

TLIC PAPER

Workforce Training in the Age of AI: Perspectives from a School of Professional Studies

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ABSTRACT

Learning and development (L&D) units play a central role in advancing organizational goals. The emergence of generative AI (GenAI) presents both an opportunity and a disruption to traditional models of workforce training, requiring L&D leaders to rethink strategies for learning design, change management, and continuous upskilling. In this paper, we identify transferable insights from the higher education context that can inform corporate strategies. We draw from survey data of faculty and students at the NYU School of Professional Studies, combined with an analysis of industry-focused reports and case studies. More specifically, L&D teams are uniquely positioned to provide guidance and support for workforce development that empowers employees to use GenAI tools in ways they trust and understand. We encourage L&D teams to engage new and existing employees with opportunities to build trust, rethink bottom-up approaches, and center AI-Human partnerships. Creating opportunities for employees to use AI technologies in ways that build on their knowledge and experiences, Human-centered AI (HCAI) L&D strategies ensure that GenAI adoption is designed as a force multiplier rather than a replacement.

KEYWORDS

generative AI, learning and development, corporate training, professional development, talent development, upskilling

1 INTRODUCTION

Learning and development (L&D) units play a central role in advancing organizational goals and enhancing staff knowledge and skills. However, the rapid rise and widespread use of generative AI (GenAI) raises several questions about how L&D departments can best support workers in the Age of AI. Understanding what questions and concerns employees have about AI in the workplace is an essential first step to identifying what issues and challenges should be addressed when incorporating GenAI tools into an organization. In this paper, we draw on data from a Fall 2024 faculty

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and student survey on GenAI at NYU School of Professional Studies as an example. We combine findings from our survey and non-academic, industry-focused articles that explore the implications of GenAI technologies on the workforce to make recommendations for L&D units to strengthen corporate learning. While every organization will need to evaluate the nuances of their employees and industry, we believe building trusted, bottom-up, human-AI partnerships provide a critical foundation for upskilling. This approach is also responsive to the rapid pace of change and inspires new ways of working. L&D teams are uniquely positioned to lead this critical transformation within organizations in ways that support strategic shifts and AI adoption goals.

1.1 Faculty perspectives on generative AI

During the Fall 2024 semester, there were 682 faculty members teaching at the NYU School of Professional Studies. From this population, we selected a random sample of 246 instructors to send a survey on GenAI. The overall response rate to the survey was 64 percent (157/246). Although the survey results suggest a broad range of faculty views on GenAI, the perspectives most relevant to this article include:

1. Students should learn to use GenAI tools.
2. AI will be a central component of students' professions so it is critical for them to learn how to use these technologies responsibly.
3. Students must develop foundational knowledge in order to use AI effectively.
4. We should be concerned about the impact of GenAI tools on learning.
5. GenAI tools have shortcomings (e.g., hallucinations, bias).

These views on GenAI are echoed by others across academia and industry [1]–[13].

1.2 Student perspectives on generative AI

At the time of the survey in Fall 2024, 38% of graduate students and 11% of undergraduate students reported using GenAI tools often, with sometimes and rarely selected as the next highest self-reported categories of use. This was before NYU adopted a university-wide AI platform in March 2025. Since then, we believe the use of GenAI has increased significantly. Reasons that students who self-reported that they never used GenAI tools included written responses: “Because I believe I am smarter than AI,” and “They [AI tools] are bad for the environment and I don't trust the information they provide.” Among the students in our survey, there was an almost even split of use reported across personal, school, and work, suggesting that those using these tools in one capacity were more likely to use GenAI tools across domains.

In the open comments of our survey, students most frequently requested more curriculum updates that would help them use and understand these tools. “Do not prohibit the use of AI, but teach students how to better use AI for learning,” and “Provide examples of tasks that Generative AI can enhance, such as brainstorming, content summarization, or data visualization, while encouraging critical thinking, which I think is really important to learn how to ‘use’ AI.” These requests for guidance with GenAI tools were largely driven by a sense of inevitability and an understanding from students that their future careers would require knowledge of these tools. “AI is being embedded everywhere. Students need to know how to yield

it in order to adapt.” There were also many mentions of wanting to use the tools in appropriate and approved ways, with an emphasis on ethical use. “We should learn how to use it correctly and fairly and ethically.”

1.3 Perspectives from industry

Many of the findings from our faculty and student survey offer transferable insights from the higher education context that can inform corporate GenAI adoption strategies and the critical work of learning and development teams charged with supporting those strategic shifts. For example, it is imperative to provide guidance and support for workforce development that empowers employees to use GenAI tools effectively because curricular guidance within academic curricula is only just emerging.

While recent graduates may be more familiar with these tools from class activities, it is very likely that many new and existing employees will need additional learning and development opportunities that allow them to build trust, gain fluency, build agency, and center AI-Human partnerships. We see these steps as essential to the goal of developing “superworkers” or employees that are empowered and supported by AI in their everyday work life. “In a world where AI agents support every employee, a Superworker can step up their value, productivity, and output by learning to optimize their use of AI systems” [14]. Companies that have built a culture of adaptability and change will emerge as “superworker companies.” These are predicted to be companies that invest in cutting-edge technology and prioritize organizational and individual learning. That is, it is not enough to make tools available and hope for productive adoption, particularly when the investment in new tools is substantial. In addition to investment, there are productivity gains to consider. Goldman Sachs predicts that by 2027, AI will automate 25% of work, contributing almost 2% additional productivity to the GDP [15]. To achieve these outcomes, employees need to trust that they will be empowered to consider GenAI as a tool to work with, rather than a replacement to automate their current activities.

2 HISTORY OF STAFF DEVELOPMENT AND TRAINING

Approaches to developing employees have moved from Progressive-era efficiency and early vocational policy to today’s analytics-driven, skills-focused systems aligned with public workforce policy. Throughout various eras, there have been persistent tensions between efficiency and human development, growing expectations for evidence of impact, and periodic reframing from “training” to “talent development.”

The Progressive Era established the idea that performance could be engineered. Taylor’s *Principles of Scientific Management* [16] promoted time-and-motion analysis and standardized work methods (and training to teach them), infusing a durable connection between training and productivity. At the same time, the federal government advanced vocational education as a public good through the Smith–Hughes Act of 1917 [17] that later converged with employer training [18]. During World War II, the Training Within Industry (TWI) program included scalable, shop-floor training methods to rapidly upskill millions of workers. TWI’s emphasis on breaking tasks into key steps, coaching at the job, and documenting standard methods influenced postwar industrial training and later lean practices [19]. In 1943, practitioners formed the American Society for Training Directors (ASTD) (later ASTD/ATD), providing a national

platform for standards, conferences, and publications that would shape practice for decades. By the late 1950s, Kirkpatrick's [20] four levels (reaction, learning, behavior, results) became the field's most diffused evaluation model, orienting practice toward demonstrable outcomes. In 1961, McGehee and Thayer [21] articulated organizational, task, and person analysis, aligning training to strategic and job-level requirements while organization development (OD) and T-groups (sensitivity training) shifted attention from individual skill to group dynamics, leadership, and change to elevate the aims of training beyond narrow job instruction.

Nadler (1969) introduced the term "human resource development" and systematized it in *Developing Human Resources* [22], positioning training alongside education and development in service of organizational goals. As U.S. firms pursued Total Quality Management and later Six Sigma, training became tightly linked to process capability, problem solving, and continuous improvement offered at scale and tied to certification paths [23]. Research foci pivoted to transfer of training to ensure on-the-job application. Baldwin and Ford's review [24] became foundational, framing trainee characteristics, training design, and work environment as the key levers.

In the late 1990s, learning management systems (LMSs) emerged, and federal standardization efforts for e-learning content began. The DoD's Advanced Distributed Learning (ADL) initiative released SCORM in the early 2000s [25], offering trackable modules across platforms for digital learning. The Job Training Partnership Act (JTPA) of 1982 [26] [27] shifted federal job training toward block grants and performance targets, influencing how public-private partnerships thought about training outcomes.

In the public system, the Workforce Innovation and Opportunity Act (WIOA, 2014) [28] [29] updated governance and funding for training, emphasizing sector partnerships, employer engagement, and outcomes, tightening the linkage between workforce policy and employer-side development. The pandemic of 2020 prompted a rapid shift to virtual and blended learning and renewed emphasis on reskilling/upskilling for digital roles.

The field has progressively evolved from a "training" paradigm toward a broader vision of capability building. Today, development is increasingly delivered through blended modalities, supported by mentorship, peer learning, and communities of practice, and sustained by performance support tools. This marks a departure from the traditional classroom-centric model, placing equal emphasis on continuous learning and organizational ecosystems.

GenAI has ushered a new era when training and development are increasingly characterized by personalization, automation, and data-driven insight. GenAI enables adaptive learning that responds to learner profiles, predictive analytics that guide workforce planning, and automated tools that reduce administrative burden while amplifying instructor and manager impact. This transformation suggests the move from viewing training as discrete interventions to understanding learning as an AI-augmented, continuous, and strategically embedded process within organizations.

3 THEORETICAL FRAMEWORK

Our framework for examining adoption of GenAI is informed by research on the integration of technology, the impact of technology on teaching and learning [30], and evidence-based practices for incorporating tools/apps/platforms in the workplace [31].

Theoretical frameworks like the Technology Acceptance Model (TAM) [32], the Unified Theory of Acceptance and Use of Technology (UTAUT) [33], and the Diffusion of Innovations Theory (DOI) [34] help us to understand the adoption of and resistance to GenAI tools. These theories highlight a range of factors that impact perceptions of technology (e.g., usability, motivation, usefulness, familiarity) and utilization. TAM, UTAUT, and DOI also underscore the importance of context and relationships when examining how individuals and institutions navigate the emergence of new technologies [35]. Consequently, we examine current educational perspectives and the social discourse around generative AI [36, 37, 38, 39] and pay particular attention to literature in areas such as strategies to foster critical AI literacy skills for students [40, 41, 42]; guidance for redesigning assignments, activities, and assessments [43, 44]; the limitations of these tools (e.g., hallucinations, bias) [45]; reimagining teaching and learning in the AI age [46, 47]; and the impact of AI on the economy and workforce development [48].

Our work is also informed by the research on learning technologies. Given the novelty and lack of longitudinal empirical studies on tools like OpenAI ChatGPT, Google Gemini and NotebookLM, Microsoft Copilot, Anthropic Claude, and Perplexity AI, it is important to ground our work in research by scholars who critically investigate the impact of emerging technologies on learning [49, 50, 51, 52] and examine the experiences of employees in organizational contexts [53]. This literature provides valuable insights into effective education technology implementation approaches and clarifies best practices in the development of tech-rich learning environments [54].

As scholar-practitioners, we are also influenced by social constructivism [55, 56] and the learning science literature [57]. These perspectives provide a sociocultural and cognitive framework for analyzing the impact of generative AI tools on teaching and learning.

4 RECOMMENDATIONS

Within higher education, AI-focused curricula are only just emerging, placing more responsibility on L&D teams to engage new and current employees with opportunities to build trust, rethink bottom up approaches, and center AI-Human partnerships.

4.1 Building-trust

As the adoption of GenAI increases, so too does an awareness of the dark side of these tools. Concerns about algorithmic biases, factual errors, negative environmental impact, and fear of job replacement can prevent adaptation across an organization. A 2024 report by the Adecco Group found that 40% of workers are worried about long term job security [58]. Companies must address employees' fears that AI will advantage certain worker groups and replace others. L&D teams are essential to building the trust that is necessary for companies to guide their workforce to engage AI tools strategically.

Particular when the investment in AI tools is substantial, it is not enough to make tools available and hope for productive adoption. "The value of AI comes from rewiring how companies are run" [59], and L&D teams can help organizations develop AI strategies and adoption principles that are grounded in trust-building.

To begin, it can be helpful for L&D teams to consider trust-building in two areas for company-wide deployment: 1) communicating/demonstrating a commitment to reskilling workers and 2) demystifying the technology. Developing a framework for AI adoption that centers trust through clear communication, bounded experimentation, and a commitment to reengineer work to partner with GenAI is key. This framework can build trust by repositioning investment in GenAI technology as an investment in employee capacity and future-readiness. In addition to communicating a responsibility to reskill employees, providing ongoing dialogue to develop confidence in the quality and trustworthiness of AI-produced work is equally important.

Only 46% of workers reported feeling confident in their leadership's AI skills and awareness of AI risks [58]. Emphasizing human supervision and transparent decision criteria that employees can review as GenAI tools evolve is essential for trust-building. L&D teams can develop "awareness training" opportunities to address the legal, ethical, and responsibility concerns of employees at every level of an organization. "Achieving this state of trusted AI takes not only a shift in mindset toward more purposeful AI design and governance, but also specific tactics designed to build that trust" [60].

4.2 Bottom-up approach

Employees' training and development in the U.S. has traditionally emphasized standardization and structured offerings. GenAI adoption, however, is disrupting this model. Recent reports show that employees are increasingly experimenting with these tools [61], some openly with employers' approval, and some discretely when company policies forbid or restrict their use. A Gallup poll found that since 2023, the percentage of U.S. employees using GenAI has nearly doubled; yet "only 22% say their organization has communicated a clear plan or strategy" for AI use [62]. Other reports indicate that GenAI adoption is spreading largely through individual initiative, peer learning, and informal practice.

A report from MIT Sloan [63], based on 50 cross-sectional interviews with a wide range of organizational stakeholders, finds that GenAI is particularly suited to "bottom-up development and use based on workforce experimentation." This is in contrast to earlier training models which were typically offered by the leadership or mandated via policy with little or no involvement or input from employees. Due to their widespread availability, many GenAI tools are accessible free of charge, so employees can experiment at small scales and identify practical ways to integrate the tools into their daily work. This has led to a "bottom-up" approach to GenAI integration [64]. Organizations promoting the use of these tools often create "a robust feedback mechanism" for sharing "successful use cases and insights from local groups to be shared centrally" [64]. This approach differs significantly from older training models and practices which offered standardized content, completion rates, and centralized approval.

Some organizations are beginning to formalize these efforts. For instance, *Indeed* has been "giving people explicit permission to experiment" with GenAI tools and share successes and failures for the purpose of "collective learning" [65]. Using this strategy, *Indeed* has been measuring actual use and impact, not just training completion.

This represents a fundamental shift in how employee training has historically been developed. Instead of relying on structured programs designed by experts, GenAI adoption is largely driven by employees themselves through experimentation,

agility, and peer feedback. This bottom-up approach has the potential to create more sustainable change: tools are more likely to be used when they directly solve work-related problems and are integrated into workflows by those who perform the tasks. It can also reduce resistance and fear, since employees closest to the work understand where the real opportunities and risks lie. However, such an approach is not without challenges and requires leadership support, infrastructure, and clear guardrails to ensure small-scale improvements and innovation can be scaled responsibly. As GenAI tools become increasingly integrated into workflows, organizations that embrace the “bottom-up” approach are likely to see more effective, trusted, and sustainable adoption by their employees.

4.3 A Human-AI partnership

“Human-centered AI is about augmenting human intelligence, not replacing it.”

Dr. Fei Fei Li, Sequoia Capital Professor, Stanford University, “the godmother of AI” Human-centered AI (HCAI) focuses on enhancing human capabilities through “Human+AI” collaboration and co-creation [66].

HCAI L&D strategies underscore human needs, values, and well-being and empower workers to use AI technologies in ways that build on their knowledge and experiences. The steps below outline a path for achieving an optimal human-AI partnership:

Value employee work and emphasize foundational domain knowledge.

AI tools are able to efficiently recognize patterns, process large amounts of data, and generate human-like text. However, these tools lack genuine understanding, critical judgment, emotional intelligence, and the ability to verify factual accuracy. They also lack real-world contextual awareness and tacit knowledge. Recognizing these shortcomings while acknowledging the centrality of employee experience and voice are key to adoption and effective use of AI applications. To facilitate an optimal division of labor between humans and AI, employees should be given opportunities to describe their day-to-day work, detail how they go about achieving their goals, and systematically study the domain knowledge that drives their decision-making and undergirds their field of work. Staff should also be encouraged to discuss pain points and areas of work in need of improvement. Through this process of sharing, documentation, and study, employees and L&D teams can mutually identify aspects of the work that may be better suited for AI to conduct. This can also open new areas of growth for employees as they are able to focus more of their time on decision-making and continuous improvement. Additionally, when L&D units prioritize and leverage employee expertise, they ensure that AI is designed as a force multiplier rather than a replacement.

Develop concrete exemplars for staff. In order to move HCAI approaches from theory to practice, it is important for L&D units to create models for employees to experience first hand. When employees see how AI tools can enhance human performance, ambiguity, skepticism, and other barriers to adoption are lowered. These exemplars show in detail how employees can use AI tools in ways that leverage employee experience, knowledge, and agency. With real examples, employees can also see elements of effective HCAI: clear guardrails, transparent data use, consent flows, accessible interfaces, and measurable benefits for staff who use the system. Equally important, these models reveal risks such as hallucinations, automation bias, privacy concerns, and stereotyping, prompting organizations to proactively address and mitigate them. For L&D units, these exemplars also underscore the importance

of organization-wide AI literacy by demonstrating alignment of incentives and return on investment.

Co-design of tools and implementation plans. L&D units should engage employees in the process of defining requirements, describing use cases, and articulating success metrics because they understand workflows, constraints, and goals. This not only ensures AI tools solve real organizational problems but creates a sense of ownership among employees. Co-design also builds trust and transparency and strengthens usability, accessibility, and safety by embedding human factors into the design from the start. When employees participate in shaping the end user experience and the roll out protocols, they can see how decisions are made and push for policies, guidelines, and guardrails that enhance HCAI. Additionally, it gives voice to all affected groups, not just those in leadership roles. This approach has the added benefit of accelerating adoption because employees are more likely to embrace tools they helped create and can champion them among peers. Ultimately, co-design aligns AI with human-centered outcomes (e.g., better decisions, safer operations, meaningful work).

Evaluate and iterate. It is important for L&D units to take steps to systematize the ongoing examination of AI tools and their use. Through continuous critique of these technologies, organizations reinforce that humans are at the core of how AI tools add value. The interrogation of AI systems also strengthens accountability by clarifying human-AI handoffs, escalation paths, and performance metrics that include accuracy, explainability, and inclusion. It also facilitates iteration of these tools by empowering workers to make recommendations, raise concerns/risks, and drive continuous improvement cycles. Furthermore, by embedding ethical review and stakeholder feedback into everyday practice, employees ensure AI systems support organizational values and compliance requirements. This workplace culture drives innovation grounded in employees' lived experiences while encouraging experiments that advance organizational mission. These activities can also help AI tools be more accessible and effective. By iterating together, organizations can adapt AI to changing processes and regulations thereby avoiding rigid systems that quickly become obsolete.

5 CONCLUSION

Findings from our faculty and student survey offer transferable insights from the higher education context that can inform corporate GenAI adoption strategies and the critical work of L&D teams charged with supporting those strategic shifts. That is, faculty and students in Fall 2024 both reported a variety of uses across school, personal, and work domains; raised specific and thoughtful concerns; and asked for more guidance on ethical and practical uses of these tools. Particularly because curricular guidance within academic curricula is only just emerging, L&D teams are uniquely positioned to engage new and existing employees with opportunities to build trust, rethink bottom up approaches, and center AI-Human partnerships. In these dynamic ways, we see our recommendation as adding to the training and development paradigm shift that moves L&D units towards a broader vision of capability building with equal emphasis on continuous learning and organizational ecosystems.

To achieve the AI adoption outcomes, employees need to trust that they will be empowered to consider GenAI as a tool to work with, rather than a replacement to automate their current activities. Repositioning investment in GenAI technology as

an investment in employee capacity and future-readiness, L&D teams are essential to building the trust that is necessary for companies to guide their workforce to engage AI tools strategically. As an essential first step, we believe it is necessary to understand what questions and concerns employees have about AI in the workplace, using those insights to identify what issues and challenges should be addressed through developing a comprehensive strategy to redesign, reskill, and retain talent within an organization. This ensures alignment to the nuances of an organization and industry, and mirrors our own practice of supporting faculty and students on their own AI adaptation trajectories. It also has the potential to surface new and exciting use-cases and productivity gains that would not otherwise appear from more traditional top-down methods.

As noted above, it can be helpful for L&D teams to consider trust-building in two areas for company-wide deployment: 1) communicating/demonstrating a commitment to reskilling workers and 2) demystifying the technology. We believe employees, like the faculty and students in our survey, mostly want to know how to use these tools to do better work and future-proof their career paths. Too often, however, fear of replacement and concerns over ethics and standards prevents adoption on a large scale, even when these tools are being used in unsupported ways in other domains, again like we saw in our faculty and student survey.

In addition to communicating a responsibility to reskill employees, providing ongoing dialogue to develop confidence in the quality and trustworthiness of AI-produced work is equally important. Awareness training and community of practice opportunities can be mostly driven by employees and based on individual and small groups experimentation. As GenAI tools become increasingly integrated into workflows, organizations that embrace the bottom-up approach are likely to see more effective, trusted, and sustainable adoption by their employees. These are the companies that will succeed in developing Human-centered AI collaboration, co-creation, and innovation with L&D teams that empower employees to leverage their experiences and knowledge while also opening new areas of growth.

6 DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this work the author(s) used ChatGPT 5 and NotebookLM in order to source resources (e.g., peer-reviewed research, non-academic articles) and copy edit the manuscript. After using these tools, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

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