

# OPENCLASSROOMS



WHITE PAPER

## Expanding the Talent Pool with Modern Apprenticeships

April 2023

# Executive Summary

Companies lack enough appropriately skilled workers to perform, grow, and beat their competition, and they need an immediate method for addressing this challenge—or else risk losing ground in the marketplace. Workers need training and skills that will increase their employability today and prepare them for the complex, technology-dependent jobs of the future.

Burdened by this employment crisis, business leaders across all industries are examining whether apprenticeship programs can address their needs. In many ways, an apprentice is the ideal employee—someone trained from day one on tasks that are specific to their jobs even as they're working toward a credential. And the roles are attractive to would-be employees, as they get to learn and earn wages at the same time. Many apprentices develop such an affinity for their sponsoring company that they not only join as full-time employees but stay longer than other new hires—a practice that cuts down attrition while saving precious training dollars.

Apprenticeships also are a way to diversify the employee talent pool, something that opens opportunities for underserved populations while also expanding and diversifying professional and leadership pipelines.

“Apprenticeship is about closing the skills gap, the talent shortage, by building new skills and the workforce of the future in a more diverse way—trying to tap into pools of talent that some employers didn’t use in the past,” says Pierre Dubuc, cofounder and

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CEO of OpenClassrooms, an [apprenticeship intermediary](#) that works with global companies.<sup>1</sup>

As more companies in the U.S. embrace the potential of apprenticeships, they're adopting a practice that has been common in Europe and Asia for decades: partnering with third-party intermediaries to establish and operate their apprenticeship programs. Apprenticeship intermediaries are a vital cog in the process—a key to deciphering governmental red tape, designing successful programs, and ensuring apprentices have the wraparound support to be successful.

Ultimately, intermediaries absorb administrative tasks on behalf of the companies for whom they work, while also providing the kind of specialized training and support that employers may have little time for or expertise in. And those services have tremendous value for businesses across all sectors.

# Need for a Different Talent Pathway

To understand the breadth of the U.S. talent crisis, consider the math: at the end of 2022, companies needed 10.5 million workers to fill job openings in a labor market where 5.7 million people were unemployed.<sup>2 3</sup> These shortages are impacting businesses across all sectors, though some—healthcare, technology, and manufacturing—are feeling it more acutely than others.

A recent report from the U.S. Chamber of Commerce shows COVID-19 and the Great Resignation are partially to blame, but that other factors were in play long before March 2020.<sup>4</sup> One major factor is that the U.S. workforce is aging,<sup>5</sup> leading to what top economists see as a “structural labor shortage” that won’t go away anytime soon.<sup>6</sup> Employees also are increasingly opting for early retirement. In fact, the Great Resignation actually had been building for at least a decade: between 2009 and 2019, the number of people who quit their jobs increased by 0.1 percentage point each year.<sup>7</sup>

**The truth is that today’s skill and talent shortfall is the result of complex economic and cultural factors forming a perfect storm of employment challenges.** And the tight labor market shows no signs of loosening anytime soon, despite headline-making<sup>8</sup> layoffs<sup>9</sup> at some of the country’s biggest corporations.

Yet this crisis is more complicated than simply finding workers to fill open positions. In a world where jobs increasingly require

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***The World Economic Forum predicts that by 2025, high-tech jobs will replace many of the low-wage, low-skill positions held by 85 million workers worldwide.***

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specialized skills, companies face the additional burden of **hiring employees with the right skills**. For example, employment in tech occupations—especially data science, cybersolutions, and software development—has outpaced overall job growth for years. Hiring in these fields is expected to grow at twice the rate of overall employment in the next decade,<sup>10</sup> as e-commerce, automation, and artificial intelligence continue to transform commerce.<sup>11</sup>

Digitization is a way of life across the marketplace today, impacting employment in retail,<sup>12</sup> finance,<sup>13</sup> and beyond. The World Economic Forum predicts that by 2025, high-tech jobs will replace many of the low-wage, low-skill positions held by 85 million workers worldwide.<sup>14</sup> Few positions will be immune from this hyperdigitization, which means more employees will need new training to perform





their jobs well.

Additionally, the **challenge of workplace diversity and equity** continues to impact competitiveness, productivity, and corporate missions. Businesses of all sizes have rolled out major new DEI initiatives, with leaders pledging to hire workers who better reflect

the communities they serve and in which they operate. But many of those initiatives stalled in 2022, proving that the task is far from complete.<sup>15</sup>

**The bottom line?** Companies working in most high-demand fields are struggling to find the talent and skills they need from a pool of

# The Case for Apprenticeships

appropriately trained workers who reflect America's diverse population.

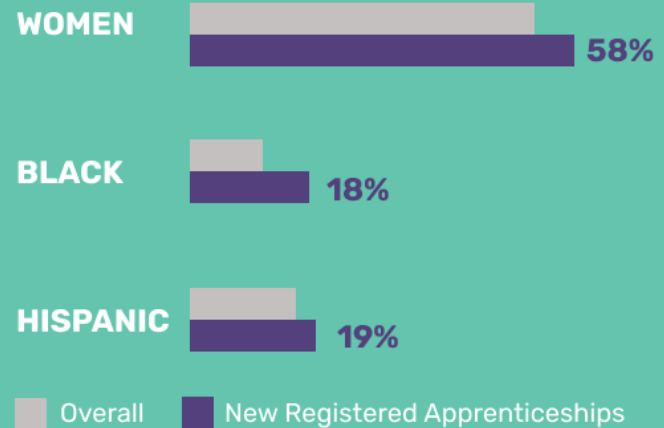
Modern apprenticeships provide a new tool for changing that equation.

For starters, **apprenticeship programs widen the pool of available job candidates.** This is especially true for apprenticeships in fields like tech, healthcare, and financial services—which were all but unheard-of in the U.S. a decade ago. A major analysis of these “new” apprenticeships by Opportunity@Work, a nonprofit advocating for new pathways to good jobs, and Lightcast, a leading labor market analytics firm, found that the **apprentices were significantly more diverse than the current workforce in the roles they were training for.**<sup>16</sup>

- 18% of apprentices in new fields were Black and 19% were Latino, compared to only 11% and 16% (respectively) of the workers in the roles the apprentices were training for.
- Apprentices were also more likely to be women than were incumbent workers in their fields. In software engineering, for example, 31% of apprentices were women, compared to only 19% of workers in those jobs.

The report is clear about the implications of those findings: “New apprenticeships create a talent pipeline for their target roles that is more diverse than the current population in

## Diversifying the Talent Pipeline



Source: Opportunity @ Work

those roles.”

For one, businesses no longer must rely on “traditional” education and training pipelines—which have not served all Americans equally well—since every apprentice receives on-the-job training designed specifically for their industry. Apprenticeships also can help combat workplace bias by allowing hiring managers to test out candidates before they commit to a full-time hire. And because apprenticeships take less time to complete than the typical associate or bachelor’s degree, they **satisfy employers’ immediate requirements for hiring, training, and deploying talent while also filling the pipeline for future needs.**

“If every corporation had five apprentices, look at what that would do to the face of the workforce—from building a foundation of untapped talent pools and providing skills

that are much needed,” says Michelle Sims, CEO of Year Up Professional Resources, a specialized placement firm focused on equitable hiring.<sup>17</sup>

In light of these factors, investing in apprenticeship programs allows employers to focus less on competing for highly skilled workers and more on growing them. Companies and other employers are coming around to that idea—at the same time as federal<sup>18</sup> and state<sup>19</sup> policymakers and cities<sup>20</sup> are stepping up their investments.

## Stymied Growth

Even as employers across industries acknowledge the value of apprenticeship programs, companies have been slow to adopt them. In the U.S., they have remained largely a niche pathway, with just under 600,000 apprentices<sup>22</sup> across the country in the last fiscal year, compared to about 16 million undergraduates<sup>23</sup> in two-year and four-year colleges. Those apprentices are largely concentrated in trades—carpentry, electrical, and plumbing, in particular—and manufacturing positions.

There’s no single reason for that disconnect, since every sector faces its own set of hiring challenges. There is, however, a common thread uniting companies across industries: it’s hard to know where to start. Until recently, U.S. businesses haven’t had the luxury of partnering with the kind of apprenticeship intermediaries that have flourished in Europe, helping companies with program design,

recruitment, implementation, and wraparound support for learners.

This report takes a deeper look at the unrealized potential of apprenticeship in the United States, including:

- Examining **apprenticeships as a solution for a wide range of industries and roles**, and providing examples of successful programs operating in workplaces across the country.
- Addressing the **challenges employers face** when developing apprenticeship programs and highlighting the support they need to bring their models to scale.
- Outlining the **role apprenticeship intermediaries play** in countries with thriving apprenticeship systems, and explaining why that kind of support is necessary for companies in the United States.

# Skilled Workers for Today's Jobs

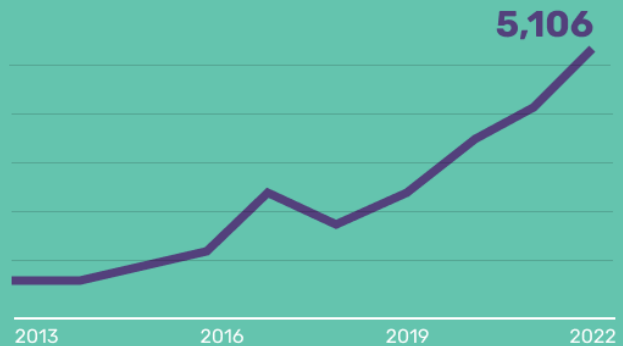
The U.S. talent crisis defies a simple explanation, and the solutions aren't simple, either. But growing the apprenticeship system could ease the challenges that are hampering<sup>24</sup> growth in some industries and prompting<sup>25</sup> emergencies in others.

Apprenticeships directly target the skills gap: they are, by definition, designed to help learners master the knowledge, skills, and other competencies needed to perform specific jobs.<sup>26</sup> **Apprentices don't just learn about the work they'll do as full-time employees—they actually do it.**

In advanced manufacturing, for example, apprentices routinely operate the machines their employers use each day on the factory floor. In the technology sector, apprentices may study one or more programming languages on the days they're in the classroom, then apply what they've learned when they're back at the office.<sup>27</sup> In healthcare, apprentices have opportunities to work with actual patients—with supervision—which expands their newfound knowledge from the theoretical to the practical. In each of these areas, apprentices immediately apply their newfound skills on the job, something that's not the case for all learners.

Apprenticeships also can be tailored specifically for the needs of local markets, and because of their length—one to two years—can be more readily aligned with fast-changing skills. Accenture, a global professional services company, for example,

## Active IT Apprenticeships



Source: U.S. Department of Labor

believes the key to long-term talent development lies in tailoring its skilling and training efforts, including apprenticeships, to people and jobs in local markets.<sup>28</sup>

In 2017, Accenture launched apprenticeships for application testers, system administrators, technical support specialists, and project coordinators that are specifically designed for the Eastside Promise Zone in San Antonio, Texas.<sup>29</sup> One of the hallmarks of the program is its immediacy: as the company's needs evolve in, say, digital technology platform development, the academic portion of the apprenticeship can evolve with it.<sup>30</sup> And that has not only strengthened Accenture's workforce but has increased engagement among program participants.

The best apprenticeship programs also develop broader skills that set people up to keep growing and advancing in their career, including leadership.

"We have apprentices who graduated and



## MERCK

### 'Widening the gate' for diverse talent

Across the U.S., business leaders are discovering that the marketplace rewards diversity. Companies with diverse workforces outperform their competitors on profitability by as much as 36%, and they increase the likelihood of spotting and reducing risks by up to 30%.<sup>38</sup>

But ROI was only part of the reason why in 2022 the biopharmaceutical maker Merck partnered with OpenClassrooms, a global apprenticeship intermediary, to create yearlong internships in data analytics and digital marketing.

After widespread societal unrest in the U.S. in 2020, many companies amplified their DEI initiatives—including analyzing and revamping hiring practices. Many industries have struggled to create diverse talent pipelines, which harms their reputations and impacts their ability to innovate and remain relevant.

Merck's partnership with OpenClassrooms complements the Skills First initiative, designed to boost the number of people from underrepresented communities in its workforce and expand opportunities for those who lack college degrees, many of whom come from underserved populations.

Part of that process involves helping the company's hiring managers rethink their biases, says Ngozi Motilewa, head of the Skills First diversity talent initiative at Merck.<sup>39</sup> Not every job demands a college education, particularly after a year of intense training to build the right blend of knowledge and skills.

"We're not lowering the bar," says Motilewa. "We're widening the gate."

The apprenticeship program remains in its infancy, but Motilewa says the company plans to expand the program into other high-value parts of its operation. **Merck received more than 700 applications for the program, which has had a graduation rate of 100%.** And by partnering with OpenClassrooms, the company was able to launch the program just three weeks after receiving final job descriptions.

Diversifying talent, she says, is a "business imperative" in today's marketplace, a challenge made easier through programs like the one with OpenClassrooms.

As Suzi Levine, a senior fellow in international and public affairs at Brown University, says, "Merck is taking a leap from being a consumer of talent to being a producer of talent."<sup>40</sup>

have been promoted more than once. They're now managers who are hiring apprentices," says Al Crook, head of HR partners and apprenticeships for Zurich North America, which provides insurance solutions. "What else do you need to know?"<sup>31</sup>

Many industries also continue to struggle to create diverse talent pipelines, which harms their reputations and impacts their

ability to innovate and remain relevant. After widespread societal unrest in the U.S. in 2020, many companies amplified their DEI initiatives—including analyzing and revamping hiring practices. Ngozi Motilewa, head of the Skills First diversity talent initiative at biopharmaceutical manufacturer Merck, called the events of that year a "radical awakening for all corporate America" to help narrow opportunity and responsibility gaps.<sup>32</sup>





For companies across the country, that work is far from complete.<sup>33</sup> And apprenticeships are a powerful tool for companies like Merck (see box) and thousands of others to truly move the needle on DEI.

Aon, a global professional services firm, has been particularly vocal about the role apprenticeships can play in bringing more women, people of color, and those from less advantaged communities into high-growth professional roles.<sup>34</sup> It partnered with Accenture and Zurich insurance in 2017 to create the Chicago Apprentice Network to spread the word to more companies and help them get their own programs off the ground. The network, which serves as a kind of employer-led intermediary, has since expanded to six other cities, and Aon has

committed \$30 million to growing the network to 10,000 apprentices by 2030.<sup>35</sup>

And the federal government is putting muscle behind that kind of work, including last year launching the Apprenticeship Ambassador Initiative, a national network of more than 200 employers and other organizations that have signed on to create hundreds of new registered apprenticeships.<sup>36</sup>

“These results will increase our skilled workforce—including people in underrepresented communities, especially women, people of color, veterans, and people with disabilities—equipping them with good-paying, high-quality jobs and a pathway to the middle class,” Marty Walsh, then the U.S. secretary of labor, said at the launch.<sup>37</sup>

## High ROI

In addition to diversifying the workforce, apprenticeships also offer most companies a generous return on their investment. In 2016, the U.S. Department of Commerce and Case Western Reserve University published one of the nation's first comprehensive reports on the ROI of apprenticeships.<sup>41</sup> According to researchers:

The New Hampshire health system Dartmouth-Hitchcock spent \$59,700 per apprentice on its program for medical assistants. But it reduced overtime costs by \$48,000 per apprentice and increased revenue by \$7,000 per apprentice by being able to book more patients. The program's internal rate of return was "at least" 40%, paying for itself the first year.<sup>42</sup>

Siemens USA, which helps manufacturers digitize and automate, saw a 50% higher return rate for apprentices compared to off-the-street hires. Apprentices could also perform a larger variety of tasks, something researchers noted was "worth an amount similar to the cost of a worker's apprenticeship program."<sup>43</sup>

Hypertherm, a New Hampshire-based manufacturer of plasma, laser, and waterjet

cutting systems, spent \$2 million on equipment ahead of its apprenticeship program for machinists. The program, however, paid for itself in productivity gains,

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***Siemens USA saw a 50 percent higher return rate for apprentices compared to off-the-street hires.***

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saving the company \$1.6 million a year.<sup>44</sup>

And they also reap benefits in areas that are more difficult to quantify, including increased innovation, lower turnover, and a decreased need for supervision.<sup>45</sup>

# Barriers to Growth

In October 2020, aerospace and defense-industry manufacturer Raytheon Technologies kicked off the country's first industry-recognized apprenticeship program, known as IRAP.<sup>46</sup> Under IRAP, companies and trade organizations could create their own programs without having to meet the U.S. Department of Labor's stringent requirements for registered apprenticeships.<sup>47</sup>

The Trump administration hailed the move as a major milestone in expanding apprenticeships and creating more job opportunities for American workers.<sup>48</sup>

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***“You’re building out your talent supply for months and years ahead. You’re investing in your workforce.”***

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Two years later, the Biden administration eliminated the program, calling IRAPs duplicative and lower-quality than the program's predecessor.<sup>49</sup>

IRAP may be gone, but the problems the program aimed to solve and the debate about how to [modernize American apprenticeships](#) are very much alive.<sup>50</sup>

Part of the challenge is that at every step of the process—design, approval, recruitment,

implementation, learner support—launching apprenticeships in the U.S. can feel cumbersome to employers.

First of all, registering apprenticeship programs requires companies to navigate layers of federal laws and labor regulations. Those requirements are intended to ensure quality and safety standards that benefit both employers and workers—and sorting them out can take considerable time and expertise, says Krysti Specht, director at the Center for Apprenticeship & Work-Based Learning for Jobs for the Future (JFF), a nonprofit focused on workforce issues. Organizations that manage apprenticeship programs, for example, spend untold hours answering questions from employers, apprenticeship candidates, regional labor organizations, and others. Finding the answers often requires direct contact with the Labor Department or state entities, says Specht.<sup>51</sup>

Additionally, some companies are only willing to invest in employment training programs that promise immediate results, in this case a more stable workforce or a positive ROI. Those things happen, but sometimes only after the first cohort of apprentices has graduated and is officially on the job. Specht said that not every business can absorb that level of uncertainty.

“You’re playing the long game with apprenticeship,” she says. “You’re building out your talent supply for months and years ahead. You’re investing in your workforce.”



One challenge companies fear the most—competitors “poaching” trained apprentices after the program ends—isn’t as prevalent as they assume. A [study](#) that reviewed apprenticeship programs at 13 businesses and apprenticeship intermediaries found that poaching didn’t significantly impact ROI, particularly among companies that carefully considered compensation and participated in employment consortia.<sup>52</sup>

Employers and workforce experts also say

there’s widespread anecdotal evidence showing that apprentices often end up as a company’s most devoted employees, something that’s hard to quantify but easy to recognize.

“When [apprentices] finish, they have an incredible sense of loyalty to a company that invested in them, and they believe in that product and the company, because that’s where they grew into themselves in this particular role and occupation,” says Specht.



# A Utility Player in the Middle

In countries with robust, mature apprenticeship sectors, companies often rely on partners to support them when they start or expand apprenticeship programs. France, Australia, India, and Switzerland have flourishing<sup>54</sup> markets of intermediaries<sup>55</sup> that provide technical assistance and, in many cases, ongoing operational support. France, for instance, has a well-established system of apprenticeship training centers that supports local employers, public agencies, chambers of commerce, and unions.<sup>56</sup>

That kind of third-party support is critical, even when government systems are more streamlined than those in the United States, says Robert Lerman, a fellow in the Center on Labor, Human Services, and Population at the Urban Institute and board chairman of Apprenticeships for America. “Asking a company to embrace apprenticeship is asking them to do something different, and that’s a big lift,” he says. “Look, we have staffing companies for a reason.”<sup>57</sup>

But **apprenticeship intermediaries are especially critical in the U.S.**, where apprenticeships have been slower to gain traction in the workforce, especially when compared to European nations. In recent years, however, as the number of American apprenticeships has grown, so too has the number of intermediaries—including for-profits, nonprofits, school districts and colleges, labor organizations, and others.

A study by the International Labour

Organization noted the role apprenticeship intermediaries play in navigating governmental bureaucracies, recruiting apprentices (particularly those from disadvantaged groups), and improving retention and completion rates.<sup>58</sup> The study concluded that intermediaries “should be regarded as potentially major contributors to apprenticeship systems.”

**JFF, which is itself an intermediary, highlights seven areas in which third parties can support companies**, including easing administrative burdens, serving as liaisons with community colleges, and monitoring apprentices’ progress through site visits.<sup>59</sup> That’s especially beneficial to small and midsize companies, which often lack the resources and knowledge to successfully navigate that world.

“When you find an intermediary that you like and that you trust, it saves you staff time,” says JFF’s Specht.<sup>60</sup>

## Apprenticeship Intermediaries and ROI

There’s strong evidence showing that apprenticeship intermediaries can boost returns for companies that invest in apprenticeship programs.

For example, the study by the Commerce Department and Case Western Reserve included a cost-benefit analysis of the services provided by LaunchCode, a nonprofit tech apprenticeship intermediary.<sup>61</sup> The



## ZURICH NORTH AMERICA Rethinking how to manage apprentices

Zurich North America, a Swiss provider of commercial insurance and risk management services, began offering apprenticeships for underwriting and claims associates in 2016. By 2020, 118 apprentices had been hired into the two-year program, and the company has since broadened it to most job functions—from finance and premium auditing to statistical reporting and legal services.

Like many companies that develop such programs, Zurich NA's goal was twofold: expanding its own talent pool while also offering opportunities to populations traditionally excluded from white-collar jobs, including veterans, career switchers, and recent high school graduates.

Al Crook, the company's head of HR partners and apprenticeships, says leaders quickly discovered something they hadn't anticipated: "How do we onboard someone who in August comes to work for us but in May was at their prom?"<sup>53</sup>

The question highlights one of the challenges companies face when they diversify their workforces. Case in point: few teenagers, who account for just a portion of Zurich NA's apprentices, have worked in a professional setting, which means managers must start training from square one. Older workers, such as veterans or those re-entering the workforce after long absences, may be well versed in corporate life but are in "deep learning mode" about insurance, he says.

The challenge prompted the company to examine how it integrates apprentices into the workflow and company culture, says Crook.

"We can't treat them like every other onboarded employee," he says.

Zurich NA also had to train managers how to direct what are essentially part-time employees. Apprentices spend two full days a week in classes at Harper College in suburban Chicago and, as of 2020, Borough of Manhattan Community College in New York. According to Crook, managers were more accustomed to workers with the skills and knowledge to get to work right away.

The retraining process created more nimble managers, an unexpected yet welcome side benefit of the apprenticeship process.

"We've never studied it, but there is a correlation between our best managers and how successful apprentices are," he says. "The right manager will make this program successful."

analysis found that the out-of-pocket costs for employers using LaunchCode are about \$900 less than when making off-the-street hires.

That return doesn't even take into account any of the potential long-term benefits that companies may see from reduced turnover or long-term differences in productivity of off-the-street hires and apprentices. And it doesn't reflect the time and resources

that companies save when someone else navigates the registration process, creates courses, and recruits apprentices.

Merck, for example, was able to **launch its apprenticeship program within three weeks of finalizing the apprenticeship job descriptions** because of the strategy and operations support provided by OpenClassrooms. And the applicant pool of 700 exceeded expectations.

# Conclusion

Solving the talent shortage that's currently confounding businesses, combined with the need for more appropriately trained and skilled workers, will be no small feat. It will require companies, higher education institutions, governments, and other partners to redouble their efforts—as well as their investments.

Apprenticeships are one of the most practical solutions to this dilemma. They not only provide workers with a way to earn money while they're learning vital skills, but they give employers a low-risk way to diversify their workforces while in many cases seeing a positive ROI.

Apprenticeship intermediaries are a way for companies to accelerate these opportunities, and to do so in a way that's more efficient and cost-effective. By doing the heavy lifting—registering a program from scratch, building relationships with academic partners, monitoring the progress of a program and individual apprentices—they free business leaders to focus on other critical aspects of their operations. And ultimately, intermediaries demystify the apprenticeship process, giving employers an increased sense of confidence as they venture into the unknown.

Says Merck's Motilewa, "We do not have all the answers, but to employers I would say, 'Jump in, give it a try.' We are learning as we go. It has brought some fantastic outcomes."<sup>62</sup>

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We are learning as  
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