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How Gen AI Could Transform Learning and Development

A recent experiment by the BCG Henderson Institute suggests that gen AI-powered tutoring can be as effective as—and more engaging than—traditional interventions to build human skills. *by Sagar Goel, Shubhankar Sohoni, and Lisa Krayer*

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Companies investing millions in generative AI may soon find themselves stalled—not by the technology's limits, but by their people's. As generative AI becomes more ubiquitous, a paradox has emerged: The more deeply we integrate the technology into our workflows, the more indispensable human skills become. These "soft" skills—like problem

framing, collaboration, and creativity—encompass the uniquely human abilities and behaviors that will enable people to make the most working alongside gen AI.

Unfortunately, many companies are confronting a human skills gap. For example, a 2024 study by the Society for Human Resource Management found that less than one-third of employers believe recent graduates are equipped with the critical thinking skills they'll need in the workplace.

The solution seems simple: We'll just teach them. But today's traditional training methods won't be enough. To start, only about 35% of employers provide human skills development opportunities to their employees, often because of a lack of trainers or appropriate training programs. And even those that do offer programs tend to fall short—they are too generic or too disconnected from day-to-day work and, most importantly, lack reach across all the employee base.

But what if each employee had a personal coach who understood their role, the challenges they face in driving high performance, and their unique learning needs—and was available on-demand at fraction of what companies spend on learning and development (L&D) today? This is where gen AI becomes an enabler, by providing personalized human skills training at scale.

Evidence from a recent experiment by the BCG Henderson Institute suggests that gen AI-powered tutoring can be as effective—and more engaging—than traditional interventions to build human skills, such as classroom training.

In Pursuit of Personalization and Efficiency, at Scale

To test the impact of a gen AI tutor, we ran an experiment involving participants of BCG RISE Singapore—a reskilling program that helps

mid-career professionals transition to digital roles. The experiment was conducted in November 2024 to December 2024. A total of 139 participants agreed to participate. We captured pre- and post-lesson competency assessments, self-reported engagement scores, qualitative feedback, and conducted deep dive interviews with select learners.

In this experiment, we focused on "problem framing," the first step in the problem-solving process, as a proxy for human skills. In the age of AI, problem framing—the ability to clearly structure and articulate the problem to be addressed—will be a critical human skill to take full advantage of gen AI's ability to conduct the right downstream analysis and provide relevant recommendations.

Our control group attended a virtual classroom session taught by a seasoned trainer, and our test group interacted one-to-one with a gen AI tutor. When we assessed and compared learning gains, we found the gen AI tutor delivered results that were on par with the classroom session, but with significant improvements in terms of personalization and efficiency. Specifically, we learned four key things:

First, today's skill building programs can't provide personalized learning at scale. But the gen AI tutor—because it can connect with enterprise talent management systems and access each employee's work context, performance reviews, strengths, areas of development, and learning needs—can deliver customized training plans that continuously adapt to the employees' evolving proficiency levels.

In our experiment, we found that the gen AI tutor delivered a significantly better personalized learning experience. It performed 32% better on "personalization to individual job profiles" and 17% better on "feedback relevance" compared to the classroom-based program as rated by participants. In addition, learners using the gen AI tutor felt

that the personalization directly enhanced their skill building—with a 15% higher rating for the gen AI tutor compared to classroom training on this dimension.

Second, research has shown that self-reflection is the foundation for building human skills. Fostering this habit takes coaching-style conversations that are hard to conduct in a big group classroom setting.

However, the gen AI tutor provided the learners with an opportunity to reflect at key milestones in their learning journey on their experience, challenges, and opportunities to apply these skills in their day-to-day work. In fact, nearly half (47%) of the participants engaged in reflective conversation with the gen AI tutor; some even had rich, personal discussions expressing feelings of being overwhelmed. Such open dialogue allows the gen AI tutor and the learner to work together to chart a more personalized and high impact journey.

Third, employees' ability to carve out adequate time is one of the greatest barriers to workplace learning. Employees demand efficient learning that is on-demand—which is where a gen AI tutor can be effective.

In our experiment, the gen AI tutor helped learners to self-pace their learning—and they spent roughly 23% less time to complete the training program as compared to their classroom peers to achieve similar learning gains

Overall, 53% of participants expressed a preference to use a gen AI tutor over classroom learning after just one interaction. However, there were some important nuances. Participants noted that they would prefer a gen AI tutor over a human tutor in situations where learning needed continuous validation and the ability to practice without judgement.

But they would continue to prefer human tutors when dealing with complex topics, such as learning teaming and collaboration skills in peer group setting.

Finally, building human skills often require learners to be vulnerable, which can be especially challenging for those starting at a lower competency level. A classroom provides a safe space to experiment with human skills building. But our experiment showed that the gen AI tutor can be as effective as the classroom in terms of learning gains for learners with lower competency (32% higher gains for this segment of learners between pre- and post-experiment competency assessment).

Putting the Gen AI Tutor to Work Enterprise-Wide

We see several opportunities where a gen AI tutor could uplift human capabilities for large cohorts at scale—and generate significant value for organizations:

Supercharge the frontline. Frontline workers—sales representatives, service agents, field technicians—make up about 70% of the U.S. workforce and are pivotal in delivering operational outcomes and customer experience. However, the human skills gap among these workers—which are essential for critical tasks such as creating compelling sales pitches, managing challenging conversations, and addressing customer concerns—persists, leading to lost revenues.

Furthermore, without proper training solutions, employee engagement and morale are also at risk. This challenge is further exacerbated for frontline supervisors who lack the critical soft skills to manage and lead their teams.

The good news is that frontline employees want to learn; one study found that more than 9 out of 10 frontline workers want to engage

in continuous learning at work, and they are ambitious about career advancement. However, traditional frontline enablement measures, like episodic training sessions and standard playbooks, are ineffective and are disjointed from daily workflows.

A gen AI tutor can revolutionize this model by delivering personalized, in-the-moment coaching, real-time feedback, and simulation-based learning tailored to each frontline employee's unique context. The gen AI tutor's attribution engine can assess what helps high-performing frontline employees succeed, and then help all employees embrace those high performing skills and work routines adapted to their context, with measurable outcomes.

Embed culture change. Culture is the critical enabler—or the silent killer—of business transformation initiatives. A BCG study revealed that the proportion of companies reporting strong financial performance from digital transformation was five times greater for those who focused on building a strong organization culture than those who neglected it.

In traditional culture transformation programs, organizations take serious effort to provide intensive coaching to senior leaders but expect them to cascade new culture behaviors to rest of the organization. However, the broader workforce typically receives minimal support beyond one-off workshops and corporate communications, leading to limited adoption of desired cultural changes even if the culture program has been thoughtfully designed and has senior management buy-in.

Gen AI offers a scalable solution by providing personalized coaching that has an organization wide reach at a fraction of the cost. A gen AI culture coach can assess an employee's role, action, team dynamics, change readiness, and communication style to provide personalized

coaching conversations, regular nudges, and, for middle management, leadership advisory on how best to support their teams.

Build AI competence. Gen AI has the potential to unlock significant business value—driving 10% to 20% productivity gains in everyday tasks and 30% to 50% efficiency enhancement in critical functions. However, even in the most mature companies, the organization-wide adoption remains low; and only 6% of companies have managed to train more than 25% of their workforce on gen AI tools as of early 2024.

As gen AI tools become more embedded in daily workflows, the real value is not just in adoption—it's also in competence. To collaborate well with gen AI, employees require human skills of a different dimension:

- **Problem framing**: Querying gen AI tools to arrive at desired results quickly using clear, well-structured prompts.
- **Collaborative problem solving**: Knowing when to trust the gen AI tool, when to challenge it, and how to interpret its output critically.
- **AI-enabled decision-making**: Combining gen AI powered insights with human judgement to aid decision-making.

Traditional training methods, like workshops and e-learnings, are not well equipped to build these nuanced, evolving skills. We've found that employees struggle to translate the current gen AI 101 adoption trainings to real world impact without contextual learning, experimentation, and feedback loops.

Gen AI tutors can guide this journey—and help manage this change in daily workflow—by allowing employees to experiment safely, improve with feedback, build confidence, and implement new habits. At our own company, we are piloting an internal learning tool that resides on gen AI

platforms helping employees improve their prompting skills, discover role-specific high value use cases, and practice in a safe environment.

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To realize the promise of gen AI, companies must invest not just in tools—but in the people who will use them. Ironically, the best way to teach the most human of skills may come from machines themselves. If the first wave of gen AI disrupted task execution, the second wave will transform how humans learn to lead, collaborate, and think.

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