Mind The (AI Skills) Gap -

Who will train us for the GenAI Future

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We are facing a generative artificial intelligence (GenAI) adoption paradox. With the release of ChatGPT 3.5 only a bit more than two years ago in November 2022, it took many in training and education by surprise. In 2024, workplace adoption outpaces employee preparedness in the Gen AI era, while it is unclear who will do the training.

The integration of GenAI into workplace operations has reached unprecedented levels. While 82% of organizations now deploy GenAI tools, only 33% of employees received related training in 2024 (Germaine, 2024). This 49 %-point gap reflects systemic failures in aligning technological adoption with human capital development. The challenges obstructing progress are not merely technical but stem from interconnected organizational, demographic, pedagogical, and policy failures that demand urgent intervention. Creating a skills chasm that threatens workforce stability, innovation capacity, and organizational competitiveness (Case, 2024). Furthermore, even though only 36% of employers conduct GenAI training, 66% of global leaders said they would not hire someone without AI skills (Microsoft, 2024).

This article examines the impact of this GenAI training gap over the next five years. It analyses the multidimensional nature of this training gap, examining its socio-technical drivers, demographic disparities, and potential solutions to be implemented by 2030.

GenAI Transformative Impacts on Workplace Efficiency

Generative AI has revolutionised operational paradigms across sectors, demonstrating measurable productivity gains. Salesforce reports that 80% of business leaders anticipate GenAI-driven revenue growth through enhanced customer insights and process optimization. The technology's capacity for rapid data analysis, content generation, and predictive modelling has made it indispensable in fields ranging from healthcare diagnostics to financial forecasting (Chuang, Shahhosseini, Javaid and Wang, 2024).

However, this efficiency comes with workforce implications. MIT CISR research reveals that 38% of employees require fundamental retraining within three years to remain relevant in AI-augmented roles (Van der Meulen, Tona, Leidner, 2024). The automation of routine tasks through tools like AI-powered CRM systems and automated report generators has shifted competency requirements toward hybrid technical-interpretive skills. Those who are not trained are likely to lose their jobs or not be able to achieve future work.

The Emergence of New AI-Centric Roles

Even though there are many predicted job losses with the introduction of GenAI, there will be many new jobs created. Labor market analyses identify 113,300 data scientist positions in the U.S. alone, with 11% projected growth through 2031. Emerging roles such as AI ethicists, prompt engineers, and machine learning operations (MLOps) specialists demand competencies that blend technical AI literacy with domain-specific expertise (Hu and Downie, 2024). For instance, mechatronics technicians now require proficiency in AI-driven predictive maintenance systems, while marketing professionals must master GenAI content optimization tools (Chuang, Shahhosseini, Javaid and Wang, 2024).

This evolution creates a dual challenge: upskilling existing workers while preparing new entrants. IBM projects a 50% AI talent gap by 2025, with demand particularly acute in industries undergoing rapid digital transformation like healthcare and advanced manufacturing (Van der Meulen, Tona, Leidner, 2024). Just as there were no job advertisements in social media in 1999, with the new technologies of Web 2.0 and smartphones, new positions in social media and digital media have grown dramatically. This will also be the case with GenAI jobs. As with most digital technologies, the speed of change and impact of Gen AI is growing exponentially across all aspects of society. Therefore, the longer the GenAI skills training gap exists, the wider it will be, unless comprehensively addressed.

Gaps in Training Provision

Cross-industry data reveals systemic underinvestment in AI upskilling. While 75-80% of organizations have adopted AI technologies, only 33% provided related training in 2024 ([Case, 2024](#))

Metric	Adoption Rate	Training Rate	Gap
GenAI Tool Implementation	68% [(Srivistava)](#)	36%[(Srivistava)](#)	-32 points
AI Policy Awareness	94% ([Case](#))	60% ([Case](#))	-34 points
Leadership Confidence	82%[(Clarkson)](#)	54% ([Clarkson](#))	-28 points

Demographic Divides in AI Competency Development

The training gap exhibits pronounced demographic dimensions, reinforcing previous digital skills gaps and further disadvantaging certain groups. The gender disparity has transferred to GenAI with 38% of female employees reporting equal access to AI training compared to 47% of male counterparts. Women also express lower confidence in training effectiveness (25% vs 35%), potentially exacerbating existing gender gaps in tech leadership ([Rathnayake, Gunawardana, 2024](#)).

There also exists age-related barriers. While 50% of workers over 55 express interest in AI training, only 13% receive employer-supported opportunities. Legacy systems and interface designs often disadvantage older workers, with 72% reporting difficulties adapting to AI tools without targeted support ([Chuang, Shahhosseini, Javaid and Wang, 2024](#)).

These demographic divisions are further exacerbated by the inconsistencies in the industry sector adoption of GenAI. The male-dominated industries of technology and finance sectors provide 58% of AI training programs. This compares to 22% in the female comminated industries of healthcare and 18% in education ([Van der Meulen, Tona, Leidner, 2024](#)). This disparity risks creating GenAI "deserts" in critical human-focused industries and public sectors. Of concern is the lack of training of the educators who should be preparing students for future careers.

There is a high level of anxiety about the future of work and impact of GenAI. A Salesforce survey found that 43% of employees fear replacement by AI-proficient colleagues, rising to 52% among Gen Z workers. This anxiety fuels resistance: 47% of learning and development professionals report staff reluctance to adopt AI tools perceived as threatening job security. The paradox is striking - while 94% of employees want AI skills, 61% hesitate to engage with training programs they associate with displacement risks ([Maggioncaldi, 2024](#)). There are personal psychological fears, risk aversion, and change resistance to be overcome as antecedents to successful GenAI training.

Organizational Inertia and Resource Constraints

A 2024 Australian industry report revealed 43% of businesses deprioritize AI training due to competing operational demands, while 38% cite budget limitations as primary constraints (Williams, 2024) This resource fragmentation creates cascading effects: 72% of employees lack dedicated time for upskilling, and 58% of L&D departments report insufficient funding for AI programs (Williams, 2024). The consequence is a "training triage" where organizations prioritize immediate productivity over long-term competency building.

Structural inertia compounds these issues. MIT Sloan research demonstrates that 66% of C-suite leaders underestimate frontline AI adoption challenges (Favreau, 2024), while 54% of companies lack centralized AI governance structures (Germaine, 2024). This disconnect manifests in duplicated efforts - one multinational reported 17 separate AI training initiatives across divisions with 43% content overlap[4]. Without coordinated strategies, organizations waste resources reinventing curricula rather than scaling effective programs.

Despite recognized needs, multiple barriers impede training initiatives. A 2024 Randstad study found that only 28% of organizations have dedicated AI adoption budgets, with most relying on fragmented departmental initiatives (Case, 2024). This fragmentation leads to duplicative efforts - one multinational reported 17 separate AI training programs across divisions with 43% content overlap (Van der Meulen, Tona, Leidner, 2024).

The absence of AI-focused leadership roles exacerbates implementation chaos. Only 22% of HR departments conduct algorithmic bias audits, and 40% of organizations lack clear AI use policies. As Juan Betancourt, CEO of Humantelligence, observes: "There is no Chief AI Officer role bridging the gap between IT implementation and workforce development" (Germaine, 2024). This governance vacuum leaves training initiatives siloed between incompatible departmental budgets and objectives.

Executive priorities often misalign with workforce needs. While 82% of C-suite leaders express confidence in AI readiness, only 54% of middle managers share this view[4]. This cognitive dissonance manifests in underinvestment - 72% of companies allocate less than 5% of IT budgets to AI training despite 80% anticipating revenue growth from AI adoption (Maggioncaldi, 2024).

Policy, Ethics and Governance Gaps

To facilitate the closing of the GenAI training gaps, an international approach is required. This has proven difficult as the three main centres of GenAI research and development (USA, EU, and China) have taken divergent approaches to GenAI. Whereas the EU has taken a cautious approach, with ethical guard rails legislated, China and the USA have taken a more laissez-faire approach. There are no international standards governing AI literacy certification, creating credential chaos. The EU's Digital Education Action Plan mandates 20 annual AI training hours but lacks enforcement mechanisms, while 67% of employees report uncertainty about ethical guidelines. In the U.S., 40% of organizations operate without clear AI policies, exposing workers to unregulated tool deployment (Case, 2024).

At the industry level, there are also gaps as regulatory frameworks lag behind technological realities. This is evident as 40% of organizations lack clear AI use policies, 22% of HR

departments conduct algorithmic bias audits and 67% of employees report uncertainty about AI ethics guidelines ([Rathnayake, Gunawardana, 2024](#)). The absence of standardized AI proficiency certifications further complicates workforce development. While Microsoft and Google offer vendor-specific credentials, no universal competency framework exists - a gap highlighted by 78% of hiring managers ([Hu and Downie, 2024](#)). The sociotechnical systems framework emphasizes balancing technological capabilities with human-centric design principles. Good practice is to implement mandatory ethics training that precedes technical AI certification, with continuous monitoring of tool impacts on work quality.

Higher Education Challenges to be Addressed

In Australia, there is a recognition of the role to be played by higher education in the AI skills acquisition and research into the ethical and societal impacts of GenAI. The Tertiary Education Quality Standards Agency ([TEQSA, 2024](#)) has gathered responses from Australian universities on their approach to GenAI, addressing issues of academic integrity, authentic assessment, and limited responses on GenAI skills acquisition across a range of disciplines. A recent study by [MacDonald et al (2024)](#), of 3,421 academic and professional staff from 17 Australian universities found that 71% of responses had used GenAI for their university work. The highest cohort use group was senior staff at 81%, with academic staff 75%, professional staff 69% and sessional staff 62%. This was not uniform across all academic disciplines, with IT, engineering and business departments the highest users of GenAI, with agriculture and environmental studies the lowest. The majority of respondents were self-taught, with few programs for staff training. From 2025, some universities have developed policies that all subjects must have at least one authentic assessment incorporating GenAI. However, the skills acquisition approach by higher education is very spasmodic. There is a clear opportunity for a comprehensive and integrated approach across higher education addressing the GenAI skills gap for all staff and students.

Curriculum Development Challenges

The breakneck pace of AI innovation renders traditional curricula obsolete within months. As of 2024, 78% of hiring managers report no universal AI competency framework exists, forcing organizations to rely on vendor-specific certifications from Microsoft or Google that lack transferability. The Oxford Internet Institute identifies a critical need for dynamic skills mapping through real-time labor market analysis, yet only 18% of companies use AI-powered competency tracking systems ([Pallardy, 2024](#)).

Pedagogical Inadequacies

Current training models fail adult learners: 61% of employees resist sharing performance data needed for personalized learning paths, while 54% of AI tutor users show reduced independent problem-solving capacity ([Rojas, 2025](#)). The MIT Sloan study warns that junior employees - often tasked with training seniors - lack expertise in AI risk management, creating dangerous knowledge gaps. Traditional lecture-based formats prove particularly

ineffective, with only 22% of learners retaining information compared to 73% using simulation environments (Favreau, 2024).

GenAI Opportunities: AI-Driven Training Personalization

With strategic planning and implementation over the next five years, there are opportunities to leverage GenAI for better training outcomes in GenAI and other required skills acquisition. Forward-thinking organizations now deploy GenAI to address the very skills gaps it creates. Wipro's implementation of AI-powered learning pathways reduced time-to-competency by 40% through adaptive content delivery based on real-time performance data. These systems analyse individual learning patterns, knowledge gaps, and career trajectories to generate customized curricula - a process demonstrated by Google's AI coaching tools that increased engineering team productivity by 18% (Mattina, 2024)

Other key innovations in GenAI training include;

- Dynamic content generation: Anthropic's Claude AI automates 60% of training material creation while maintaining quality benchmarks.

- Competency mapping: Johnson & Johnson's skills inference platform uses natural language processing to analyse 92 workforce dimensions, identifying latent skills for AI role transitions.

- Simulation environments: Salesforce's AI sandboxes allow safe experimentation with GenAI tools, reducing implementation errors by 73% (Van der Meulen, Tona, Leidner, 2024).

Mid-Term Strategies for Closing the Gap

The GenAI skills and training gap is current and real. As outlined above, this gap will only continue or widen without a clear three to five-year strategy and implementation plan. This requires a high level of planning and collaboration across various institutions and levels of our society. Looking internationally, there are a range of positive models of GenAI that may be replicated.

At the government level, there are examples of policy incentives that encourage GenAI training to industry. These include Canada's AI Training Tax Credit, which offers 35% reimbursement for small and medium enterprises in AI upskilling programs (Hu and Downie, 2024). The EU has also taken steps to assist GenAI training through the EU's Digital Education Action Plan, which mandates for 20 annual AI training hours for all employees (Srivastava, 2024).

There is a recognition at a national level that some sectors and types of jobs will be lost due to automation, and that workforce transition assistance is required. This is designed to support organisations and individual employees to develop and transfer skills to new roles. Denmark's "AI Transition Allowance" provides 6 months' salary for workers displaced by automation, while the U.S. Department of Labor's AI Career Pathways initiative maps 450 role transition routes and provides support for those impacted by automation (Chuang, Shahhosseini, Javaid and Wang, 2024).

At the institutional level, GenAI skills training includes public-private collaboration for education partnerships. An example is the Singapore government AI Apprenticeship Program, which partners universities with 150 firms to provide applied experiential learning. There is also the German Dual Vocational Training System that integrates AI modules into 327 vocational standards, guiding GenAI skills training (Srivastava, 2024).

Toward Symbiotic Human-AI Workforce Ecosystems

The generative AI training gap represents both a crisis and an opportunity. While current disparities risk exacerbating inequality and stifling innovation, the tools to address these challenges lie within the technology. Organisations adopting holistic strategies that combine AI-driven personalization with human-centered design principles demonstrate measurable success.

Societal institutions must play a major role: regulators, government service providers, primary tertiary and higher education institutions. Policymakers face urgent demands to create standardized frameworks for AI literacy assessment and workforce transition support. As the boundary between human and artificial intelligence continues to blur, our capacity to foster symbiotic human-AI collaboration will determine whether this technological revolution elevates workforce potential or deepens existing divides. The solution lies not in slowing innovation, but in accelerating our commitment to equitable, continuous learning ecosystems that empower workers to co-evolve with the tools reshaping their world. Decisions made and implemented by educators over the next five years are crucial for the future success of integrating GenAI.

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