

WHITE PAPER

The Future of Workforce Upskilling in Higher Education

Positioning Learning Tree International as the Strategic Partner of Choice

APRIL 2026

Published by Learning Tree International

www.learningtree.com

EXECUTIVE SUMMARY

Higher-education institutions face historic pressure to modernize the skills of their faculty and staff. Artificial intelligence (AI), automation, cybersecurity threats, and data-driven decision-making are transforming nearly every campus workflow, yet professional-development budgets remain constrained. In a fall 2025 survey conducted by EDUCAUSE in partnership with AIR, NACUBO, and CUPA-HR, 1,960 U.S. higher-education employees reported that 94 percent already use AI tools for work, yet only 54 percent are aware of their institution's AI-use policies [1]. The resulting governance gap threatens data privacy, security, and institutional agility while simultaneously increasing dependence on costly external contractors.

This white paper synthesizes global survey data, federal frameworks, and proven case studies—including the Judicial Council of California's four-tier Power BI rollout (132 percent knowledge gain; 97 percent positive rating) [2], and a blended-learning customer-service program that produced 89 percent behavioral-change confirmation [3]. It proposes a role-based, standards-aligned, and blended-learning playbook that higher-education leaders can adopt today.

Learning Tree International offers a turnkey pathway: skills-gap diagnostics, curriculum mapped to the NIST NICE Framework, instructor-led virtual labs, micro-credentials, and post-training analytics. With more than 50 years of experience and 3.5 million professionals trained worldwide, Learning Tree enables institutions to reduce contractor costs, improve compliance, raise student-outcome metrics, and build the internal talent pipelines required to remain competitive through 2030 and beyond [4].



1. THE WORKFORCE-TRANSFORMATION IMPERATIVE

1.1 The Accelerating Skills Gap

Technological change now outpaces traditional three- to five-year professional-development cycles. As of 2025, only about 40 percent of U.S. colleges and universities had established formal AI-use policies, leaving the majority of institutions without clear governance frameworks [5]. Meanwhile, 63 percent of faculty surveyed in early 2026 reported that recent graduates were not well prepared to use AI effectively in the workplace [6]. The gap extends well beyond AI: a National Skills Coalition analysis of more than 43 million U.S. job postings found that 92 percent of positions require digital literacy, yet nearly a third of the workforce has little to no digital skills proficiency [7].

Demand for analytics, cloud, and cybersecurity expertise now reaches well beyond central IT. Front-office staff, academic advisers, and enrollment managers increasingly require dashboard literacy and data-ethics fluency to meet enrollment and completion targets.

Competitive pressure is also intensifying. EDUCAUSE's 2024 IT Leadership Workforce study found that retaining skilled technology staff remains one of the top challenges facing higher-education CIOs, with private-sector compensation and credentialing pathways drawing talent away from campuses [8].

1.2 The Cost of Inaction

Contractor dependency: Institutions that lack in-house technical expertise increasingly rely on temporary specialists, often consuming a disproportionate share of already-constrained IT budgets. This pattern mirrors the pre-reskilling dynamics seen in large enterprises where internal upskilling eventually proved more sustainable than ongoing contractor reliance.

Knowledge drain: External vendors rarely transfer tacit institutional knowledge, leading to brittle implementations of learning-management-system or CRM upgrades that become difficult to maintain long-term.

Engagement risk: When professional development lags market expectations, retention suffers. CU-PA-HR's 2025 Higher Education Employee Retention Survey found that opportunities for growth and development remain among the top factors influencing whether employees stay at or leave their institutions [9].

1.3 Purpose and Scope

This paper equips provosts, CIOs, CHROs, and department heads with a research-grounded, vendor-ready blueprint to:

- Close priority skills gaps in data literacy, cybersecurity resilience, and AI governance.
- Adopt role-based competency frameworks such as NIST NICE and Canada's Cyber Security Skills Framework [10].
- Deploy blended and immersive learning that meets Level 3 and Level 4 Kirkpatrick evaluation thresholds for behavioral change and organizational impact.

2. MAPPING THE DIGITAL SKILLS GAP

2.1 Critical Competencies

The most acute shortages in higher education cluster around data analytics (Power BI, Tableau, SQL), cloud platforms (AWS, Azure), cybersecurity operations (incident response, zero-trust architecture), and project leadership. A 2026 Digital Education Council survey of more than 30,000 respondents across 29 Latin American institutions found that while 79 percent of faculty already use AI, only 19 percent employ it for the feedback and assessment activities that students report wanting most [11].

2.2 Root Causes

- **Budget fragmentation:** Department-level professional-development budgets are often siloed and diverted to conference travel rather than structured upskilling.
- **Cultural inertia:** Faculty frequently view technology upskilling as optional rather than a strategic mandate, particularly at institutions without visible leadership commitment.
- **Generational spread:** A bimodal workforce of late-career tenured faculty and early-career staff exhibits widely different levels of baseline digital fluency, requiring differentiated training pathways.

2.3 Performance Impact

Institutions that fail to operationalize dashboarding, AI-assisted advising, or cybersecurity monitoring delay critical student interventions, contributing to enrollment melt and attrition. In contrast, institutions and programs that invest in targeted, technology-enhanced pedagogies are demonstrating measurable improvements in learning outcomes and operational efficiency—underscoring the value of structured digital-skills investment at scale.

3. STRATEGIC FRAMEWORKS FOR UPSKILLING

3.1 Role-Based Competency Development

The Judicial Council of California partnered with Learning Tree to deploy four customized Power BI training tracks—for Users, Designers, Administrators, and Developers—across nearly 1,000 court staff spanning 48 courts. Pre- and post-testing revealed a 132 percent aggregate knowledge gain; 97 percent of participants rated the experience positively [2]. Learning Tree has replicated this role-based structure for organizations across sectors, adapting capstone labs to institutional datasets and operational contexts.

3.2 Standardization via NIST NICE

The NICE Framework (NIST SP 800-181 Rev. 1) defines 52 work roles and associated knowledge, skills, and abilities (KSAs) for cybersecurity professionals. Academic programs that align curricula to NICE—such as integrated law-and-computer-science programs mapping KSAs across applied cyberattack scenarios—have demonstrated strong student performance outcomes [12]. The companion publication NIST SP 800-50 Rev. 1, released in September 2024, formalizes a life-cycle approach for Cybersecurity and Privacy Learning Programs, offering guidance on budgets, metrics, maturity levels, and behavioral-change evaluation [13]. Learning Tree’s cybersecurity catalog is pre-aligned to the NICE Framework and to Canada’s four-category Cyber Security Skills Framework, accelerating gap analysis and curriculum mapping [14] [10].

3.3 Blended Learning for Behavioral Change

Effective workforce upskilling requires more than knowledge transfer; it demands measurable behavioral change. Blended programs that combine self-paced online modules with live instructor-led workshops and individualized action plans consistently outperform single-modality approaches. In one documented engagement, a six-month blended program serving a globally distributed workforce produced 89 percent participant-confirmed behavioral change in client-facing interactions [3]. Learning Tree’s delivery model integrates this architecture with major learning management systems including Canvas and Brightspace, supporting SCORM, LTI, and xAPI standards [4].

3.4 Scalable Reskilling

Intensive reskilling sprints—combining pre-learning, instructor-led labs, and hands-on project work—can rapidly transition employees into new technical roles, reducing organizational dependence on external contractors. Higher-education analogs include migrating ERP super-users into low-code developers or retraining administrative staff as data analysts, approaches that preserve institutional knowledge while building internal capacity.

4. CASE STUDIES IN ACTION

Institution / Organization	Challenge	Learning Tree Solution	Outcomes	Key Lesson
Judicial Council of California	Nearly 1,000 employees across 48 courts needed data literacy for a Power BI rollout	Four-tier customized virtual Power BI curriculum (Users, Designers, Administrators, Developers)	132% knowledge gain; 97% positive rating [2]	Role-based tracks drive immediate, measurable ROI
Global Organization (Blended Program)	Globally distributed staff required customer-service excellence skills	Six-month blended program: self-paced modules, live workshops, individualized action plans	89% confirmed behavioral change [3]	Blended delivery scales effectively across geographies and time zones
“Empowering Your Institution” (Learning Tree Case Study)	Institution needed to up-skill workforce across multiple technical domains	Tailored training program with skills assessment and role-based learning paths	Measurable skill gains and improved operational capacity [4]	Customized, role-based approaches produce stronger outcomes than generic training

5. IMPLEMENTATION ROAD MAP FOR HIGHER-ED LEADERS

5.1 Skills-Gap Analysis

- Inventory roles against strategic priorities (student success, research computing, cyber-resilience).
- Deploy surveys and focus groups; EDUCAUSE templates can be imported into Qualtrics or similar tools.
- Benchmark against the NIST NICE work-role matrix and relevant salary data.

Learning Tree provides a skills assessment tool covering more than 350 topics, enabling institutions to generate actionable gap-analysis reports [15].

5.2 Building Cross-Functional Support

- Establish a steering committee co-led by the Provost and CIO.
- Nominate departmental champions and align release time for participation.
- Build the business case: quantify contractor costs avoided, grant-submission cycle-time improvements, and faculty workload reduction.

5.3 Designing Role-Specific Paths

Credentialing sequences—such as “AI-Aware,” “AI-Practitioner,” and “AI-Developer” tiers—create visible progression pathways. Learning Tree offers micro-credential programs including SAFe Micro-Credentials for Responsible AI, supporting structured badging aligned to industry-recognized frameworks [16]. When staff badges are visible to students, they reinforce a campus culture of continuous learning.

5.4 Selecting Delivery Partners

Evaluation criteria should include:

- Framework alignment (NICE, CEDEFOP, institutional accreditation standards).
- Evidence of Level 3/4 training impact (behavioral change and business outcomes).
- Customization capacity and LMS integration.

Learning Tree meets all three criteria: its catalog of more than 600 courses is modular, NICE-aligned, and available for academic branding on request [4][14].

5.5 Measuring Impact

Key metrics aligned with NIST SP 800-50 Rev. 1 guidance include: knowledge gains (pre/post assessment), skill-application rates, security-incident reduction, and cost per digital task [13]. Learning Tree’s analytics capabilities enable institutions to track training outcomes and connect them to operational performance indicators.

6. OVERCOMING COMMON BARRIERS

- **Budget:** Bundle departmental professional-development allocations and redirect contractor spend. Explore federal cyber-workforce grants tied to NICE compliance, such as the CyberCorps Scholarship for Service program.
- **Resistance:** Launch pilot cohorts with willing departments, publish quick-win stories, and publicize digital badges to build momentum.
- **Scalability:** Use LMS integrations for auto-enrollment and progress tracking. Learning Tree supports SCORM, LTI, and xAPI standards for seamless integration [4].
- **Behavioral durability:** Layer coaching and peer-learning communities to sustain behavior change beyond the initial training period.

7. TECHNOLOGY ENABLERS

- LMS integration with virtual labs (AWS, Azure Lab Services) for hands-on practice in sandboxed environments.
- Adaptive-learning analytics that map assessment data to personalized next modules, increasing engagement and completion rates.

- Digital badges anchored in open standards for verifiable, portable credentials. The European Centre for the Development of Vocational Training (CEDEFOP) continues to advance frameworks for the validation and recognition of digital credentials across EU member states [17].

8. FUTURE TRENDS

- **AI governance structures on campus:** Hub-and-spoke models that centralize AI policy while distributing implementation guidance to departments, reducing duplication and ensuring consistent governance.
- **Continuous-learning cultures:** Internal academies and talent-marketplace platforms that refresh skills on a quarterly cadence, enabling institutions to keep pace with technological change.
- **Cross-sector consortia:** Collaborative purchasing and shared course libraries among institutions can reduce per-seat training costs and expand access to specialized content.

9. CONCLUSION: ACT NOW TO BUILD A FUTURE-READY WORKFORCE

The evidence is clear: institutions that invest in structured, role-based upskilling realize measurable returns—higher student-success metrics, lower contractor spend, and stronger compliance postures. NIST, CEDEFOP, and national frameworks supply the standards, but execution requires a partner with proven cross-sector outcomes and the capacity to customize at scale.

Learning Tree International—with more than 50 years of experience, 3.5 million professionals trained, and a catalog of over 600 courses spanning AI, cybersecurity, cloud, data analytics, and leadership—stands ready with diagnostics, NICE-aligned curricula, blended delivery, and training analytics. Campuses that invest now will transform employees from passive technology users into adaptive innovators prepared to meet the next decade's disruptions.

Ready to begin? Contact Learning Tree to schedule a workforce skills assessment and receive a curated training roadmap. Visit learningtree.com or call 888-843-8733.

THE FUTURE OF WORKFORCE UPSKILLING IN HIGHER EDUCATION

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