

Trane and Workforce Development: Preparing for the AI Revolution

A chancellor and an industry leader offer a framework to modernize campus facilities in the era of smart technologies.

By Lee Lambert and Michael Hines

BUILDINGS ARE POWERFUL LEARNING ENVIRONMENTS, ALTHOUGH MOST PEOPLE DON'T THINK of them as much more than bricks and mortar. Buildings empower digital skills like AI, Internet of Things (IoT, a network of devices that communicate via the Internet), and data analytics. In the United States, buildings account for approximately 40% of energy use and carbon emissions. Boards of trustees and administrative leadership who strategically invest in the modernization of buildings will help benefit the institution by providing long-term energy savings, helping reduce environmental impact, and enhancing learning opportunities for the institution, stakeholders, and community.



Modernization can be supplemented by historic levels of federal, state, and local funding. In addition, by leveraging modernized buildings as real and relevant spaces, educators can create engaging, efficient learning experiences that prepare students for the digital world. Modernized facilities, energy-efficient designs, and collaborative spaces foster innovation and hands-on learning.

Smart Tech Makes the Most of Resources

Smart building technologies like IoT sensors and Building Management Systems (BMS) optimize building systems in real time. AI and machine learning predict equipment failures, improve energy consumption, and adjust lighting and temperature for comfort and efficiency. Data analytics help identify inefficiencies and best practices through continuous energy audits, performance dashboards, and benchmarking.

Integrating building data into curriculum, research projects, and hands-on learning with building management systems empowers students with practical experience. Sustainability initiatives, like improving renewable energy integration, further enhance the learning environment. Showcasing these initiatives attracts environmentally conscious students and faculty.

Federal Support for Modernization

Unprecedented federal and state funding allows for modernization and digital learning. Combining incentives created or expanded by the Inflation Reduction Act (IRA) with Energy Savings Performance Contracting (ESPC) helps pay for upgrades with future energy savings, providing a budget-neutral approach. The Section 48 Investment Tax Credit (ITC) incentivizes investment in renewable energy and energy-efficiency projects for schools. Combining ESPCs with ITC maximizes savings and funding, helping enable comprehensive energy-saving measures with long-term benefits.

The Role of Trustees

Trustees play a pivotal role in helping drive sustainability and energy efficiency initiatives. Their strategic vision, financial oversight, risk management, and stakeholder engagement aid in successful implementation and long-term benefits for the institution and community.

A Framework for Transforming College Infrastructures with AI

Trane, a leading innovator in the energy services industry, recognizes the transformative impact of artificial intelligence (AI) on the technician workforce. We have collaborated on a comprehensive workforce development framework designed to equip technicians with the skills and knowledge needed to navigate this evolving landscape.

Our framework emphasizes:

- **Enduring Soft Skills:** Strong communication, problem-solving, critical thinking, adaptability, teamwork, and collaboration skills

are essential as AI handles routine tasks, leaving humans to focus on complex interactions and decision-making.

- **Foundation in Technical Skills:** A solid foundation in electrical, mechanical, and computer applications remains crucial for interpreting AI-generated insights.
- **Advanced AI Skills:** Data entry, extraction, prompt engineering, and analytics will bridge the gap between humans and AI.
- **Lifelong Learning:** Continuous learning is vital due to the rapid pace of AI and other advanced technologies. Micro-learning modules, on-the-job training, coaching, mentoring, and professional development programs will foster a learning culture within organizations.
- **Customized and Personalized Education:** Technician roles require different skill sets, necessitating tailored training programs. AI-enabled tools will be crucial for personalization.
- **Collaboration with AI Experts:** Partnering with experts ensures education and training programs are up-to-date and incorporate best practices.
- **Change Management:** Robust change management strategies address disruption and employee resistance, leveraging transparency and open communication.
- **Measuring Impact:** Clear metrics track performance improvements, employee engagement, and adoption of AI tools, demonstrating the framework's value.

Additional considerations include addressing ethical concerns related to AI, establishing workplace learning communities, and incentivizing participation in upskilling programs.

This collaborative framework prepares the energy workforce for the AI revolution, driving enhanced efficiency, innovation, and customer satisfaction. By investing in employees' skill sets and fostering a culture of lifelong learning, employers can continually strive to have their workforce remain at the forefront of the industry, propelling it into a future defined by seamless human-AI collaboration.

Integrating digital learning with building upgrades, leveraging available funding, and embracing AI-driven workforce development are key strategies for educational institutions and industries alike. These approaches not only prepare the workforce for the future, but also create sustainable, efficient, and engaging environments that benefit everyone.



Lee Lambert, J.D. is chancellor of Foothill-De Anza Community College District.

Michael Hines is North America education energy services leader for Trane Technologies, a member of the ACCT Corporate Council.