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U.S.–German Innovations for a Changing Workforce

McCloy Fellowship on Global Trends Final Report

by

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By Devin Corrigan, 2025 McCloy Fellow on Global Trends

The United States and Germany are both undergoing a fundamental transformation of their workforces, driven by three converging forces: the rapid rise of artificial intelligence, an aging workforce, and shifting migration patterns. These compounding pressures have policymakers on both sides of the Atlantic urgently seeking to build a prepared, agile workforce for decades to come. Policymakers in the workforce field consistently point to apprenticeships as a key solution to build a trained, upwardly mobile workforce. At their best, apprenticeships meet the demands of both employers by providing them with well-trained employees; and workers by paying them for training, and connecting them directly to careers. Given the economic pressures, apprenticeships promise aging industrialized nations a clear pathway to connect young adults and newcomers to jobs vacated by retirees and to new occupations created or altered by the adoption of automation and AI.

Germany has spent generations developing the world's most robust dual Vocational Education and Training (VET) system, anchored by institutionalized tripartite partnerships, highly vetted curricula, and structured career pipelines. To understand how this deeply institutionalized system is adapting to these changes, I conducted fieldwork across Germany as part of the American Council on Germany's McCloy Fellowship on Global Trends. Through interviews with vocational educators, trade union leaders, federal agency heads, researchers, chamber officials, enterprise training heads, employers, apprentices, and students, I learned how Germany's framework operates in practice. I also conducted field interviews in the U.S., where I am a workforce development professional with expertise in apprenticeships.

As is well documented in comparative workforce literature, Germany's system is more formal, rule-bound, and institutional, while the U.S. system is more decentralized and market-driven. My goal in this project is to examine how these structural traits help or hinder both nations as they confront these three compounding global shifts. The German approach provides the framework for sustained partnership. While federal strategy may move more slowly, innovation from social partners on the ground filters up to drive lasting, systemic change. Conversely, while recent U.S. federal initiatives have demonstrated rapid agility by setting ambitious expansion targets and embedding AI into national standards, the American system fundamentally lacks the institutional scaffolding required to sustain these partnerships and serve at scale, leading to inconsistency across the system.

Brief Background on the German and American Apprenticeship Systems

Before diving into their responses to global macrorends, it behooves us to briefly review the fundamental factors of the German and American apprenticeship systems. The German dual vocational training model relies on a highly structured partnership among state, industry, and labor actors. At the federal level, the Federal Institute for Vocational Education and Training (BIBB) works in consensus with trade unions and employer associations to establish broad, standardized occupational profiles. On the ground, execution is split between two primary stakeholders: public vocational schools (Berufsschulen), funded by the federal states (Länder) to deliver classroom instruction, and private companies, particularly the small- to medium-sized Mittelstand, which fund apprentices' wages and provide practical, on-the-job training. Regional business chambers (such as the Industrie- und Handelskammer [IHK] and Handwerkskammer [HWK]) act as intermediaries in the system, registering contracts, conducting final exams, and pairing students with employers. Today, this system remains a key career pathway, with approximately 1.21 million active apprentices, or roughly 54 percent of young Germans[1]. While traditional industrial pathways are well established, the model is expanding into additional sectors, including healthcare and hybrid dual studies, where apprentices earn a university credential during their apprenticeship.

In contrast, the U.S. Registered Apprenticeship system is decentralized, sponsor-driven, and regulated by the U.S. Department of Labor (DOL) or by individual State Apprenticeship Agencies (SAA). Rather than relying on a top-down national curriculum, the U.S. system empowers individual program sponsors to design and deliver training tailored to their sector's needs. Apprentices make up less than 1 percent of the total U.S. workforce, with youth representing roughly 30 to 40 percent of apprentices.[2] However, the system is experiencing historic expansion, with the number of active registered apprentices nearly doubling over the past decade, reaching almost 700,000[3]. Although still dominated by labor unions in the building trades, the apprenticeship system is expanding into nonbuilding trades such as tech and healthcare.

Automation & AI

Given these structural differences, the German and American systems have both struggled to keep pace with and address the ethical implications of AI. The World Economic Forum projects that, globally, nearly 40 percent of core skill sets will transform or become obsolete by 2030, placing tremendous strain on workforce pipelines[4]. To successfully navigate these dynamics, Germany must adapt its "big ship" of a system to keep pace with change, while the U.S. must coordinate its many pilots to establish a unified strategy.

Skilling Workers

Germany's tripartite consensus model emphasizes high-quality training for apprentices but struggles to keep pace with industry. Overhauling national training regulations (*Ausbildungsordnungen*) requires years of stakeholder negotiation, which is misaligned with AI's rapid iteration. To bridge this gap, federal regulators have developed a few standard modules across apprenticeships about the ethics of AI. However, this does not fully prepare apprentices for the tech skills needed on the job. During my site visit to a vocational school in Baden-Württemberg, whose main apprenticeship partner is Daimler truck facilities, a school leader told me, "When a new technology or process arrives in our local plants, we do not wait three years for the Ministry to update the syllabus; we build the learning scenario directly into our process-oriented modules." Educators must balance the rigid delivery of mandated curricula for final exams and meeting the needs of local employers who will hire their students.

Not having a centralized curriculum can be an advantage in the U.S., allowing sponsors to bake AI training straight into the workday. However, conversations with workforce practitioners reveal a major execution gap. While policymakers push for AI-enabled standards, people on the ground warn that very few practical training models are actually available. As one workforce expert observed, "In the overall apprenticeship community, there's readiness to pivot into more AI-enabled standards and occupations, but I don't think there's a ready solution for dealing with that at the moment." The U.S. system is quick to adapt in theory, but without shared structures to support it, local sponsors are left working in isolation, resulting in fragmented and deeply unequal outcomes for apprentices and employers.

Timely versus Timeless Skills

Beyond updating curricula, both systems are working through a key tension - how to teach the immediate skills workers need today without sacrificing the deep, lasting knowledge they need for a long career. Germany's dual system is structured to prioritize foundational competencies before apprentices are allowed to specialize. In practice, educators told me this means shifting the worker's primary identity from manual executor to quality-assurance manager. As one teacher said, "The machine operator of the future isn't writing every line of code; they are auditing what the AI generates. We tell our apprentices: 'The AI will give you an answer in two seconds, but you are legally and technically responsible for checking whether that robot motion will crash into the workbench.'" The German framework treats AI as a tool built on a deep technical foundation, with a focus on developing the skills and knowledge workers need to exercise good judgment throughout their careers.

The American system, driven by employers' immediate production needs, naturally prioritizes the skills required today. The push to integrate AI competencies directly into Registered Apprenticeships accelerates this trend, but at a high cost. As one tech intermediary shared with me, "If routine tasks disappear, workforce systems must find new ways to build foundational

skills.” This connects with one Dortmund-based computer science teacher who warned, “With this AI vibe coding stuff... for me as a computer science guy who knows how to program and knows security measures, it's perfect... But for someone who starts to learn or work, it's really difficult not to be replaced... if you don't bring entry-level employees to a level where they can be efficient, in the end they don't have the experts anymore.” Without core foundational skills, both countries risk producing a workforce that can generate AI prompts, but lacks the ability to evaluate the results.

Physical AI Infrastructure

The integration of AI also exposes a stark divide between Germany and the US’s approach to AI’s physical infrastructure. Germany has retrofitted existing industrial plants rather than building new data centers due to higher energy costs, stricter regulations, and fewer available sites in Europe. Without the space or capacity to build new data centers, German businesses, especially small and medium-sized Mittelstand businesses, have been partnering with public vocational schools to build regional AI-powered innovation hubs where apprentices and incumbent workers train side by side. As a result, the vocational system adapts by teaching apprentices to bridge old hardware with new software to modernize existing equipment. Although the technology is not as cutting-edge, it fosters a learning environment where apprentices and incumbent workers learn together on the job.

This is very different from the U.S., where demand for AI computing has led to a (controversial) boom in data center development, pushing enrollment in the building trades to historic highs. As one US-based workforce expert observed, “Construction is growing because we’re building lots of data centers. From conversations I’ve had with North American Building Trades Unions, they are at their highest numbers of apprentices in some decades.” Demand for skilled trades in top U.S. data center markets grew 22.1% between 2020 and 2025, with emerging hubs seeing up to 48% growth [5]. The US labor union leaders I spoke with were happy with the hiring in their field, but were concerned about the long-term workforce lifecycle. Data center construction typically employs between 4,000 and 5,000 tradespeople at peak activity, but an operational site typically supports fewer than 100 long-term positions [6]. As one philanthropic leader pointed out, “There is a push to support trades to build data centers, but the question remains: who gets quality jobs after they are built?”

Successfully navigating the AI transition will require both nations to integrate the other’s structural strengths. To break its statutory bottlenecks, Germany needs to adopt some of America’s modularity, creating formalized but flexible pathways for local schools to integrate emerging tech without waiting for national consensus. On the other hand, the United States desperately needs Germany’s institutional scaffolding to stabilize its fragmented expansion. The U.S. can insulate its workforce from volatile tech cycles by anchoring apprenticeship programs in durable foundational skills and by building pipelines that connect to longer-term positions.

The most resilient approach combines American agility with German integrity, ensuring that apprentices are neither stalled by bureaucracy nor rendered obsolete by hyper-specialization.

Demographic Change & Youth

Another key trend facing both nations is a severe demographic cliff. As older workers retire, both the US and Germany face a shrinking labor force, especially in manufacturing and the building trades, the traditional backbone of both countries' apprenticeship systems. By 2035, one quarter of Germany's population will be aged 67 or over, and the impact on traditional trades is already visible. In 2025, industrial employment fell sharply by 143,000 workers, construction dropped by 23,000, and the industrial sector's overall share of employment continued to shrink. [7] While the overall US population is slightly younger, the median age in American manufacturing is 43.9 years, well above the national average, and nearly 23 percent of all U.S. construction workers are now older than 55. [8] These figures illustrate a paradigm shift for both countries. As one Baden-Württemberg principal observed regarding the German system, "Ten years ago, we selected the best. Today, we must qualify whoever walks through the door. We no longer have the luxury of filtering young people out; our job is to keep them in the system and get them across the finish line."

Apprentice Recruitment

For both nations, building a sustainable talent pipeline requires navigating three core systemic challenges: overcoming the cultural bias towards university degrees, establishing effective career navigation, and embedding work-based learning into secondary education. While these challenges are shared, the structural mechanisms Germany and the U.S. use to address them create entirely different recruitment landscapes.

Both systems face a strong societal bias toward university or college education. Unlike in the U.S., German children as young as ten are funneled into distinct academic tracks: the basic *Hauptschule*, the middle-tier *Realschule* (historically the primary feeder for apprenticeships), and the elite *Gymnasium*, which culminates in the *Abitur*, the university-entrance diploma. Families increasingly view the *Abitur* and a university degree as the best path to economic mobility and security. This cultural shift often puts students at odds with official state career guidance. As one Bavarian student shared, "The career advisor who comes to our school always wants you to do an apprenticeship and start working right away, but a lot of students want to continue school and get higher degrees. He does not listen to us as much as he should." Over the past two decades, this preference has fueled a steady cultural shift toward university-track education. *Realschule* enrollment dropped from roughly 25% to under 18% nationwide, while enrollment in the classical *Gymnasium* climbed from roughly 30% to over 37%. [9] This has thinned the traditional pipeline into German apprenticeship.

In the United States, the societal bias toward higher education manifests as a pervasive cultural bias rather than administrative tracking. Unlike Germany's multi-tiered secondary system,

American public education funnels the vast majority of students through college-prep coursework. Vocational alternatives are seen as an afterthought. As one U.S. labor leader pointed out, "Historically, there's been a perception that registered apprenticeships in the building trades are a 'second chance' option rather than a primary career path right after high school." Without structured pathways that bridge high schools and industry, many young Americans spend years of trial and error and underemployment before finally discovering the trades in their late twenties or early thirties.

Each system has developed different solutions to combat these recruitment pressures. Germany has rapidly scaled up the *Duales Studium* (dual-study program), a hybrid model that combines rigorous university coursework with practical, paid enterprise training. This framework allows students to earn a traditional academic degree while building hands-on professional experience. During my fieldwork, I met a number of apprentices who dropped out of university to pursue an apprenticeship. One apprentice in Dortmund explained her transition: "I went to uni as well. I went for mechanical engineering. It's a lot of theory, but not practical work." Employers welcomed these candidates, noting that their foundational knowledge paired with an appetite for hands-on work made them exceptional apprentices. Today, roughly a quarter of new active apprentices hold university entrance qualifications *Abitur*, which has shown the success of this more flexible model [9].

By contrast, the United States has pursued a decentralized strategy in which program sponsors embed pre-apprenticeship coursework and dual-enrollment credits directly into high school and community college pipelines. These grassroots efforts have driven historic growth, nearly doubling the active registered apprenticeship population over the past decade to nearly 700,000 [3]. Furthermore, the system is rapidly expanding beyond its traditional base in the building trades, with apprenticeships increasingly reaching nontraditional sectors such as healthcare, technology, and advanced manufacturing. In healthcare alone, 36,892 apprentices were served in 2025, a 43 percent increase over the previous five years [10]. To reach younger demographics, regional partnerships are increasingly leveraging high school pre-apprenticeships and youth apprenticeships to provide direct entry into careers and create alternative pathways for young people entering the workforce.

Additionally, both nations must expose young people to the world of work so they can make informed choices about their futures. Work-based learning is structurally baked into German secondary education through mandatory short-term workplace placements known as *Schnupperlehre* or *Praktikum*. During my fieldwork, I met students who spent weeks embedded in hospitals, police stations, retail environments, or industrial floors. One Bavarian student recalled, "I did an internship in the hospital, and I helped the nurses, drew blood, took blood pressure, and wrote everything down in the system. It was a little peek for me to see how it was going to be, and it helped me figure out what I like." They repeatedly characterized these stints as the most effective tool for gaining career clarity. To facilitate this, regional Chambers of Commerce (*IHK* and *HWK*) deploy matchmakers to actively pair students with local *Mittelstand* employers, ensuring that small companies have access to young talent.

Despite historically lacking this institutional infrastructure, many states are integrating work-based learning models into high schools to develop students' career awareness both within and beyond the apprenticeship world. For example, states like California and Louisiana are embedding pre-apprenticeship coursework and dual-enrollment credits directly into high school curricula. In California, initiatives through the Division of Apprenticeship Standards and local education agencies enable juniors and seniors to begin related supplemental instruction and on-the-job training, blending high school diplomas with transferable college credits in high-growth sectors such as cybersecurity, healthcare, and advanced manufacturing [10]. Similarly, Louisiana's Fast Forward and Jump Start initiatives allow students to complete core academic coursework early and to easily transition into postsecondary technical campuses or state-recognized pre-apprenticeship pathways. [11] While these initiatives may not reach the deeply entrenched institutionalization of the German dual system, they offer American students an invaluable head start in navigating the workforce and exploring viable career paths far earlier in life.

Apprentice Retention

While recruitment opens the pipeline, long-term retention determines whether these systems can sustainably close their widening middle-skill gaps. Both nations face distinct structural friction points that threaten completion rates. In the United States, apprenticeship completion rates have historically hovered around 50%, although nationally comparable completion data remain limited and the U.S. Department of Labor recently updated its methodology for measuring completion [11]. This data gap makes it difficult to assess how completion varies across occupations, industries, and demographic groups. Although Germany has comparatively high apprenticeship completion rates, the share of apprenticeship contracts terminated prematurely reached a record 29.7 percent in 2023. Importantly, the German Federal Institute for Vocational Education and Training (BIBB) cautions that contract termination should not be interpreted as apprenticeship dropout, as many trainees subsequently enter another apprenticeship within the dual system [12]. In both nations, the vast majority of contract cancellations occur early in training, typically before an apprentice fully integrates into the workplace culture. According to employers and practitioners, youth frequently leave the system when the realities of the job conflict with the idealized expectations presented during early career counseling.

In Germany, this expectation mismatch is compounded by financial and educational friction. Many apprentices I spoke to felt stretched by their modest apprenticeship stipends and cited affordable housing as a major barrier, especially in large urban centers. In several regions, student focus groups noted that their youth councils (Youth and Apprentice Representation, or JAV) were actively fighting to increase subsidized cafeteria food portions because baseline stipends simply cannot cover basic living costs, including rent. As two apprentices in Dortmund explained, "With our salary, if we want to eat there every time, it's difficult if you rent a flat."

Inside the vocational schools, this friction is further complicated by the sheer diversity of classrooms. Because the dual system broadly blends cohorts, 17-year-old recent graduates often train alongside career switchers in their forties. This creates obvious tension when schools fail to adapt to adult learners. During fieldwork, apprentices felt infantilized by school procedures. "Certain teachers tend to treat us like we're in secondary school," one apprentice noted. "If we want to go to the toilet, we have to get the key and write our name." Trainees cited these paternalistic dynamics, alongside refusals to let older trainees test out of foundational material they already knew, as major sources of demotivation.

When these compounding frustrations push an apprentice toward quitting, the Chambers of Industry and Commerce (IHK) step in. The chambers act as a structural safety net, providing a neutral space to mediate employer disputes or help trainees transfer to new companies and alternative trade tracks. By intervening directly, the IHK ensures that a canceled contract doesn't automatically result in a permanent exit from the workforce.

Without the standardized institutional safety nets of the German chambers, U.S. apprentices often face a steep retention cliff. Workforce practitioners warn that this drop-off typically hits when initial wraparound services, such as childcare subsidies, transit passes, or tool stipends, are abruptly exhausted. As one philanthropic leader noted, "We know that in the second year is where we really see retention drop because those services and supports go down." Consequently, the U.S. is forced to retain apprentices on an almost one-by-one basis, leaning heavily on employers to find individual solutions or on unions to provide workers with a protective voice and equitable advancement.

Additionally, the American apprenticeship system is increasingly deploying outcome-based, pay-for-performance funding models to curb dropout rates. National workforce advocates suggest implementing scaled apprenticeship completion bonuses. As one workforce leader explained, with these bonuses, "employers will start finding it financially viable to figure out apprentices' challenges, whether that's transportation, childcare, or lack of access to laptops." By tying funding directly to completion metrics, sponsors are financially incentivized to help participants overcome barriers to employment.

Again, the formalized nature of Germany's apprenticeship system allows it to meet these challenges at scale. Germany leans on chamber oversight, youth advocacy, and collective structural interventions, while the United States is working to improve retention through targeted wraparound services and strategic financial incentives that keep apprentices securely on the path to the middle class.

Migration & Labor Integration

With aging workforces imparting traditional trades, both nations could leverage immigrant and refugee populations to build pipelines to middle-skill occupations. Developing effective,

equitable labor integration strategies is challenging. Germany relies on substantial, formalized upfront investment, specifically in German language acquisition, to ensure long-term cultural and linguistic assimilation. By contrast, the United States has an inconsistent approach to labor integration, with a focus on immediate job placement. These efforts are frequently stifled by rigid immigration policies, employer risk aversion, and, most recently, intimidation tactics of immigrant communities.

The German dual system treats vocational education as its primary engine for immigrant social integration, prioritizing long-term human capital development over immediate job placement. Over the past decade, the number of non-German apprentices has nearly doubled, driven heavily by arrivals from Syria, Ukraine, and Vietnam. [12] As a leader at a regional Chamber of Industry and Commerce noted, this long-term investment requires a significant upfront commitment from apprentices, training providers, and employers, with no guarantee that apprentices will stay in Germany with their apprenticeship company. This official explained the system's philosophy: "You have to learn German, culture, and society as well. And then we integrate you. This now seems to work better." German is a difficult language to learn, especially the technical terms used in many industrial and healthcare occupations. Unfortunately, this leads to disparities in apprenticeship completions. Historically, roughly 32 percent of non-German students discontinue their VET training, compared to 25 percent of German nationals, with the largest share of cancellations coming from the main asylum countries. [13] One educator in Würzburg observed, "Some kids are excellent in mathematics, especially the Ukrainians and Syrians, but it is still too hard to struggle with the language, especially subjects like history." Another teacher in Dortmund noted, "Because [new arrivals] required extra hours [for language instruction] after standard instruction, voluntary attendance dropped significantly over time. Consequently, attendance has now been made mandatory once a student registers."

The stakes in passing their apprenticeship exams are much higher for non-citizens. As one researcher explained, "If they don't manage their apprenticeship, their chance of getting a residence permit... is gone. You're fully affecting their perspective on integration... German nationals who fail an exam... don't lose their right to stay." A Baden-Württemberg school leader agreed, "We spend two years teaching a young refugee German, getting them qualified and integrated into a local firm that desperately needs labor, only for them to receive a deportation order while companies are simultaneously spending thousands of Euros trying to recruit workers from abroad. This is institutional schizophrenia." This dysfunction squanders desperately needed talent and can lead to increased public cynicism. In an economic downturn, these perceived immigrant integration failures amplify political polarization and strengthen far-right movements like the AfD, which in turn push for harder-line immigration policies that starve local industries of talent.

To combat these systemic frictions and stabilize the integration pipeline, German workforce institutions are intervening at every stage of the apprentice lifecycle. At the secondary school level, models like the SPRINT program temporarily isolate newly arrived refugee and immigrant

youth for intensive language immersion before mainstreaming them into standard technical coursework. Educators I spoke with emphasized that while this delays immediate technical training, isolating language acquisition first yields higher success rates once students transition to normal classes. One Bavarian teacher said, "They are secluded in this class with teachers really focused on German, and most of them make it, and we do have some unbelievable success stories." On the employer side, the state recognizes that the bureaucratic burden of hiring a migrant is often too high for the small- to medium-sized Mittelstand enterprises that form the backbone of the dual system. To bridge this gap, state-funded intermediaries known as Willkommenslotsen (Welcome Guides) act as navigators. One program interviewee explained that their job is to "match refugees with companies for either an apprenticeship or a job" and that "they provide legal counseling to the extent that they help... with paperwork, and they help with issues even once the people have been matched."

Finally, to address the reality that many migrants arrive as adults with existing skills, the Federal Institute for Vocational Education and Training (BIBB) is advancing Validierung, frameworks to rapidly assess and formally recognize prior informal learning. One BIBB researcher emphasized this need: "Because traditional German apprenticeships take three to three and a half years, finding ways to assess and validate what adults already know so they can enter higher-level training or directly obtain a recognized credential is a huge priority for us in research." By allowing adult migrants to bypass redundant components of the traditional three-year timeline, the system aims to accelerate their entry into the skilled labor market without sacrificing the foundational quality that the German apprenticeship model requires.

In contrast to Germany's centralized system, the American rigid, punitive immigration system blocks businesses from training foreign-born talent already residing in their communities, ultimately starving domestic industries of essential middle-skill workers. One U.S. workforce expert highlighted how federal funding rules create an immediate bottleneck, noting that "in the registered apprenticeship system, it is for U.S. citizens. Anything that's federally funded is for US citizens." Many industries attempting to scale apprenticeships are heavily dependent on foreign-born labor. Immigrants comprise roughly a quarter of the overall U.S. construction workforce, over one-third of specific construction trades, and 20 percent of the early childhood education sector. [14, 15] Latino workers represent 21 percent of active apprentices in fiscal year 2024 despite comprising only 13 percent of the U.S. population. [16] However, Hispanic workers account for only 17 percent of registered apprenticeship completions [17]. This gap indicates that many Hispanic construction workers are underrepresented in apprentice pipelines, which are critical pathways to unionized labor, which offers significantly higher wages and worker protections than non-union alternatives.

Rather than stabilizing this pipeline, recent federal actions have dismantled the nation's immigrant integration infrastructure. In early 2025, the Trump administration suspended the U.S. Refugee Admissions Program (USRAP), and ordered federally funded refugee resettlement organizations to halt work [18]. In February, the State Department terminated its Reception and

Placement agreements with all 10 national resettlement agencies, dismantling the network responsible for providing newly arrived refugees with initial housing, employment assistance, and other integration services. The broader contraction in federal refugee services was substantial: Office of Refugee Resettlement (ORR) contract obligations fell by approximately 90 percent, from \$1.3 billion in FY2024 to \$129 million in FY2025 [19]. The administration subsequently set the FY2026 refugee admissions ceiling at just 7,500, a 94 percent reduction from the 125,000 ceiling established for FY2025 and the lowest ceiling in the program's history [20]. These efforts plus a pervasive culture of fear have severely stifled efforts to systematically integrate foreign-born workers into the U.S. economy.

Despite this challenging environment, grassroots actors, including unions, community-based organizations, and state intermediaries, have developed interventions to include more immigrants in their apprenticeship systems, many of which mirror those in Germany. At the entry level, programs use targeted pre-apprenticeships and dual-language curricula to bridge initial language gaps and unfamiliar workplace norms. Examples include regional building trades initiatives tailored for Minnesota's Somali community and bilingual instruction tracks in early care and home health. Once trainees are on the job site or factory floor, workforce programs build peer safety nets by deploying cohort-based training models, workplace mentorship, and wraparound stipends for transit and childcare to protect vulnerable apprentices from the retention cliffs that cause high dropout rates.

Finally, progressive state apprenticeship agencies and community colleges have established Prior Learning Assessments (PLA) and competency-based credit articulation to better integrate adult immigrants who arrive with prior foreign work experience. By allowing experienced foreign-born workers to formally validate their existing skills and bypass redundant entry-level coursework, the U.S. system attempts to accelerate their transition into high-wage, credentialed careers without sacrificing industry standards.

Successfully integrating migrant labor requires both nations to borrow from the other's structural playbook. Germany must adopt a degree of American modularity, decoupling immigration status from rigid, high-stakes academic testing and allowing for more flexible, dual-language training environments aided by AI translation tools. Conversely, the United States must look to Germany's structured co-investment model. By adopting formalized institutional safety nets and embedding immigrant support directly into the apprenticeship, the U.S. can transition its immigrant workforce from isolated, low-tier jobs into stable, long-term industry pipelines.

The Power of Transatlantic Exchange

Ultimately, the macrorends of artificial intelligence, an aging population, and shifting migration patterns are not a passing disruption to manage, but a permanent new reality of the global economy. As industrialized nations confront these compounding pressures, apprenticeships

can no longer operate on the margins of economic policy as a secondary fallback to a university degree or a short-term hiring fix. They must be elevated to a key economic resilience strategy.

Navigating the next decade of workforce development requires moving past the binary debate between American market agility and German institutional tradition. The future demands that both systems evolve. For Germany, this means shedding bureaucratic inertia, allowing local ecosystems the flexibility to innovate without waiting for national consensus, and acting urgently to integrate new arrivals into its labor market. For the United States, it means maturing beyond fragmented, grant-funded pilot programs to build enduring policy infrastructure. We must expand on regional innovation hubs and portable credentials towards permanent institutional safety nets that outlast volatile political cycles and secure long-term pathways for youth and newcomers alike.

Ultimately, examining a deeply entrenched model like Germany's is not about attempting to import it wholesale to the U.S. My biggest learning from this is that drawing lessons from our global partners does not dilute our uniquely American approach. It sharpens it. By understanding how Germany anchors its workforce through deep partnerships and a commitment to longer-term outcomes, the United States is better equipped to build a system that remains agile while finally building the resilient infrastructure our workers desperately need. Looking outward to learn from the rest of the world does not make our institutions less American; it simply makes both countries more prepared to face the future.

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