogy at scale was repeatedly the casualty.

Generative AI, properly held, may be that tool. The encyclopedic temptation is significant. The metagological possibility is more interesting. The choice between the two will not be made by the technology. It will be made, case by case, by the practitioners who operate inside it.

Why Metagological Use Builds Trust

Why metagological AI use builds institutional trust where encyclopedic AI use erodes it requires a closer look at what trust actually is in the workplace context the Index describes.

Trust, as Greenleaf (1991) argued in his foundational work on servant leadership, is not a transactional construct. It does not arise from accuracy of information or efficiency of process, although both are useful adjacent goods. Trust arises from the lived experience of being known by someone who is paying attention. Workers who feel seen by their managers, their teachers, or their organizations report the markers that the Career Optimism Index calls career resilience — autonomy, adaptability, motivation, lower burnout. Workers who feel processed by them — even

competently processed, even efficiently processed — do not.

The encyclopedic posture, while often intended kindly, places a layer between the practitioner and the person. It is a layer the receiving end can detect. Students can tell when their feedback was synthesized rather than written. Employees can tell when their performance review was generated rather than authored. The tells are not always articulable, but they are reliable. What lands is the absence of the practitioner — the sense that, somewhere in the chain of attention that produced the artifact, no one was actually there. This is not a sentimental claim. It is a perceptual one. The receiver feels the difference between feedback that knows them and feedback that knows about them.

Metagological AI use, by contrast, preserves the practitioner’s presence in the artifact. The tool helps the practitioner say what they already had to say, in a form the receiver can use. It accelerates articulation; it does not replace it. Feedback drafted with AI assistance, then revised against the practitioner’s substantive judgment, then sent to a student with the practitioner’s voice intact, lands as feedback. Feedback drafted by AI, lightly skimmed, and forwarded under the practitioner’s name lands as something else — often experienced by the receiver as a small breach. The breach accumulates. Across a cohort, across a workforce, across an institution, the pattern of small breaches is, in operational terms, what record-low institutional trust looks like.

The Career Optimism Index identifies a striking gap. While seventy-nine percent of workers say AI helps them close knowledge gaps, employer investment in reskilling and upskilling has declined by thirteen and ten points, respectively, since 2022 (University of Phoenix, 2025). The workforce is reaching for AI in part because the institutional investment they would otherwise need has been withdrawn. AI fills the gap. The institutional read of this is sometimes triumphant — *see, AI is working* — but the underlying signal is bleaker. Workers are using AI because their institutions are not seeing them. The tool is, in many cases, a substitute for the human attention the institution no longer provides.

The metagological posture changes the meaning of that substitution. When a practitioner uses AI to extend their attention — to give a richer feedback to thirty students rather than a thinner feedback to ten — the AI is doing trust-building work on the institution’s behalf.

When a practitioner uses AI to replace their attention — to issue automated feedback under their name to thirty students rather than to actually attend to ten — the AI is performing a kind of institutional theater. Both produce artifacts. Only the first produces trust.

The argument here turns, in part, on Frankl's (1959) claim that the freedom to choose one's response is the last freedom of which the person cannot be deprived. The same freedom belongs to the practitioner inside an AI-augmented workflow. The workflow does not determine the posture. The practitioner does. They choose, prompt by prompt, between substitution and extension, between the encyclopedia and the catalytic teacher. The institution's trust is built or eroded by the cumulative weight of those choices, made under conditions of fatigue and load that few institutions have done much to relieve. This is the institutional point. AI policy that focuses on adoption rates without addressing posture is missing the variable that determines outcome.

Two cautions keep the distinction honest. The two postures are better imagined as the poles of a gradient than as two boxes; the line a practitioner crosses is real, but it is crossed by degrees. And the claim is bounded — in transactional work, a faster or more evenly distributed answer may itself serve trust; what is at stake here is the high-relational encounter, where being known is the good in question.

The Scholar-Practitioner-Leader at Stake

The Phoenix Scholar exists in service of a particular kind of professional: the Scholar-Practitioner-Leader. In the model I described in earlier work (McCaslin, 2013), the S/P/L embodies “a sort of leadership alchemy” in which scholarship, practice, and leadership are not three separate roles but a single integrated identity. The whole, in the model's central claim, is greater than the sum of its parts.

Encyclopedic AI use threatens that integration in three ways simultaneously. The Scholar in the S/P/L is at risk when AI synthesizes citation and argument in place of the scholar's own developed voice — what arrives is information without the apparatus of judgment that makes information scholarship. The Practitioner is at risk when AI replaces the lived encounter with the people the practitioner serves — what arrives is service without the relationship that makes service

practice. The Leader is at risk when AI generates output that no longer carries the practitioner's name in any meaningful sense — what arrives is influence without the person whose presence makes influence leadership.

The metagological posture preserves all three. The Scholar is preserved because the AI extends rather than replaces the scholar's argument-building work. The Practitioner is preserved because the AI accelerates articulation while leaving the practitioner present in the encounter. The Leader is preserved because the practitioner's voice and substance remain in the artifact that goes out under their name.

This is the integration the S/P/L model has always asked the practitioner to sustain. Generative AI raises the difficulty of sustaining it. The metagological posture is, in part, a way of protecting the S/P/L's integrated identity under the specific pressures the new tools introduce. What follows is one concrete practice for doing so.

A Concrete Practice: The Five-Place Calibration

I have been working this term inside the metagological posture in my doctoral teaching at one of the institutions where I serve, where AI tools are now encouraged as collaborators in faculty practice. The work has been substantial enough to develop a five-place calibration that other practitioners may find useful. The five places are *opening*, *critique delivery*, *reflective question*, *closing*, and what I have come to call the *wager move*.

Opening

Notice the practitioner, not just the artifact. One sentence of recognition — not flattery — specific to what is on this student's page. The AI cannot do this for the practitioner. The practitioner must read the work, must locate what is actually present, must name it. The AI helps articulate the recognition once it has been located. The gesture is a small one, and the receiver registers it precisely.

Critique Delivery

Frame each redirect as service to the writer's future scholar-self, not as rubric compliance. The AI is genuinely useful here — articulating the technical issue clearly and concisely — but the framing, what

the redirect is in service of, is the practitioner's substantive judgment about who this particular student is becoming. Generic feedback names the issue. Metagogical feedback names the issue and the trajectory.

Reflective Question

One that connects to who the receiver is becoming as a scholar, professional, or practitioner (Norton, 1976) — not just to the technical choice in front of them. The AI can suggest questions. The practitioner chooses the question that, given what they know about this person, will land. This is judgment work the tool cannot do.

Closing

Return the receiver to themselves. Name what they are moving toward, not what they are missing. This requires the practitioner to have read the work with care. AI cannot manufacture care.

The Wager Move (Where Warranted By the Work)

Name the second point of the vector. The receiver remembers this one ten years later. It is the line that says, in effect, *you are heading somewhere I can already see — and here is what I see*. The wager is wholly the practitioner's. The AI does not have the relationship.

Review of the Calibration

The disclosure language I share with students names this posture explicitly: “When I write your feedback, I am working with an AI tool the way I work with a research assistant. The voice is mine. The judgment is mine. The substance is mine. The tool helps me articulate quickly and consistently across the cohort.” Students respond to the disclosure. They report — in office hours, in unsolicited notes — that they can tell the difference. They ask better questions of their own AI use as a result.

The practice is replicable. The disclosure is portable. The five-place calibration is transferable to performance reviews, peer feedback, mentoring conversations, internal training communications — any context in which a practitioner is using AI to articulate judgment to a person. The cost is small. The gain is the quiet reconstruction of trust at the level of the encounter.

The five Acts of Potentiation, as named in earlier work — deep understanding, critical reflection,

maturity, empowerment, and generativity — describe what a leader practices when their orientation is to “the teaching to and learning from human potential” (McCaslin, in press). The five-place calibration above is, in operational terms, the *deep understanding* act translated into AI-augmented feedback delivery. The other four acts are similarly translatable. Each describes a posture the practitioner can hold while using the tool. Together, they constitute a metagogical AI practice: catalytic, dignifying, trust-building, and institutionally consequential.

Implications for Institutions

For institutions navigating the workforce crisis the Career Optimism Index documents, three implications follow.

First, AI policy should be reframed away from adoption and toward posture. An institution measuring AI use in its workforce is measuring the wrong variable. It should be measuring whether the AI is being used to extend or to replace the human attention employees, students, and clients receive. The two postures look identical in dashboards. They diverge sharply in trust outcomes.

Second, the metagogical posture is teachable. It is not a personality type or a temperament. It is a practice held by a practitioner who has been taught to hold it and supported in continuing to hold it. Faculty development, manager training, and onboarding should make space for this teaching. The five-place calibration is one of many possible curricular forms. Others will emerge as practice scales. For institutions whose pedagogy is anchored to the Scholar-Practitioner-Leader model (McCaslin, 2013), this teaching is not a discretionary add — it is the discipline by which the integrated identity is protected under AI conditions.

Third, the institutional response to the Career Optimism Index should not be to celebrate the workforce's turn to AI. It should be to ask why the workforce had to. Workers reaching for AI to close knowledge gaps that institutional investment had previously closed are signaling, through tool adoption, that human attention has been withdrawn from them. AI can compensate, partly, in the encyclopedic mode. AI can rebuild trust, in the metagogical mode — but only if practitioners are equipped and supported to hold that posture under load. The institution

that wants the second outcome must invest in the practitioners, not just the platforms.

The Career Optimism Index closes its executive summary with a binary: companies will either empower their workforce through AI-driven upskilling or risk losing talent, productivity, and competitive advantage (University of Phoenix, 2025). The binary is correct in form but underspecified in content. The choice is not between AI and no AI. It is between AI used to replace the practitioner-to-person relationship and AI used to restore it. One option compounds the trust crisis. The other has a chance, modest but real, of beginning to repair it.

A claim of this kind should be answerable to evidence, and this one is. It predicts that, holding tool and task constant, the extending posture leaves receivers feeling more known than the substituting one; that this felt recognition — not the output itself — is what moves trust; and that the effect compounds, encounter by encounter, into what an institution comes to call its climate. Were receivers unable to tell the difference, or were their sense of being known not to track the posture, the account would be wrong. Naming that condition is the difference between a conviction and a claim.

Conclusion

Metagogy was named in 2012. It described a posture catalytic teachers had always held: the willingness to be present to a learner's potential rather than to a curriculum's demand. The framework was advanced for its moment and, in honesty, did not catch on at scale. The instruments to embody it across cohorts and across organizations did not exist. The field was occupied with adoption questions of other kinds.

What has changed is the arrival of a tool that can either amplify or dilute the catalytic posture, depending on how it is held. Generative AI is metagogical in its possibility and encyclopedic in its temptation. The institutional task — for universities, for companies, for the workforce that the 2025 Career Optimism Index found in crisis — is not to choose whether to use it. It is to choose, every time it is used, in whose service. For institutions whose mission centers the Scholar-Practitioner-Leader, the choice is not abstract. It is the daily question of whether the integrated identity the model describes can be sustained under the specific pressures the new tools introduce.

Trust is not delivered by tools. It is delivered by people who hold tools well. The workforce, in its crisis of autonomy, is asking quietly whether anyone is still there. The metagogical posture is one answer to that question. It can be held. It can be taught. It is institutionally consequential. And the time has finally come for it to do the work it was named to do.

Author's Note

This manuscript was prepared in the metagogical posture it describes. I worked with a generative AI tool as a research assistant — to articulate, organize, and pressure-test arguments I had already formed. The voice, the judgment, and the substance are mine; the tool served the work. I disclose it in the same spirit I ask of the practitioners discussed here.

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Book Review — The Trusted Learning Advisor: The Tools, Techniques and Skills You Need to Make L&D a Business Priority

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Abstract

This review examines Keith Keating's book *The Trusted Learning Advisor* and its implications for the evolving role of Learning and Development (L&D) professionals in contemporary organizations. The book argues that L&D practitioners must move beyond the traditional role of training providers and instead operate as strategic advisors capable of diagnosing business problems and aligning learning solutions with organizational goals. Drawing on Keating's professional experience and frameworks such as the Intake, Discovery, Analysis, and Decision (IDAD) model, the text presents practical strategies for building credibility with stakeholders and demonstrating the business value of learning initiatives. The book also addresses the growing influence of artificial intelligence and the changing skills required of learning professionals in technology-driven workplaces. This review evaluates the book's contributions to both practice and theory and considers its relevance for leaders seeking to strengthen organizational learning cultures.

Keywords: learning and development, trusted advisor, organizational learning, artificial intelligence, workforce development

Introduction

Recent workforce research highlights growing uncertainty in modern workplaces. The 2025 Career Optimism Index® published by the University of Phoenix Career Institute reports record levels of burnout and declining confidence in career stability among American workers. According to the report, 51% of employees experience burnout, while 76% rely primarily on hope when navigating their professional futures (University of Phoenix Career Institute, 2025). These findings reflect a broader crisis of institutional trust and suggest that organizations must rethink how they support employee learning and professional

development. Against this backdrop, Keith Keating's book *The Trusted Learning Advisor* provides a timely perspective on the future of the Learning and Development profession. Keating argues that learning leaders must move beyond reactive training delivery and become strategic advisors who help organizations diagnose problems, guide behavioral change, and connect learning initiatives to measurable business outcomes (Keating, 2023). Through a combination of professional experience, case examples, and structured frameworks, the book provides a roadmap for repositioning learning professionals as influential partners in organizational strategy.

Critical Evaluation

One of the most significant strengths of *The Trusted Learning Advisor* is its emphasis on practical application. Keating avoids purely theoretical discussions and instead presents frameworks that practitioners can immediately apply within organizational settings. The IDAD model—Intake, Discovery, Analysis, and Decision—provides a structured approach for diagnosing business challenges before recommending training solutions. This diagnostic orientation encourages learning professionals to move beyond the common practice of simply fulfilling training requests. By asking deeper questions and examining root causes, L&D practitioners are better positioned to identify performance gaps and recommend solutions that may involve process changes, coaching, or organizational redesign in addition to formal learning programs.

A second strength of the book is its emphasis on the consultative mindset required for effective learning leadership. Keating argues that credibility and influence develop when learning professionals demonstrate a deep understanding of business priorities and communicate in terms that resonate with organizational leaders. Rather than focusing solely on instructional design techniques, the author emphasizes skills such as stakeholder engagement, strategic questioning, and data-informed decision making. This perspective reflects a broader shift in the field of learning and development toward roles that resemble internal consulting rather than traditional training delivery.

The book is also particularly relevant in its treatment of emerging technologies. Keating acknowledges that artificial intelligence and digital learning platforms are rapidly transforming the learning landscape. Automated content creation tools, adaptive learning systems, and AI-driven analytics are reshaping how organizations design and deliver learning experiences. Instead of framing these developments as threats to the profession, Keating positions them as catalysts that push learning leaders toward higher-value contributions such as guiding organizational transformation and supporting workforce adaptability.

Despite these strengths, the book occasionally assumes that learning professionals possess sufficient organizational influence to challenge stakeholder assumptions. In many organizations, however, learning

teams continue to operate within limited authority structures where their role is perceived primarily as training delivery rather than strategic consultation. While Keating emphasizes the importance of building credibility and trust, the discussion could benefit from additional exploration of how learning leaders can gradually build influence in environments where executive support for learning initiatives is still developing.

Another limitation involves the relatively limited engagement with academic research in organizational learning and change management. The book is clearly written for practitioners and therefore prioritizes practical guidance over theoretical integration. While this focus enhances accessibility for professionals working in corporate environments, readers seeking a deeper exploration of scholarly literature may find the discussion somewhat abbreviated. Nevertheless, the practical orientation of the text is also one of its greatest strengths, as it provides actionable strategies that can be implemented immediately in organizational contexts.

Conclusion and Recommendation

Keith Keating's *The Trusted Learning Advisor* offers a practical and timely contribution to the evolving conversation surrounding the role of learning professionals in contemporary organizations. The book will be particularly valuable for learning and development practitioners, human resource leaders, organizational development specialists, and graduate students studying workforce development or leadership. Readers who are responsible for designing learning strategies or influencing organizational change will likely find the book especially relevant.

The practical orientation of the book makes it particularly useful for professionals seeking to strengthen the strategic position of learning functions within their organizations. The frameworks presented in the text, particularly the IDAD model, can be applied in corporate training departments, leadership development programs, and talent management initiatives. By encouraging practitioners to diagnose root causes of performance challenges rather than simply delivering training solutions, the book promotes a more analytical and consultative approach to learning leadership.

For scholars and practitioners working within fields

related to organizational learning and workforce development, the book also serves as a bridge between theory and practice. The growing influence of artificial intelligence and rapidly changing skill demands requires learning professionals to adopt roles that extend beyond instructional design. Keating's work highlights the importance of strategic thinking, stakeholder engagement, and organizational influence.

Despite its many strengths, the book could be strengthened by further engagement with existing academic literature on organizational learning and change management. Additional connections to established theoretical frameworks could deepen its relevance for academic audiences. Expanding the discussion of how learning leaders can build organizational influence—particularly in environments where learning functions are not yet viewed as strategic partners—could also enhance the book's impact.

Overall, *The Trusted Learning Advisor* provides a thoughtful and actionable framework for redefining the role of learning professionals in contemporary organizations. By encouraging practitioners to move beyond reactive training delivery toward strategic advisory roles, Keating offers a vision of learning leadership that aligns closely with the evolving needs of modern workplaces. For professionals seeking to strengthen the strategic value of learning within their organizations, this work offers both inspiration and practical guidance.

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Book Review — Grounded Leadership and the Work of Trust: Reviewing Brené Brown's *Strong Ground*

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At a time when work across U.S. institutions is increasingly shaped by burnout, distrust, rapid change, and change fatigue, Brené Brown's *Strong Ground* offers a timely synthesis of what durable leadership and healthy organizations require. Rather than siloing workplace strategy, leader development, and organizational wellness, Brown presents them as interdependent conditions of institutional trust. Her central concept, grounded confidence, is not a performance style or personality trait, but a disciplined leadership practice rooted in self-awareness, courage, emotional regulation, trust, strategic thinking, and communication (Brown, 2025a). Brown also extends the book's practical application through companion online resources that include reflection tools and implementation materials for readers and organizations (Brown, 2025b). As a result, *Strong Ground* is more than a conventional leadership book; it offers a compelling framework for how institutions might respond more effectively, strategically, and humanely to the pressures shaping contemporary organizational life.

Overview of the Work

Brown's central purpose in *Strong Ground* is to show that organizations cannot build resilience, agility, and innovation on unstable foundations. Instead of layering new capabilities on top of existing dysfunction, she argues that individuals and institutions must first develop core stability, relational grounding, and the internal strength necessary to face uncertainty well (Brown, 2025a). This claim is especially relevant to contemporary workplaces, where leaders often respond to strategic and cultural problems with more process, tools, or messaging rather than doing the deeper work required to build trust, clarity, and human capacity.

Brown's perspective is distinctly human-centered, though not sentimental. She treats humanity not as an obstacle to organizational effectiveness but as a precondition for stronger judgment, more effective leadership, and more sustainable institutions. That orientation allows the book to speak directly to

present-day concerns about worker disengagement, institutional credibility, and the erosion of trust across organizational settings.

Workplace Strategy and the Problem of Institutional Trust

One of the book's strongest contributions is its reframing of workplace strategy. Brown rejects the assumption that strategy is merely a technical exercise in planning and control. She presents it as a relational, iterative, and mission-focused practice. Effective strategy, in this account, depends on whether people trust one another enough to engage in difficult conversations, challenge assumptions, and stay open to learning. As Brown puts it, "challenging is a function of trust" (Brown, 2025a). That emphasis aligns with Jim Collins's perspective that enduring organizations require disciplined focus and clear alignment between purpose and action (Brown, 2025a; Collins, 2001; Collins & Lazier, 2020).

Brown suggests that strategic confusion is often not simply an information problem but a trust problem. People are far less likely to invest in institutional goals when they do not understand the rationale behind decisions or when strategy feels disconnected from an organization's mission and values. Strategy is not only operational but also relational and ethical. Brown is also persuasive in her critique of reactive organizations. Leaders who lack strong ground, she argues, often chase what is immediate, fashionable, or anxiety-reducing instead of what is truly strategic (Brown, 2025a). This insight is especially useful for institutions trying to respond to instability without deepening employee cynicism. A strategy that is not grounded in trust, clarity, and courage will often be experienced as organizational noise rather than genuine leadership.

Leader Development as Institutional Work

The book is perhaps strongest in its synthesis of leader development. At the center of Brown's framework is the idea that leadership is less about position than about responsibility for cultivating growth. As she writes, "A leader is anyone, regardless of title and position, who holds himself accountable for finding potential in people and ideas, and who has the

courage to develop that potential" (Brown, 2025a). In *Strong Ground*, this vision of leadership moves beyond managerial competence alone and instead emphasizes the cultivation of the internal capacities that make trustworthy leadership possible, including self-awareness, vulnerability, humility, curiosity, emotional regulation, discipline, and accountability. This emphasis resonates with Daniel Goleman's (2004) stance that effective leadership depends not only on technical competence but also on emotional intelligence and self-awareness. Brown's framework is therefore especially useful for institutions trying to develop leaders who can navigate complexity without transmitting fear, confusion, or defensiveness downward through the organization.

A particular strength of Brown's approach is that it does not romanticize leadership. She distinguishes between armored leadership, which operates from self-protection, and daring leadership, which is grounded enough to acknowledge uncertainty, own mistakes, and remain accountable in relationships with others (Brown, 2025a). That distinction matters because institutional trust is often experienced first through supervision. Employees do not typically encounter "the institution" as an abstraction. They encounter managers and leaders whose behavior either creates clarity, dignity, and accountability or produces confusion, fear, and withdrawal.

Brown's attention to coaching further strengthens this part of the book. She argues that leaders are often expected to perform at high levels without the developmental support that other high-performing professionals, like professional athletes, routinely receive (Brown, 2025a). That observation is compelling because it reframes leader development as an ongoing developmental process rather than a simple matter of evaluation. For institutions concerned with engagement and trust, this is a significant point. Underdeveloped leaders frequently reproduce underdeveloped cultures.

Organizational Wellness, Belonging, and Communication

Strong Ground is equally important as a contribution to organizational wellness and belonging. Brown does not reduce wellness to self-care language or belonging to symbolic inclusion. Instead, she treats both as organizational outcomes shaped by trust,

communication, emotional literacy, and connection (Brown, 2025a). Her use of Charles Feltman's (2024) definition of trust as choosing to risk making something valuable vulnerable to another person's actions gives the book a particularly strong conceptual anchor. In workplace terms, belonging depends on whether people experience the organization as a place where what matters to them is treated as safe, where they can speak honestly, and where accountability does not come at the expense of dignity.

Brown's attention to emotional granularity also strengthens the book's relevance to employee wellness. Drawing on themes developed in *Atlas of the Heart* (Brown, 2021), she shares that accurately naming emotions increases understanding, meaning, and choice. This emphasis parallels Susan David's (2016) argument that emotional agility depends on engaging one's inner experience with greater nuance and flexibility. In practice, Brown suggests that healthier workplaces are not those in which difficult emotions disappear, but those in which people have the language, awareness, and support to respond to those emotions in constructive ways.

The book's discussion of overwhelm, cognitive load, and recovery deepens its relevance to workplaces today. Brown discusses Sophie Leroy's (2009) research on context switching and depletion through the concept of attention residue (Brown, 2025a). More recent research by Ward van Zoonen and Yuri Scharp (2025) supports the continued relevance of that concern by showing that daily work intrusions are associated with attention residue and exhaustion. That argument is particularly important for U.S. employees operating in environments of constant task switching and sustained uncertainty. Brown, therefore, moves the wellness conversation beyond generic calls for resilience and instead acknowledges the real cognitive and emotional costs of contemporary institutional life.

Communication is another area in which Brown connects trust, belonging, and wellness with notable clarity. She repeatedly emphasizes that communication must be accessible, honest, timely, and oriented toward connection rather than deception. Her claim that "clear is kind" while "unclear is unkind" remains one of the most compelling formulations in her leadership work (Brown, 2025a). This idea has direct institutional relevance. When leaders fail to own and communicate change clearly, employees often experience the result as distrust, burnout, and

frustration. For readers concerned with institutional engagement and trust, this is one of the book's most important lessons: organizational communication is not merely informational; it is ethical and relational.

Critical Evaluation

As a scholarly work, *Strong Ground* is not without limitations. It is strongest as a research-informed synthesis rather than as a conventionally structured empirical study. Brown draws on grounded theory, leadership practice, and a broad interdisciplinary range of thinkers, but the book does not foreground methodology in the way a traditional academic monograph would (Brown, 2025a). Readers seeking a tightly bounded research question, a clearly specified sampling design, or a detailed analytic method may find the work more synthetic than methodologically explicit.

At the same time, the book's translational quality is also one of its greatest strengths. Brown builds *Strong Ground* through sustained engagement with a wide range of thinkers whose ideas deepen the book's central concerns with workplace strategy, leader development, organizational wellness, belonging, and trust. Her discussion of Jim Collins's *Good to Great* and *BE 2.0* sharpens the book's emphasis on strategic discipline, mission clarity, and institutional alignment, while her engagement with Adam Grant's *Think Again* strengthens her account of curiosity, challenge, and better decision-making. Brown also draws meaningfully on Ginny Clarke's *Career Mapping*, Amy Webb's *The Signals Are Talking*, Sarah Lewis's *The Rise*, Dan Pink's *A Whole New Mind*, Abby Wambach's *Wolfpack*, and Aiko Bethea's *Anchored, Aligned, Accountable*, whose perspectives expand the book's treatment of growth, uncertainty, integrative thinking, courage, and values-based leadership. These conversations are further strengthened by Brown's engagement with Charles Feltman's *The Thin Book of Trust*, Susan David's *Emotional Agility*, Daniel Goleman's "What Makes a Leader?", and Donella Meadows's *Thinking in Systems*, all of which help make *Strong Ground* feel both intellectually layered and practically useful for readers concerned with how institutions become more trustworthy, humane, and strategically coherent (Brown, 2025a).

Conclusion

Overall, *Strong Ground* stands out because it refuses to separate institutional effectiveness from human wholeness. Brown argues, in effect, that strategy without trust becomes performance theater, leadership without vulnerability becomes armor, and wellness without belonging becomes branding. Its central lesson is that employees do not merely need more efficient institutions. They need institutions grounded enough to earn trust through clarity, courage, accountability, and care. *Strong Ground* is not just a leadership text, but a timely ground for rebuilding institutional trust where it matters most: in the daily experience of work.

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Mindfulness and Resilience in Higher Education: Concepts, Consequences, and Best Practices Recommendations

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Abstract

In recent years there has been a great increase in the amount of academic and professional literature focusing on the benefits of an attitude of mindfulness and resilience. In higher education, an embrace of these concepts can create a place where faculty and students are “present, focused and capable of the kind of thinking that education requires” (Misha, 2026, para. 12). This article, aligned conceptually with Construal Level Theory, offers a brief review and summary of academic and professional works affirming the beneficial practices of mindfulness and resilience. Five recommendations are presented for applying mindfulness and resilience in the higher education environment. The recommendations are especially applicable to online programs that are often found to be deficient in terms of faculty engagement and student satisfaction with learning (Schwartz, 2020).

Introduction

It can be argued that the working climate within higher education has rarely been more universally challenging than it is today. It seems everyone has an objection to something within higher education, whether that be its structure, philosophy, values, curriculum, marketplace role, costs, or rewards.

The intent of this article is not to agree or disagree with the critics or propose change in the structure and service of higher education. Rather, this article focuses on the opportunity for faculty and students to think differently about how they carry out their academic work. Too often, a college education brings about an increase in facts without sufficient attention to the mindset through which fact-gathering was conducted. The joy of engaging in learning can be overshadowed by the indomitable stresses resulting from a big

bureaucracy with a myriad of rules and policies, high costs, confusing expectations, and delayed rewards.

This narrative will identify three key inter-related institutional challenges that create stress for faculty and students. It will introduce and discuss the concepts of mindfulness and resilience and show how Construal Level Theory offers relevant perspective in which to consider the learning experience. The narrative ends with research-supported best practices recommendations to help faculty and students become more mindful and resilient.

Challenge #1: Coronavirus and Its Lingering Effects

The Coronavirus pandemic of 2019-2023 offered an unprecedented destabilizing blow to institutions of higher education. Few if any of the norms are the same

today as they were before the pandemic. The impact of Coronavirus is everywhere in academic and social life.

Prior to the pandemic, many colleges and universities were invested almost exclusively in a system requiring the physical presence of faculty and students. The pandemic ended that, perhaps forever (Barshay, 2024) as institutions speedily embraced Zoom and similar online technologies. Many faculty, struggling to adapt, watched as academic programs were cut, layoffs were carried out, and course section enrollments increased (Ramlo, 2021; Whitford, 2020). Some liberal arts degree programs already threatened by low enrollments disappeared altogether.

The shift to online learning was difficult for students, as well - particularly those lacking technical skills or experience. The move to remote teaching “magnified [existing] issues and created new ones” (Gould, 2020, p. 45). These included addictions, anxiety, isolation, depression, and physical and mental health challenges (Strata Education Foundation, 2020). An estimated 296,000 students planning to transfer between two-year institutions or from a two-year program to a four-year program simply gave up and dropped out (National Student Clearinghouse Research Center, 2022).

Challenge #2: The Impending Demographic Cliff

At about the same time Coronavirus arrived, experts began warning of a significant projected enrollment decline referred to as the Demographic Cliff. The number of births in the U.S. has been dropping at the rate of at least 1% per year since 2007 (Lane, Falkenstern, & Bransberger, 2004). Many fewer high school graduates will be advancing to college through at least the year 2042 (Vyse, 2025).

The expected enrollment decrease will hit some colleges and universities harder than others. Across the landscape of higher education, preparations are already being made. There are reports of faculty and staff reductions, program closures, and revised recruitment strategies.

Since 2004, at least 861 U.S. colleges and universities have gone out of business, in most cases because of declining enrollment. When an institution closes, “more than 60 percent of the students at a shuttered campus become college dropouts, adding to the large

pool of U.S. adults who have college loans and no degree (Barshay, 2022, para. 9). Experts expect many more colleges will close (Marcus, 2025). The cuts taking place now are affecting faculty and students even before the full impact of the Demographic Cliff is realized.

Challenge #3: Doubts About the Expense and Value of a College Education

For ten years, there has been a steady decline in the number of Americans who believe that the benefits of a college degree exceed the costs (Ma, 2025). There’s increasing recognition that the emergence of Artificial Intelligence has weakened the labor market for new graduates in a variety of fields, while the cost of a college education continues to rise.

The overwhelming evidence still indicates college is a good investment (Meija, Perez, Hsieh, & Johnson, 2025). Regardless, large numbers of prospective students see too many barriers to access. The Trump administration’s ending of income-driven federal loan repayment plans means millions of existing graduates already deep in debt may struggle to make monthly loan payments on entry-level salaries (Jones, 2025). This, too, is a discouragement to prospective students.

Many members of Generation Z have soured on the concept of higher education. These students and prospective students, born between 1997 and 2012, are digital natives who tend to be progressive, technologically astute, but socially anxious. The drama of social media spills out from their cell phones and into real life. Most want to learn but are disinterested in classroom lectures (McRary, 2026).

Then there’s “helicopter parenting,” a phenomenon in which an over-controlling parent intervenes in their adult child’s academic and social interactions. This increasingly prevalent parenting tactic can stunt emotional development and interfere with young people’s transition to responsible adulthood (Hunt, 2008). Even as students try to imagine a happy independent life after college, the commencement dream can be overshadowed by financial realities.

Mindfulness – What It Is, and Is Not

Mindfulness has been interpreted in a variety of

ways. At its most basic, it involves “being awake and aware – being tuned in to yourself, to others, and to the environment” (Boyatzis & Yeganeth, 2012, p. 4). To be mindful means to be thoughtful in the present moment, and to allow that thoughtfulness to guide future actions in a disciplined way. Mindfulness means focusing on the processes of life more so than the outcome (Serafin, 2007). It’s about the trip, not the destination.

Mindfulness is not a religion, though it has its roots in Buddhist meditative practices. Mindfulness is not health care, though its benefits have been documented in medical research. Mindfulness has been called “a time-tested antidote to operating in autopilot,” (Levasseur, 2012, para. 11). Mindfulness is acting in the present moment, open to new ideas, and liberated from the tyranny of old mindsets (Langer, 1989). Mindlessness, on the other hand, involves distracted behavior. Individuals who engage life mindlessly are more focused doing than being. A mindless workplace or classroom is a place of stress, confusion, and disorder (Swanson, 2024).

It’s important to distinguish between mindlessness and serious clinical issues common to college students such as anxiety, depression, eating disorders, and alcohol or substance abuse. Mindfulness isn’t a cure for these challenges. But it can help create an environment so these challenges can be more readily identified and addressed (Long, et al., 2023).

Resilience – What It Is, and Is Not

The U.S. Department of Health & Human Services defines resilience as “the ability of individuals not to succumb to adverse experiences” (Resilience, 2015, para. 1). Resilience “inoculates individuals against the impact of adversity” (Bajaj & Pande, 2016, p. 63). It is the capacity to recognize and adapt to life that doesn’t always go according to plan (Richo, 2005). A resilient individual can live an authentic life, maintain perspective, and make progress toward personal and professional goals despite any stress and uncertainty (Winwood et al., 2013). Resilience is not a strategy for burying the emotions, enduring a toxic environment, or denying unpleasant realities. It is not ‘fake it ‘till you make it.’

In higher education, it’s inevitable that faculty will experience stress as they balance all the demands that come with too many classes to teach, too many

students to advise, the burden of seemingly unending grading, and the constant administrative pressure to carve out quality time for high-quality research and thoughtful service. Students will experience stress, as well, as they deal with difficult course content, perplexing assignments and tests, conflict with peers, struggles with time management, financial difficulties and work-life balance.

Rarely if ever is resilience institutionalized in behavioral expectations or curriculum. Instead, colleges and universities prioritize “emotional safety” (Mintz, 2025, para. 10). Instead of preparing students to handle discomfort and stress that accompanies higher learning, institutions provide wellness days, safe spaces, nap rooms, trauma-informed counseling, and other buffers that “can create an environment where students come to rely heavily on external support rather than developing the skills to handle challenges independently” (2025, para. 14). What faculty too often get from administration is a top-down communication of new, unrealistic mandates, unclear goals, shorter deadlines to complete the work, and fewer resources with which to operate (Misha, 2026).

Mindfulness and Resilience are Complimentary

To be mindful is to stay awake and aware in the present moment, with a non-judgmental approach to circumstances. This attitude would lend itself to resilience, the determination not to become helpless when faced with troubles (Jacobs, 2015). These are not easy positions to assume in a stressful, ever-changing environment. But many studies affirm that an attitude of mindfulness can lead to resilience. For a specific example in the context of higher education, a 2016 study involving 327 college students concluded that “resilience did significantly mediate between mindfulness and greater life satisfaction” (Bajaj & Pande, 2016, p. 66). In short, “Helping you build resilience is one of the key benefits to developing a day-to-day mindfulness practice” (Moore, 2022, para. 1).

Construal Level Theory

It is appropriate to consider these issues via Construal Level Theory (Trope & Liberman, 2010). CRT focuses on how people’s thoughts and behaviors are affected

by perceptions of psychological distance. Perceptions of distance come about when people feel they are removed from the direct experience of phenomena, such as when students are engaged in learning new ideas but are hesitant to converse face-to-face with an instructor. Faculty can perceive this distance when trying to communicate course concepts to inattentive students.

CRT identifies high-level construal elements as abstract and typically perceived as less immediate. The challenge here, of course, is that “abstract benefits are generally harder to grasp and less compelling than concrete ones” (Wannow & Haupt, 2026, p. 2). An example would be an academic advising situation with a student who is ambivalent about performance in a course. The faculty member offering advice might help the student understand that performance in the lower-level course being taken now is important because the course is a prerequisite for a required and more challenging course next year.

CRT identifies low-level construal elements as more absolute and immediate (Yuan & Sun, 2025). For example, in an online class situation a student might feel anxious when unable to ask questions of an instructor today about a quiz happening tomorrow. In the absence of faculty guidance, the student might choose to review lecture notes and chapter readings and then reach out to fellow students in the class to feel more confident about what the quiz will entail.

The challenge for educators today is to deliver guidance “without having students feel remote and removed in the process” (Schluger, 2021, para. 16). Applying CRT can help both faculty and students be mindful and resilient by identifying the psychological distance involved with each of the challenges they perceive now. Stronger ethical decision-making can then result (Ross & Jones, 2025).

Recommendations

It’s not reasonable to expect to bring about universal mindfulness and resilience. However, the literature reveals a wealth of strategies that can be employed by faculty and students to bring better quality day-to-day interactions.

Recognize and Understand the Two Dimensions of the Mind

Human beings use the scanning mind to broadly

perceive the environment, be alert to what’s happening within it, and help tune in to the feelings and the emotions of other people. The focused mind is used for deep attention to problem-solving and task completion. It’s impossible to simultaneously scan and focus. But that’s what many people attempt to do in stressful and time-sensitive situations. The mindful and resilient faculty member works to understand that students may not perceive every situation with the level of clarity needed. The teacher models compassion and patience with students. Likewise, the mindful and resilient student will remember to be patient when course content seems unclear, or when guidance is needed. The student will remember that the teaching experience brings its own unique challenges, and sometimes faculty also fail to see situations clearly.

Take a Collaborative, Non-Linear Approach

When showing students how to approach a conflict or problem, the mindful and resilient faculty member can encourage students to deviate from traditional Western analytic top-down thinking. The Western approach assumes there’s only one correct answer. In reality, most challenges can be approached from a number of perspectives. The teacher can encourage students to question the scenario and examine different options. Likewise, mindful and resilient students can initiate the questioning. The first approach that comes to mind may be fastest but not the most appropriate.

Embrace Complexity

Instead of trying to make things as simple as possible, the mindful and resilient faculty member can embrace complexity and urge students to do the same. Not every situation requires an immediate answer. Sometimes, just observing is enough. Likewise, the mindful and resilient student can consciously resist the urge to speedily check tasks off a to-do list and consider that careful attention is a precursor to action. This is especially the case in a modern social media-fixated society that screams at us for 24/7 electronic engagement and response.

Expect Ambiguity

Life is, by nature, ambiguous. There are always more facts unknown than known. The mindful and resilient faculty member embraces and expects ambiguity, and encourages students to do so, as well. In the author’s field, public relations and strategic communication,

professionals recognize that even the best PR plan cannot guarantee particular outcomes. There are always questions that cannot be answered. In this particular professional field and in all areas of life, perhaps the idea of starting with a mindful and somewhat flexible plan is more important than trying to assure absolute certainty of every outcome. This can be a valuable lesson for both faculty and students because it encourages mindful engagement as work begins, and resilience throughout the project.

Balance Work and Life

Finally, it is easy for us all to become caught in Western cultural expectations that dictate a technical, rational approach to work at the expense of all else. These same expectations assign value by quantity of output instead of quality of interaction. The mindful and resilient faculty member learns and models for students a balance of work and life. This comes in part by saying no to requests that do not need to be met. It's a strategic negative response, according to workplace coach Jae Ellard. "A strategic no can mark the beginning of a thoughtful, intentional conversation about workload, role definition, and office dynamics," Ellard writes (2015, p. 67).

Likewise, the mindful and resilient student must learn to manage all the demands that accompany the pursuit of a degree. This is especially important for adult learners who have work and family obligations. In work, and in non-work, common sense tells us balance is the natural way of things.

Conclusion

The benefits of an attitude of mindfulness and resilience are clear, as documented in clinical studies and personal experience reported in academic and professional literature (Diebold, 2020; Harvard Health, 2017; Zhang & Wang, 2022). This would be especially valuable in online learning. The lack of contextual clues that are present in face-to-face interaction but absent in the online classroom brings about instructional gaps that inhibit collaboration between faculty and students (Salarvand, Mousavi, & Rahimi, 2023). Online learning requires higher self-discipline and independence because there's less immediate real-time faculty-student engagement and social interaction (Schluger, 2021).

Faculty should take the lead in expressing mindfulness

and resilience because students will model classroom-appropriate attitudes and behaviors (Kosal, 2022). It's also important to remember that faculty should help students to mindfully enter their chosen professions and not replicate the unproductive attitudes already present there (Carroll, 2006). An example of this is a study that found the mindless behaviors reported by university students were nearly identical to the mindless behaviors reported by professionals working in the field students were preparing to enter (Swansson, 2020).

A full embrace of these new mindsets cannot be accomplished immediately. Structured programs such as the University of Massachusetts Mindfulness-Based Stress Reduction Program (UMass Memorial Health, 2026) suggest that up to eight weeks of dedicated attention is typical to experience benefits. Over the long term, five tangible signs of success include a pause before reaction to challenging events, more restful sleep, a reduction in physical tension, recovery faster from setbacks, and "improved concentration during regular activities signals that mindfulness is reshaping your attention system" (Thompson, 2025, para. 6).

For higher education faculty and students, the adoption of practices of mindfulness and resilience has great potential to make responsibilities inside and outside of the classroom more pleasant and manageable. This goal is appropriate, reasonable, in line with tenets of student learning, and could easily be embraced by all participants.

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- Dr. Rodney Luster - University Research Chair, Center for Leadership and Entrepreneurial Research (CLER).

Have ideas or questions? Please contact Dr. Mansureh Kebritchi (mansureh.kebritchi@phoenix.edu), Dr. Kimberly Underwood (kimberly.underwood@phoenix.edu), Dr. Rodney Luster (rodney.luster@phoenix.edu), or Dr. Mark McCaslin, Editor-in-Chief (mark.mccaslin@phoenix.edu).

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