wgu labs

The Missing Rung

Rebuilding Career Ladders in the Age of AI

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Introduction

As AI eliminates traditional entry-level roles, the first rung on the career ladder is disappearing. Without this foundational training ground, how will companies build a skilled workforce that has workplace acumen, domain expertise, and leadership skills?

To dig into this challenge and ideate solutions, WGU Labs convened a group of workforce, higher education, and industry leaders at the JFF 2025 Horizons Summit. The group explored how to create more dynamic, affordable, and aligned learning systems that meet the pace of change and support a more resilient, equitable future of education and work.

Participants shared their unique perspectives and insights, which we compiled into **five predictions about building career pathways in the age of AI:**

1. Social capital will be more important than ever
2. Experience gaps will be the new skills gaps
3. Experiential learning will be the new entry-level work
4. The workforce gender divide could widen without intervention
5. Partnerships must expand to meet the demands of the future of work

We then asked participants to brainstorm ways we could use AI to address the challenges facing entry-level workers. We compiled their ideas into **five ways AI could help build a stronger bottom rung**:

1. Better skills identification
2. Faster domain-specific and industry knowledge
3. Virtual experiential learning for durable skills
4. Personalized learning experiences based on specific jobs and industries
5. Improved career navigation

The bottom rung of the career ladder is disappearing

AI has already begun to dramatically reshape the job market. Software developers were the first to go. By the end of 2023, about a year after the release of ChatGPT, job postings for software developers on Indeed had **dropped by 65%**.

And that was just the beginning.

Now, students like Chris Gropp, who triple majored in computer science, math, and computational science, are sending out hundreds of cover letters for jobs to no avail. In an **interview with The Atlantic**, Gropp said, "I found myself a month or two ago considering, 'Do I just take a break from this thing that I've been training for for most of my life and go be an apprentice electrician?'"

This tracks with **LinkedIn's Workforce Confidence Index**, a measure of job and career confidence across nearly 500,000 professionals, which has hit new lows in recent months, especially among members of Generation Z.

While other factors, including an **economic slowdown** and the tech sector's **comedown from its pandemic-era spending spree**, have also played a role in recent layoffs and sluggish hiring, a **2025 World Economic Forum survey** suggests that AI is playing a role in job displacement. The survey found that **40% of employers anticipate reducing their workforce** where AI can automate tasks.

But some workers are more at risk than others. Specifically, entry-level roles are more susceptible to automation because they often involve routine, low-risk tasks that can be easily offloaded to AI. Tech leaders have different perspectives on the fate of entry-level jobs, with some, like **Sam Altman**, believing that younger, less experienced workers who learn AI tools may even have an advantage in the future of work. Today, however, the data seems to be turning in another direction.

In an **op-ed for the New York Times**, Aneesh Raman, chief economic opportunity officer at LinkedIn, wrote, ***"There are growing signs that artificial intelligence poses a real threat to a substantial number of the jobs that normally serve as the first step for each new generation of young workers."***

A LinkedIn survey of over 3,000 executives at the vice president level or higher found that **63% agreed that AI will eventually take on some of the mundane tasks** currently allocated to their entry-level employees.

Researchers at SignalFire, a VC firm that tracks the job movements of millions of employees and companies on LinkedIn, found that Big Tech companies **reduced the hiring of new graduates by 25%** in 2024 compared to 2023. At the same time, Big Tech companies increased hiring by 27% for professionals with two to five years of experience. These findings are echoed across unemployment data: The **unemployment rate for college grads has risen 30%** since September 2022, compared to about 18% for all workers.

Dario Amodei, CEO of Anthropic, told Axios in an interview that **AI could wipe out half of all entry-level white-collar jobs**, causing unemployment to jump 10–20% in the next one to five years.

The layoffs have already begun, indicating that the challenging job market software engineers have been experiencing was the proverbial canary in the coal mine. Microsoft announced plans to **lay off 9,000 workers** (about 4% of the company) in July after already **laying off 6,000 workers** in May (about 3% of the company). CrowdStrike **cut 500 jobs** (about 5% of its workforce), as a result of "a market and technology inflection point, with AI reshaping every industry."

AI could wipe out **half** *of all entry-level white-collar jobs.*

Other corporations, including **Klarna, UPS, Duolingo, Intuit, Cisco**, **IKEA**, **Amazon**, and **Activision Blizzard**, have all begun replacing laid-off workers with AI and automation.

Warning calls from senior technology and workforce executives alongside concrete labor market data points have made it clear: AI is eroding the bottom rung of the career ladder.

This trend was also made clear during our recent focus group at the Jobs for the Future (JFF) annual conference. One participant, George Vinton, CEO at Common Group, shared that he's already starting to see these shifts impact the way his organization hires. Common Group, a social enterprise operating at the intersection of workforce development, education, and employer talent practices, would typically hire a couple of entry-level full-time employees every year, but ***"AI is changing the calculus for us,"*** Vinton said. ***Now, they're thinking about increasing mid-level team members' capacity instead of hiring net-new talent.*** But ***"that leads to the question of how do we refill mid-level talent ranks?"***

This all culminates in a concerning catch-22: Companies are replacing entry-level roles with AI, but still need experienced workers to handle more complex tasks. For generations, entry-level jobs have served as foundational on-the-job training for those at the beginning of their professional journeys. If we eliminate these roles, how will new workers gain the skills and experience needed to work their way up the ladder? And how will organizations build a talent pipeline of experienced workers if they don't give entry-level workers any experience?

5 predictions about building career pathways in the age of AI

These five predictions emerged from our discussions with workforce, higher education, and industry leaders, revealing critical challenges that will reshape how we think about career development. Understanding these trends is essential for building more resilient pathways into the workforce.

1 Social capital will be more important than ever

Degrees and skills alone aren't enough — professional connections play a critical role in career advancement. According to LinkedIn data shared with WGU Labs, LinkedIn members are 4x more likely to get hired at companies where they have connections. **LinkedIn research** also found that individuals who have diverse networks outside of their "close-knit community" experience greater job mobility.

Unfortunately, those furthest from opportunity, including first-generation college students, career changers, and low-wage workers, often have more limited social capital. Spencer Sherman, Principal Consultant at Education First, told our focus group that he was especially worried about how individuals with limited social capital will navigate an increasingly competitive job market.

With fewer entry-level jobs and more competition for the jobs that are available, who you know will matter even more in securing a new job, reasserting socioeconomic orders in ways we have been trying to disrupt for some time. This shift could place under-resourced communities, who often lack robust professional networks, in a more precarious position and widen equity divides in the labor market.

In his **New York Times op-ed**, LinkedIn's Chief Economic Opportunity Officer Aneesh Raman wrote, ***"Also concerning is the potential for widening inequality in the job market. If entry-level roles evaporate, those lacking elite networks or privileged backgrounds will face even steeper barriers to finding their footing in the workplace."***

The reality is that equity never happens by accident. A number of higher education leaders interviewed for a **Christensen Institute report on career navigation and guidance in the age of AI** said they envision a future where advisors offload their transactional support to AI and become brokers for students instead, helping them foster valuable connections with teachers, counselors, and community members.

Likewise, individuals, especially those from under-resourced communities, will need access to intermediaries and opportunities for networking and mentorship to succeed in tomorrow's job market. However, participants in our focus group were markedly skeptical about employers stepping up to the table. But this is, they said, an opportunity for philanthropy to address.

2 Experience gaps will be the new skills gaps

The prevailing discourse around talent shortages has long been dominated by the concept of the "skills gap." Employers have continually expressed that too many workers, especially recent college graduates, are showing up in the workplace without the necessary skills to do the work required of them.

But in a world where AI enables employees to uplevel their skills or offload their work at scale, will we even have a skills gap anymore?

Our focus group thinks the skills gap could evolve. Participant Efrem Bycer, Senior Lead Manager, Public Policy and Economic Graph at LinkedIn, said, ***"A greater share of the skills early career professionals rely on are AI replicable, which could contribute to more potential displacement at the bottom rung of the career ladder at a moment when experience is increasingly valuable. Soon, the skills gap may give way to the experience gap."***

What this means, according to Bycer, is that soon the most critical deficit in the knowledge workforce won't be the absence of discrete skills, but the lack of applied expertise — the nuanced combination of domain knowledge, functional knowledge, and professional judgment that is forged only through practical application and time under pressure. This expertise is not easily developed through traditional training but rather time on the job, and the typical "grunt work" of entry-level jobs has historically been a key contributor. Over time, this becomes the wisdom that enables effective decision-making, innovation, and leadership, and it cannot be acquired through traditional training alone.

For years now, recent college graduates have griped about so-called "entry-level" roles requiring two to five years of experience. Will AI's impact mean that the entry-level jobs of the near future will require five to seven years of experience? Seven to 10?

Addressing this gap through training and development only addresses one part of the equation. A person can possess a skill, such as knowing a programming language or a financial modeling technique, without having the experience to apply it effectively under real-world conditions. This is the essence of the experience gap: a situation where candidates, even if technically skilled, lack the hands-on, practical application of those skills in scenarios relevant to the role. While skills are about specific proficiencies, experience is about the practical wisdom gained from applying those proficiencies, making mistakes, and adapting to complex, often ambiguous, situations.

This scenario raises two critical questions:

1. If entry-level work is replaced by AI, how will new workers develop the practical, hands-on experience needed for the jobs that are available?
2. How will employers build up a pipeline of new employees to fill future roles that require experience-based wisdom?

Herein lies the challenge. However, AI — the source of this dilemma — could also be part of the solution, a topic we'll explore in a later section of this paper.

3 Experiential learning will be the new entry-level work

As a result of the shift toward an experience gap, we urgently need to figure out how to provide new workers with low-stakes experiential learning experiences where they can make mistakes and build the type of foundational knowledge critical to a strong talent pipeline.

Scaling apprenticeships seems like a logical solution, but what does the future of the apprenticeship look like as the nature of work changes? Regardless of how the apprenticeship of the future is structured, we'll still need to figure out how to support these models. As Brookings Institution Fellow **Molly Kinder put it**, ***"We invest in tech, not people. Europe outspends the U.S. on retraining programs, apprenticeships, and other active labor market measures that help displaced workers adapt. Bluntly, America's workforce development system is not fit for purpose for the AI challenge."***

America's workforce development system is not fit ... for the AI challenge.

So what does a more robust experiential learning model look like in the U.S.? In higher education, it could be a **shift toward more authentic assessments** that involve real-world practice, role play, scenario-based tasks, and projects that showcase relevant skills. These scenarios could help learners learn durable skills like communication, empathy, ethical decision-making, and critical thinking, which are harder to acquire in traditional classroom settings, as well as develop domain knowledge, functional knowledge, and professional judgment through practical application.

While businesses may seem like a likely source for these apprenticeships, it's worth noting that businesses haven't historically led the way in establishing apprenticeships. Instead, unions, educational institutions, and state governments via workforce development have spearheaded these efforts. Mapping out their role in meeting this new demand will be critical.

But businesses could establish virtual internship programs that provide low-stakes experiential learning opportunities while filling their talent pipelines. ***"Building out internship programs has historically been very labor-intensive,"*** said Abby Marquand, Managing Partner at New Profit, in our focus group. Instead of using AI to replace interns, she said companies could use it to build out internship programs that provide necessary experience, without the need for heavy-handed involvement from senior employees.

In a recent **article for Harvard Business Review**, Joseph Fuller, Matt Sigelman, and Michael Fenlon, leaders from the Burning Glass Institute, Project on Managing the Future of Work at Harvard Business School, and the Project on Workforce at Harvard, wrote that employers will soon find themselves in a position where they need to adopt new training models that accelerate learning for existing employees and enable new ones to ascend the learning curve.

"To avoid delaying the implementation of innovative technologies while they wait for third parties to develop training programs, they will be likely to favor customized, internally-developed programs that are based heavily on firm- and industry-specific knowledge. In a workplace with few entry-level opportunities to learn on the job, simulations are likely to become important mechanisms for enabling workers to gain critical experience in ways that require far less time in the seat," Fuller, Sigelman, and Fenlon wrote.

Here, too, AI can play a role in accelerating the development of highly customized and industry-specific learning programs for organizations.

4 The workforce gender divide could widen without intervention

When it comes to AI-related job displacement, it is likely that primarily male-dominated sectors like technology and business will see the biggest impact, whereas female-dominated care sectors, such as teaching and healthcare, may be less vulnerable in the immediate term. While this may sound like a potential boon for women, it should be noted that teaching and nursing are some of the lowest-paying jobs that still require a credential. Likewise, a Brookings Institution analysis, using OpenAI data, found that the **workers most vulnerable to AI disruption are predominantly women** in the 19 million "middle-skill" office support and administrative jobs.

In our own **survey of over 4,500 WGU students**, we found that men reported higher awareness of AI and consistently expressed higher confidence with the tools than women. Nearly three-quarters (74%) of men agreed they were confident in their ability to use AI tools effectively, compared to just 62% of women — a 12 percentage point gap. Similarly, men were more likely than women to say they understood how AI tools work (73% vs. 60%), knew how to write effective prompts (64% vs. 50%), and could evaluate AI-generated content (74% vs. 59%).

Bias is already embedded in many AI systems, **reinforcing gender inequalities** in areas ranging from hiring to financial services. In the rapidly growing AI workforce itself, **men hold 71% of all AI-related roles globally**, highlighting a significant talent gap. Recent investigations even show that AI-powered career coaching tools can provide different — and less ambitious — career advice to **users perceived as female**. Gender gaps in AI confidence, exposure, and usage could exacerbate **broader disparities in career opportunities**, particularly in a labor market increasingly shaped by AI-driven technologies.

Compounding the issue is a **report from the Government Accountability Office (GAO)**, which found that demographic disparities across U.S. apprenticeship programs remain stark: 84% of apprentices in FY 2024 were men, and 74% were white. While construction trades continue to dominate apprenticeship programs, the report found that new-collar roles, like computer-related roles and nursing assistants, are gaining ground. As a result, women's participation is rising, but progress is slow. The rise of low-wage fields like nursing assistants in apprenticeship programs also raises concerns about focusing too broadly on expansion without addressing job quality.

Taken together, the gender divide in the workforce could deepen because women dominate low-paying middle-skills jobs, are less confident with AI, are subject to embedded biases within AI tools, are underrepresented in the AI workforce, and have less access to experiential-learning opportunities like apprenticeships.

5 Partnerships must expand to meet the demands of the future of work

We, as well as many others, have already written about **the broken pathway between learning and earning** and the need for stronger partnerships between higher education and the workforce. Despite good intentions and many local and national initiatives, not much has changed on a broader scale.

Focus group participant Isaac Agbeshie-Noye, Widening Pathways to Work Program Director at SHRM Foundation, said that when it comes

to partnerships, there's ***"not enough cross-talk. Everyone thinks they're communicating, but they're just missing each other."*** He went on to describe how, in our current environment, ***"the learner has to do all of the work. They need to figure out what to study, find a job, leverage their social capital, etc. We can't just imagine the skills and pathways needed. We need to actually create them."***

Creating these pathways will require finding common ground and centering workers and learners in the solutions. Of course, both key stakeholders have important organizational priorities that must be met in addition to this goal: Higher education needs to prioritize enrollment, retention, and graduation, and employers need to prioritize their bottom line, ROI, and efficiency. But they may not realize that when they prioritize individuals, they are prioritizing these goals. Individuals who are better able to navigate college are more likely to stay enrolled and graduate. And individuals who are better able to navigate their career trajectories are more likely to stay with a company and be more productive workers.

When we asked the group to consider how we might reinvigorate partnerships between higher education institutions and employers, several pointed out that maybe there's a reason these partnerships continue to struggle. It's not that both sides don't have a vested interest in making them work. Rather, there should be more partners at the table. Some participants suggested expanding the partnership conversation to also include government, policy, and philanthropy. They also said we should find ways to bring the people who are actually on the losing end of this situation — the learners and workers — to the table.

Additionally, we need to develop a shared benefit mindset. Jeff Wasden, President & CEO at State Business Executives, said that many large industries like manufacturing and life sciences are worried about giving away proprietary information and therefore operate in silos. ***"But we need a shared mindset to develop a skilled workforce where everyone can benefit from enhanced talent,"*** he said.

The problem could be the solution

Addressing the loss of the bottom rung of the career ladder will require modernizing entry-level job experiences, redesigning postsecondary programs, and reimagining on-the-job learning.

That kind of transformation won't be easy. But the very technology that is accelerating entry-level job loss could also be a tool for rebuilding career pathways in the age of AI. New organizations like the **Learning Design Alliance (LDA)**, a non-profit organization committed to revolutionizing education by providing learning designers, educators, and experts with advanced tools and methodologies, are already making learning design more accessible, scalable, and responsive.

We recently **partnered with LDA** to develop an AI-powered design tool for the creation of learning content. This partnership will leverage AI to speed up routine aspects of learning design, freeing up experts to focus on high-impact content refinement and personalized learning that has not yet been achieved at scale due to resource and time constraints.

AI tools like LDA have the potential to make curriculum design, assessment, support, and instructional delivery easier and more cost effective to build learning experiences that are high quality, personalized to students, and even customized to specific industries, companies, or roles. This puts education and training in the hands of companies just as it does educational institutions.

By dramatically reducing the time it takes to develop courses, we can create hyper-relevant, widely accessible learning experiences that empower novices to gain the skills and experience needed to climb to the next rung in their professions.

5 ways AI could help build a stronger bottom rung

While AI is contributing to the erosion of entry-level opportunities, it also holds significant potential as a solution. We asked participants at our focus group to brainstorm other ways to use AI to address the deteriorating bottom rung of the career ladder. Here's what they said:

1. Better skills identification

Employers have historically struggled with identifying the skills they actually need for various roles. Over time, job descriptions have become additive, with employers continuously adding new skill requirements while failing to eliminate obsolete ones.

By analyzing actual job deliverables and outcomes to determine what skills are truly required for success in specific positions, AI could make accurate skills identification not only possible but also widely accessible. This precision in skills identification could help address the experience gap by ensuring that entry-level positions focus on the competencies that actually matter for career progression, rather than credential-centered requirements that artificially exclude capable skills-focused candidates. By creating more accurate job descriptions, AI could help restore the accessibility of entry-level roles while ensuring they provide meaningful pathways to advancement.

2. Faster domain-specific and industry knowledge

Instead of taking months, if not years, for a new employee to understand the way a company or industry operates, an employee could take a hyper-specific course developed by AI at the beginning of their employment. While this sort of endeavor would typically require intensive resources and investment, tools like LDA could democratize the ability for small and medium-sized businesses to develop role or company-specific work-based learning programs at manageable price points.

Additionally, traditional curriculum design has been plagued by lengthy development cycles and high costs, often resulting in content that is either of lower quality or outdated by the time it reaches learners. With an accelerated curriculum design process, AI increases the likelihood that learners will receive more recent, relevant content that better aligns with current workplace skills. By creating pathways for new hires to rapidly acquire the domain expertise typically gained through years of on-the-job experience, companies could make entry-level hires productive more quickly while still providing them with essential foundational knowledge.

3. Virtual experiential learning for durable skills

Allie Danziger, Senior Vice President & GM at Ascent, said AI presents unique opportunities for experiential training through role-playing scenarios and simulations that teach the ***"untaught rules of work."*** This could include practice sessions for salary negotiations, requesting time off, performance reviews, and other professional interactions that aren't typically covered in formal education. Similarly, Marquand said AI could streamline the development of micro-internship projects, which have historically been resource-intensive to develop and manage.

These virtual experiences could serve as the low-stakes learning environments that new workers desperately need to develop practical wisdom and professional judgment — the very experiences that traditional entry-level roles once provided. By offering unlimited opportunities to practice and make mistakes in simulated environments, AI-powered experiential learning could help bridge the experience gap without requiring companies to invest heavily in supervising inexperienced workers.

4. Personalized learning experiences based on specific jobs and industries

Daniel Gannon, Senior Director of Academic Portfolio Management at WGU, said AI could enable the creation of highly personalized case studies that align with individual interests and career goals. He envisions learners not only completing personalized degree programs but also receiving custom in-course guidance aligned to job titles and career paths that match their unique skills and aspirations.

Such personalization becomes especially critical in addressing the social capital gap, as AI could help individuals from under-resourced communities identify and prepare for opportunities they might not have discovered through traditional networks. By providing tailored career guidance that considers an individual's background, skills, and interests, AI could help level the playing field for those who lack access to elite professional networks or privileged backgrounds.

5. Improved career navigation

AI tools can analyze resumes and professional profiles to generate potential career opportunities and identify connections that might not be immediately obvious. Agbeshie-Noye said that many individuals aren't even aware of all the possibilities based on their existing experience and skills.

"Navigation will be one of the great use cases of AI," Vinton commented. AI-powered career navigation could assist workers in thinking more strategically about their career goals, strengths, and professional journeys.

This becomes particularly valuable as the nature of career progression becomes less linear and more complex, requiring workers to continuously adapt and identify new pathways. For individuals lacking strong professional networks or mentorship, AI career navigation tools could serve as democratized advisors, providing guidance that was previously available only to those with extensive social capital.

Conclusion: the Messy Middle

The entry-level job that serves as the first step on the career ladder today is not the same as yesterday's. In fact, we might be looking at a different ladder altogether, rather than the bottom rung of the current model disappearing.

Our focus group was generally in agreement: The work done by new career entrants will be different and more difficult to traverse, especially by underserved populations, if proactive strategies are not implemented.

The group was not fatalistic, however. While advances in AI could be responsible for the elimination of many white collar, entry-level roles, this technology could also be the solution for creating a faster, smarter, and more accessible system for continuous learning. They identified solutions that could be mobilized to help people gain the experiences, make the connections, and enlist the resources that will help us navigate this transition. But our time together was short relative to the immensity of the issue.

We recognized that today, we sit in the Messy Middle. The question of institutional ownership over redesigning learning experiences for entry-level positions presents multiple challenges across sectors. Higher education institutions would need to fundamentally restructure their existing pedagogical models to accommodate these new requirements. Employers, despite their proximity to evolving job demands, lack the historical capacity and infrastructure for comprehensive workforce development at this scale. Government intervention would necessitate substantial federal investment and bipartisan policy coordination within a political environment marked by fiscal constraints and partisan divisions. Philanthropic organizations, while demonstrating targeted engagement in this domain, may lack the resources and systemic reach required to address the magnitude of this challenge. While our group identified several potential interventions, the complexity of this transition likely demands unprecedented cross-sector collaboration to ensure sustainable workforce development outcomes.

Moving forward also requires coordinated experimentation across sectors. Rather than waiting for perfect clarity on institutional roles, we need pilot programs that test these AI-enabled solutions in real-world settings. The cost of inaction — a generation of workers unable to gain foundational experience — far outweighs the risks of imperfect early attempts. The question isn't whether we can perfectly predict the future of work, but whether we can build adaptive systems that evolve with it.

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About WGU Labs

WGU Labs is the research, development, and investment arm of Western Governors University, where our mission is to identify and support scalable solutions that address the biggest challenges in education today.

Report Contributions

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