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Build Resilient IT Talent: The Agile Learning Method of Progressive Skills Development

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Initiatives: CIO Leadership of Culture and People

The unpredictable nature of work is changing how we address skills development. CIOs need to think beyond current job-related skills and upskill employees holistically for a future-ready workforce. Adopting progressive layering of skills builds well-rounded and resilient IT employees.

Overview

Key Findings

- Eighty-four percent of CIOs and IT leaders surveyed in the 2023 Gartner Resilient Workforce Model of the Future Survey are reskilling current employees to ensure they have the right skills to execute digital strategies.
- Only 44% of IT employees received information from their organization about how to develop skills within their role. This creates an opportunity to provide employees with guidance on which skills to develop.
- Sixty-one percent of IT employees expect their organization to offer skills development opportunities in the quickly changing skills landscape.

Recommendations

CIOs seeking to implement agile learning strategies to future-proof the technology workforce should:

- Ensure IT employees have the foundational skills to support performance by partnering with HR and IT leaders to define the skills employees need to be successful at the enterprise.
- Evolve role-specific skills to improve employees' performance amid technology and work shifts by continuously assessing the proficiency of current skills.

- Develop new skills that build a future-ready IT workforce able to deliver differentiating IT and business capabilities and strategic change by aligning these new skills with the strategic workforce plan.

Introduction

Many CIOs and IT leaders are realizing the importance of improving the skills of their current IT workforce to address gaps in expertise. In fact, 84% of those surveyed in the 2023 Gartner Resilient Workforce Model of the Future Survey stated that they plan to reskill their existing employees to increase the number of qualified technology professionals available to implement digital strategies. ¹ This demand can create a temptation to myopically focus on the latest hot skills. A further challenge is that only 44% of IT employees have received guidance from their organization on developing necessary skills. ² CIOs should be more intentional about skills development to ensure that employees have the skills to thrive and the enterprise has the skills to execute strategic change.

However, not all skills serve one purpose. Some skills are foundational and support the enterprise, such as critical thinking, continuous learning and business acumen. Other skills are specific to the roles and jobs within the IT function. Then there are skills that are emerging or new and have not yet been adopted by employees, but are crucial for the future success of the enterprise and its employees. This research provides CIOs with a framework on how to adopt a skills-based, progressive layering approach that develops more well-rounded and resilient employees.

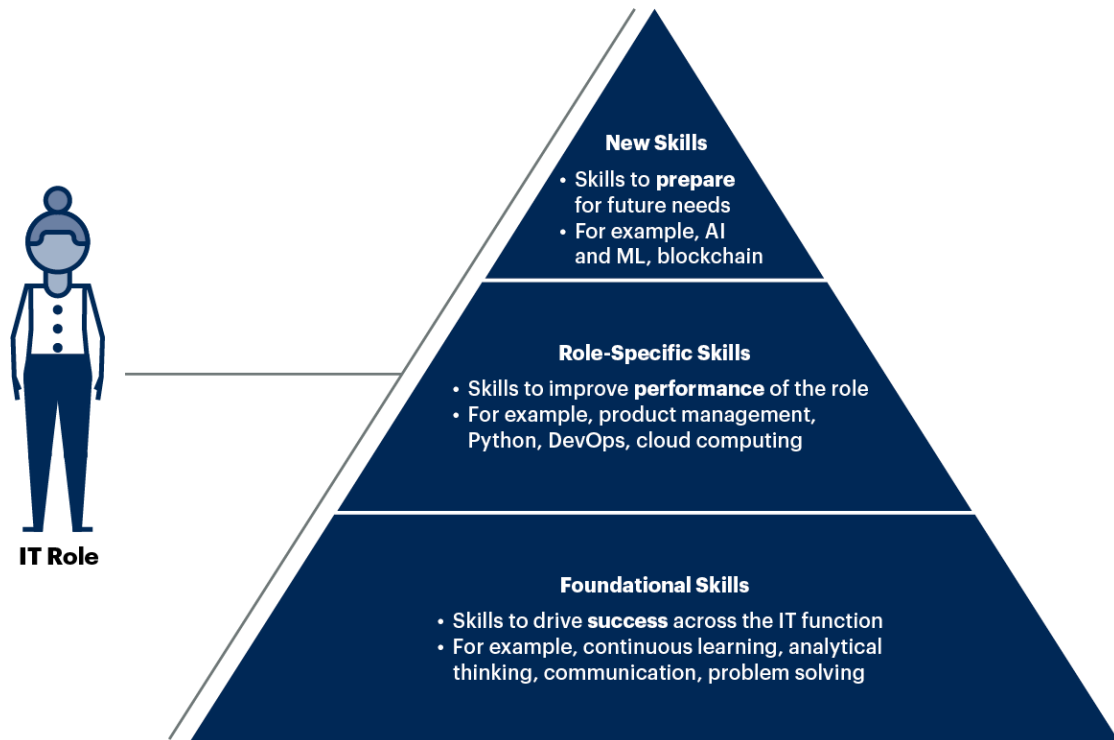
Progressive Layering

People need enduring “skills for life,” foundational skills for a career path, and skills in the latest techniques in their field. Skills in lower, slower layers underpin upskilling in higher, faster-moving layers. Learning to learn is a bedrock skill for life.

Progressive layering is a principle within Gartner’s Agile Learning Manifesto designed to ensure employees are well-rounded with the necessary skills for today and the future. It also underpins CIOs’ ability to foster a continuous agile learning culture that delivers an IT workforce with the skills needed to achieve business outcomes. The model categorizes skills into foundational, role-specific, and new skills for clarity and transparency (see Figure 1).

Figure 1: Use Progressive Layering to Build Well-Rounded and Future-Ready Employees

Use Progressive Layering to Build Well-Rounded and Future-Ready Employees



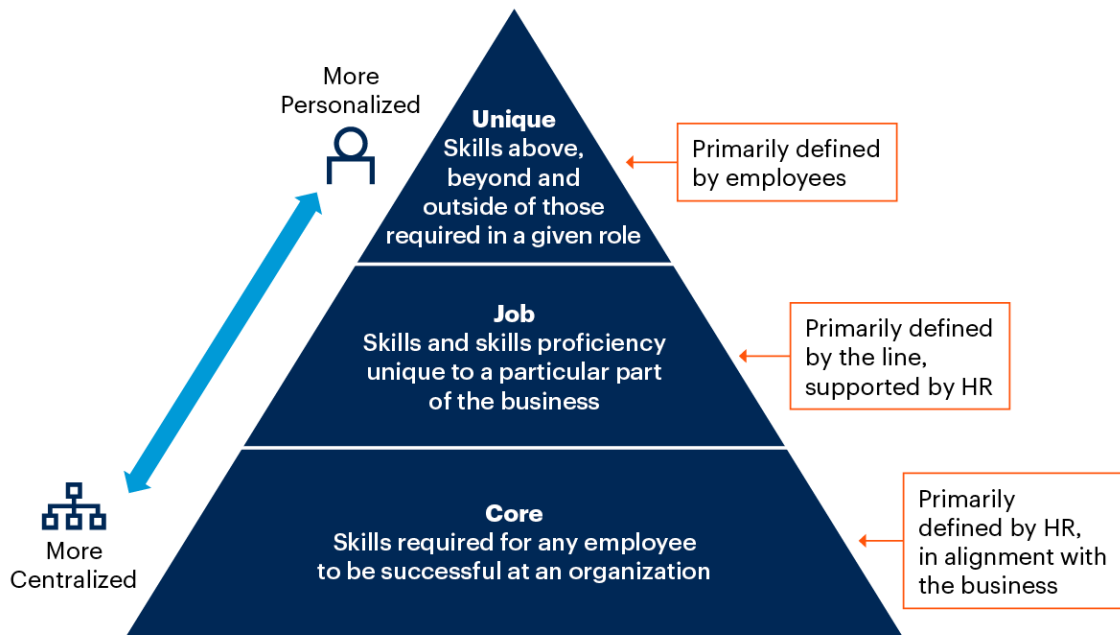
Source: Gartner
ML = machine learning
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Gartner.

To supply the business with the right skills to solve business challenges in an agile way, Workday created a similar framework that organizes skills into three categories – core skills, job skills and unique skills. These categories capture the complete skill set of each employee and the workforce as a whole (see Figure 2).

Figure 2: Workday's Simplified Organizing Principle for Skills

Workday's Simplified Organizing Principle for Skills



Source: Adapted From Workday
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Similar to Gartner’s framework, this “layering” approach helps employees use common and clearly defined language to have skills conversations. In Workday’s model, employees define unique skills, making learning more personalized. This approach allows Workday to organize a skills profile at the individual level and organize its central database of skills.

Analysis

Define Foundational Skills to Support Employee Performance

The progressive layering model identifies skills that reside in three layers, with foundational skills acting as the base for the others. Foundational skills define *how* people get their jobs done:

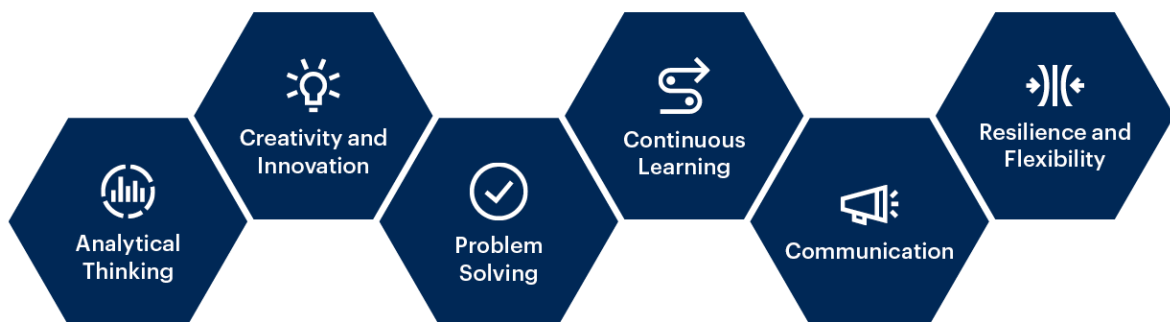
- Foundational skills underpin well-rounded and high-performing employees across all IT jobs and roles.
- The half-life of these skills is longer, many spanning an entire career of an individual, while others may be emphasized through a particular strategy cycle.

- When employees lack these skills, their overall performance and ability to build and apply skills at higher levels are affected.

CIOs should collaborate with HR and IT leaders to identify foundational skills that are critical for the success of the organization's strategic direction. For example, to meet digital demands, employees should develop foundational skills to adapt to rapid change (see Figure 3).

Figure 3: Examples of Foundational Skills

Examples of Foundational Skills



Source: Gartner
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Evolve Role-Specific Skills to Keep Pace With Work Shifts

Role-specific skills empower IT employees to execute their jobs at a high-performing level and to deliver high-quality business output from their work:

- These skills are directly applicable to employees' ability to successfully perform in their roles.
- Roles and required skills are determined by the tasks and workflows that they support.
- Role-specific skills should evolve with the pace of technology and work disruption.

Table 1: Illustrative Examples of Role-Specific Skills by IT Role

(Enlarged table in Appendix)

IT Role	Role-Specific Skills
Cloud infrastructure engineer	<ul style="list-style-type: none"> Cloud platforms (e.g., Amazon Web Services [AWS], Microsoft Azure, Google Cloud) Container management (e.g., Docker, Kubernetes, Rancher)
Cybersecurity engineer	<ul style="list-style-type: none"> Network security (e.g., VPN, firewall, network monitoring) Scripting language (e.g., Perl, Python, PowerShell)
Data analyst	<ul style="list-style-type: none"> Query languages (e.g., SQL) Data modeling
IT project manager	<ul style="list-style-type: none"> Project management (e.g., Project Management Institute, PRINCE2) Agile approaches and methodologies
Product manager	<ul style="list-style-type: none"> Product design Strategic planning and analysis
Product owner	<ul style="list-style-type: none"> Agile methodologies (e.g., Kanban, Scrum) Product management
Software engineer	<ul style="list-style-type: none"> Programming languages (e.g., Java, Python, C++) Continuous integration and continuous delivery/continuous deployment (CI/CD)
Solutions architect	<ul style="list-style-type: none"> Back-end development languages (e.g., Java, Go and Python) Database technologies (e.g., MySQL, MongoDB) IT service management (ITSM) and ITIL
System administrator	<ul style="list-style-type: none"> Backup and disaster recovery Network services (e.g., Internet Protocol [IP], DNS, Dynamic Host Configuration Protocol [DHCP])

Source: Gartner (November 2023)

Regularly assessing employees’ role-specific skills is vital to identifying gaps and upskilling opportunities in response to changing work demands. Use the Toolkit: Skills and Competency Assessment to Maximize Your IT Workforce Effectiveness to get started.

Develop Emerging Skills to Build a Future-Ready IT Workforce

New skills enable an enterprise to build capabilities that create a competitive advantage in their current or future business environment (see Table 2 for examples). These skills can also drive employee engagement and retention:

- These skills will often become role-specific or foundational skills after some time.

- Developing new skills can help employees achieve their career aspirations and talent mobility.
- Enterprises should diversify the skills identification process to predict new skills by using market intelligence analytics (for example, Lightcast, LinkedIn Talent Analytics, TalentNeuron) and requesting employee input. Employees often discover new approaches to doing their work.
- New skills should be aligned with and enable IT strategy and business strategy execution, often powering differentiating capabilities.

Table 2: Examples of New Skills by IT Functions

(Enlarged table in Appendix)

IT Function	Emerging Skills
Architecture	<ul style="list-style-type: none"> ■ Edge computing ■ Service mesh ■ AI and machine Learning
Data analysis	<ul style="list-style-type: none"> ■ Generative AI ■ Large language models (LLMs) ■ Data ethics
Product and platform management	<ul style="list-style-type: none"> ■ Objectives and key results (OKR) definition ■ Storytelling
Software engineering	<ul style="list-style-type: none"> ■ Augmented AI development ■ Micro frontend architecture ■ Service mesh
Security	<ul style="list-style-type: none"> ■ Twistlock ■ Internet of Things (IoT) security
Infrastructure and operations	<ul style="list-style-type: none"> ■ Kubernetes ■ Multicloud

Source: Gartner (November 2023)

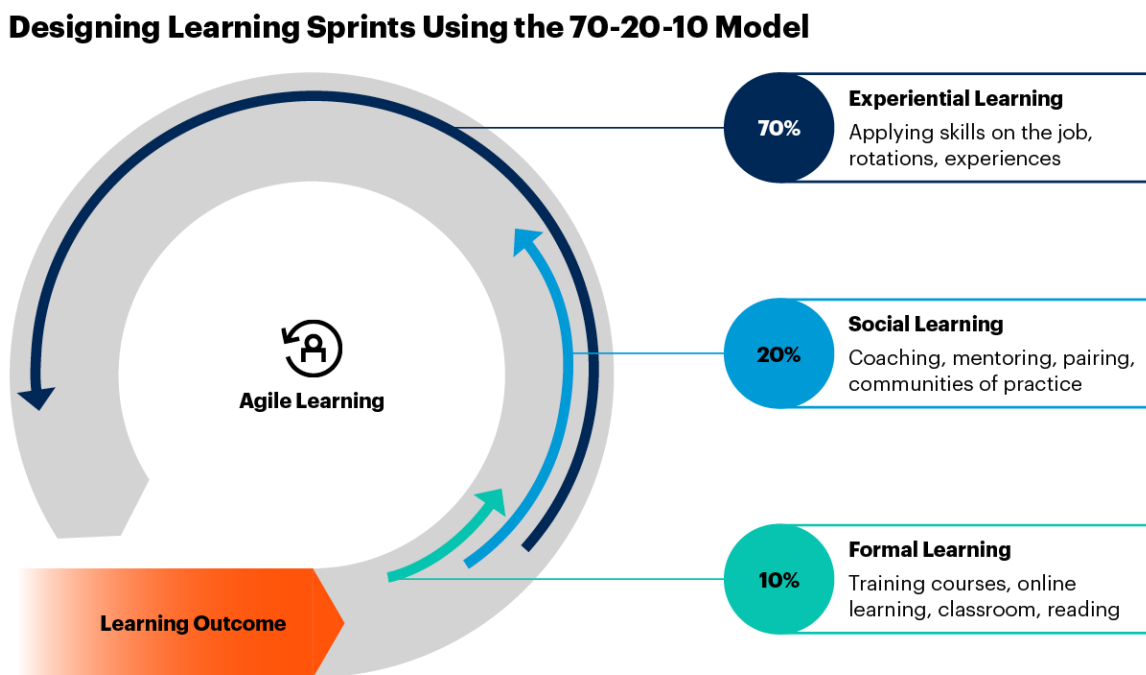
Take an Outcome-First Agile Learning Approach to Unlocking Full Employee Potential

When developing a learning initiative, CIOs should define a clear target outcome. For instance, it could be closing the automation skills gap that is needed to achieve a specific cost-savings target, or developing generative AI prompt engineering skills to enhance the productivity of software development teams by a certain amount.

Then CIOs and their teams should work back through the learning value delivery chain to address key success factors regarding how learning will impact that target outcome (see Figure 4). How will the learner(s) apply new skills in their work? What social learning, such as coaching or communities of practice, will be needed to support the learner(s)? And finally, what is the most appropriate learning content that can be readily applied? This “outcome first” approach focuses the learning on the highest priority skills needed, while informing the success metrics and the learning pathway design.

CIOs should empower IT managers to apply the 70-20-10 learning and development framework to create learning pathways for employees. An effective skills development approach requires a mix of learning interventions: learners develop 10% of their knowledge in formal training, 20% through coaching and social learning, and 70% through experience.

Figure 4: Designing Learning Sprints Using the 70-20-10 Model



Source: Gartner
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A popular learning approach is providing employees access to online learning platforms. Depending on the type of skill (technical or nontechnical), IT leaders should determine the appropriate learning platform to best develop that skill. Table 3 provides some sample courses by skills category.

Table 3: Examples of Courses by Learning Providers

Provider	Foundational	Role-Specific	Emerging
Coursera	Technical Support Fundamentals	Google IT Support Certificate	Prompt Engineering for ChatGPT
LinkedIn Learning	Interpersonal Communication	SQL Essential Training	Advanced Terraform
Pluralsight Skills	Tech fluency	Angular: Getting Started	AZ-900: Microsoft Azure Fundamentals
Skillssoft	Operational excellence	OWASP Top 10: Web Application Security	Intro to Generative AI Concepts
Udacity	Agile fluency	Self-Healing Architectures	Introduction to Deep Reinforcement Learning
Udemy for Business	Productivity and Time Management for the Overwhelmed	Mastering Linux: The Comprehensive Guide to the Command Line	Go: The Complete Developer's Guide (Golang)

Source: Gartner (November 2023)

Certain learning providers have progressed from solely offering content libraries, which consist of digital learning materials like videos, texts and audio files, to providing hands-on experiential learning opportunities by introducing labs and workspaces. These labs enable learners to apply and practice the skills they acquire right away, resulting in a more agile learning experience. See Market Guide for Digital Learning Content Providers for a full list and analysis of these providers.

The pathway should not stop here, however. CIOs should then ensure that learners can actually apply the new skills in their jobs to realize the target outcomes. This requires the social learning and experiential learning pathway steps. Indeed Gartner's Agile Learning study found that:

- Social learning where employees learn from and with each other resulted in 4.3 times the impact on learning achieving outcomes
- Experiential learning continuously in the flow of work resulted in 9.9 times the impact on learning outcomes, the highest impact ratio of any driver.

Social learning is typically via coaching or a community of practice that supports the experiential learning step as learners start applying the new skills directly in their jobs. Additional experiential learning techniques include paired programming, hackathons and job rotations.

Case in Point: Shifting From Projects to Products (P&G)



P&G's talent strategy to support the move from projects to products created an environment of continuous learning where learning goals are outcome-driven, aligned to enterprise and product outcomes. Then managers design employee workloads and capacity in a way that allows on-the-job learning, treating learning as work. They ensure that only about 30% of IT staff capacity is dedicated to work that they can perform with the skills they already possess. Five percent to 20% of employee capacity is dedicated to collective, team-based learning depending on their products' needs. Employees use the rest of their time to learn from experienced staff by pairing with them on tasks such as coding, feature definition and funding discussions. Experienced staff, not just people managers, have clear metrics such as the number of skills gaps closed to build accountability for coaching others, using actual work within product teams. However, the time for coaching is included in their workloads and capacity to enable upskilling, without sacrificing product and enterprise outcomes or burning staff out from coaching responsibilities in addition to day-to-day work (see CaseStudy: Talent Strategy for CIOs Shifting From Projects to Products).

Evidence

2023 Gartner Employee Perspectives on the Future of Work Survey. This survey was conducted to understand employee expectations and beliefs (both concerns and/or hopes) regarding various future of work trends. Respondents were also asked a series of questions relating to current work trends and major future of work trends. The research was conducted online from 29 May through 19 June 2023 among 3,500 respondents with representation from various geographies, industries and functions. The survey was designed and developed by Gartner's HR Practice research team.

¹ **2023 Gartner Resilient Workforce Model of the Future Survey.** This survey was conducted online from 11 through 25 April 2023 to understand the adoption of unconventional approaches to address the talent shortage and build a more resilient workforce. Fifty-six CIOs and IT leaders who were members of Gartner's Research Circle, a Gartner-managed panel, participated. Members from North America (n = 29), EMEA (n = 16), Asia/Pacific (n = 6) and Latin America (n = 5) responded to the survey. Disclaimer: Results of this survey do not represent global findings or the market as a whole, but reflect the sentiments of the respondents and companies surveyed.

² **2023 Gartner Modern Employee Experience and Manager Development Survey.** This study was conducted for employees who have participated in leadership development programs, managers and leaders to understand what kind of support and development most impacts their engagement, retention and career growth. This study helped us in pressure-testing/challenging HR and senior leader assumptions about the types of investments that will most positively impact high potential (HIPO) retention and leadership pipeline/bench strength. It has informed us about the creation of multiple workstreams on effective methods to develop leaders at different levels. The research was conducted online during May and June 2023 among 3,493 respondents from Asia/Pacific (Australia, China, India, Singapore, New Zealand), EMEA (France, Germany, South Africa, U.K.), Latin America (Argentina, Colombia, Mexico) and North America (the U.S. and Canada). Respondents were screened for employment status (permanent full-time employees only) and organization size (greater than 1000 employees).

Acronym Key and Glossary Terms

Skills	“Skills” are defined as individual abilities required to carry out mental operations or physical tasks with intended results. Skills are developed through education, training, practice and experience. They define “what” is performed within a job.
Competencies	“Competencies” are defined as a broad set of observable, measurable attributes – including skills and knowledge – that are predictive of effective performance in a given role or job. They are “how” the job gets done.

Disclaimer: The organization (or organizations) profiled in this research is (or are) provided for illustrative purposes only, and does (or do) not constitute an exhaustive list of examples in this field nor an endorsement by Gartner of the organization or its offerings.

Document Revision History

Agile Learning: Use Progressive Layering of Skills to Upskill and Develop Employees - 25 May 2021

Recommended by the Authors

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Product owner

- Agile methodologies (e.g., Kanban, Scrum)
- Product management

Software engineer

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- Continuous integration and continuous delivery/continuous deployment (CI/CD)

Solutions architect

- Back-end development languages (e.g., Java, Go and Python)
- Database technologies (e.g., MySQL, MongoDB)
- IT service management (ITSM) and ITIL

System administrator

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Udacity	Agile fluency	Self-Healing Architectures	Introduction to Deep Reinforcement Learning
Udemy for Business	Productivity and Time Management for the Overwhelmed	Mastering Linux: The Comprehensive Guide to the Command Line	Go: The Complete Developer's Guide (Golang)

Source: Gartner (November 2023)

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