

A full-page background image showing two construction workers in safety gear (hard hats, safety glasses, and high-visibility vests) standing at a wooden workbench on a construction site. They are looking down at a set of blueprints spread out on the table. The worker on the left is wearing a yellow hard hat and an orange safety vest, while the worker on the right is wearing a white hard hat and a yellow safety vest. In the background, there is a large construction site with a yellow excavator and a building under construction.

The Four Pillars of a Future-Ready Trades Program

How to build a flexible, scalable and funded infrastructure for today's workforce challenges.



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Introduction

Today, the U.S. is facing its biggest workforce realignment since the New Deal. AI, climate change and industrial growth are causing some fields to shrink while others grow rapidly.

In all 50 states, there's an acute shortage of skilled trade employees. There simply aren't enough electricians, plumbers or HVAC technicians to keep up with new construction, let alone enough tradespeople to maintain existing homes and infrastructure. Specialized roles in advanced manufacturing, solar installation and data center construction sit unfilled.

This moment calls for workforce realignment at scale, but our education systems aren't designed for scale. Therefore, our career-readiness programs for the trades are facing a decision. They can rethink and modernize the foundation of their training programs, or they can get left behind.

"The traditional cohort model that has been working in the trades is failing the students and industries it serves. States and institutions need to think about how to build with modularity and flexibility, and to embrace tech-enabled delivery."

Doug Donovan
Founder and CEO of
Interplay Learning





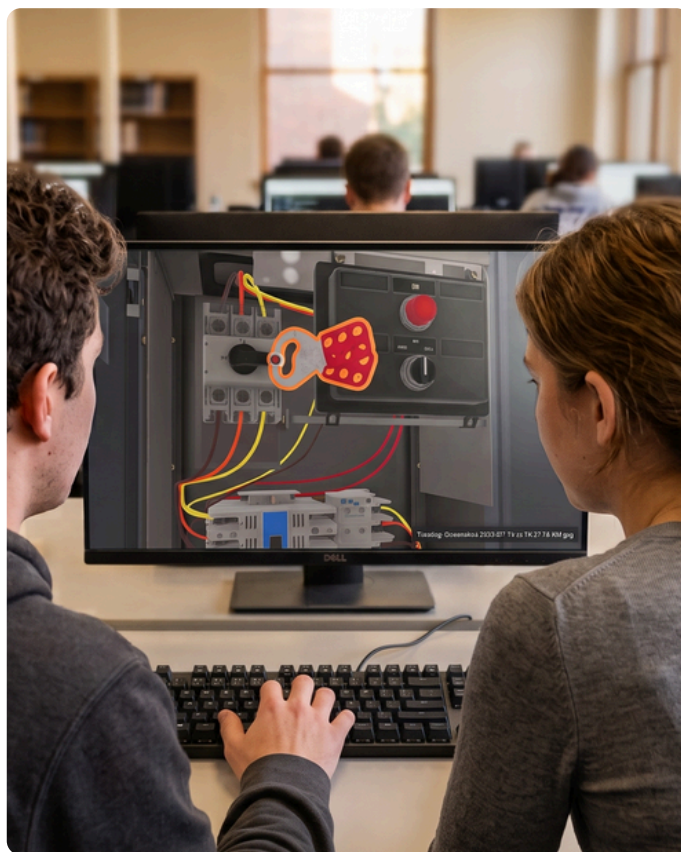
Shifting Mentalities from Physical to Digital Infrastructure

With technology now integral to learning and large-scale realignment needed, institutions need to shift from thinking in terms of physical infrastructure to digital infrastructure. This shift allows institutions to launch new programs, attract new students and adapt to industry changes without increasing costs.

Institutions that fail to adapt their thinking risk losing federal funding, partnerships, and students. Instead of investing only in buildings and labs, education leaders need flexible, scalable technology that enhances learning outcomes and curricular adaptability.

KEY CONCEPT

The states that create digital infrastructure for trade programs will lead the way on enrollment, engagement and outcomes.



The Four Pillars of a Future-Ready Trades Program

This paper outlines four pillars that define what a future-ready training system looks like for the trades.

PILLAR 1

FLEXIBILITY

Modular curriculum that evolves with the trades

PILLAR 2

SCALABILITY

Technology that removes physical infrastructure constraints
Curriculum that evolves with the trades

PILLAR 3

WORKFORCE ALIGNMENT

Real-time feedback loops with employers

PILLAR 4

STRATEGIC FUNDING

Layering federal and state dollars to sustain programs



PILLAR 1

FLEXIBILITY

Modular curriculum with flexible delivery

The Challenge

The flexibility pillar addresses rigidity in two areas: curriculum and delivery.

Traditional curriculum development cycles are too slow for industries being reshaped by green energy, automation and new code requirements. In past years, to launch a new program, schools would need to run a capital campaign, build a classroom or lab, equip it with expensive equipment, develop a curriculum and hire instructors. This years-long process restricts schools from adapting to workforce needs.

Delivery is also too rigid. The traditional in-person cohort model also doesn't meet the needs of students, including parents, working adults and learners who live farther from a physical lab. Students need access to stackable, self-paced modules and virtual delivery to accommodate a variety of schedules and needs.

The Solution

Today's workforce and student realities call for flexibility in both curriculum and delivery. A modular, flexible approach to curriculum allows institutions to adapt or update their programs without a significant capital investment or a rewrite of their entire curriculum. A flexible delivery approach means students can access virtual coursework and simulations and stack credentials toward a goal.

"Every governor is staring at the same gap between open trades jobs and program capacity. The states that will close it will be those programs with modularity, flexible delivery and prior learning assessment."

Caroline Casagrande

President of VectorEDU and
former U.S. Deputy Assistant
Secretary of State, Academics

What This Looks Like in Practice

- Curriculum is built in modular units, where updating one module for industry updates doesn't require rebuilding the whole program.
- Hands-on training that isn't tied to expensive lab equipment purchases, like 3D simulations and virtual reality (VR).
- The ability to add emerging specializations (e.g., solar installation or data center construction) as demand arises.
- Prior learning assessments that place students in the most appropriate learning path.
- Stackable credentials that let students earn credentials in stages, building toward a full qualification over time.
- Digital delivery to meet students where they are.



PILLAR 2

SCALABILITY

Uncoupling program growth from the constraints of physical infrastructure

The Challenge

While demand is rising for trades education, building a fully equipped trades classroom takes years and significant funding that many smaller districts can't afford. Maintaining existing labs also leads to higher costs, not to mention the cost of all the consumables that learners go through. Finding qualified instructors is equally challenging as skilled tradespeople choose either retirement or higher salaries within their industry.

Simply put, physical infrastructure constraints are preventing schools from expanding enrollment and offering students access to high-value career paths.

The Solution

Institutions can scale their trades programs through digital or hybrid course delivery. This model increases enrollment capacity without increasing building space or instructors and doesn't sacrifice quality.

The "flipped classroom" approach often leads to better outcomes as students engage with interactive content and gain unlimited practice hours on virtual equipment before entering a classroom or touching real equipment.

"Having overseen education programs at every level of government, I can tell you the constraint was never ambition—it was buildings, equipment and instructors. For the first time, technology removes these constraints."

Caroline Casagrande
President of VectorEDU and
former U.S. Deputy Assistant
Secretary of State, Academics

What This Looks Like in Practice

- Simulation-based training that allows learners to practice skills without physical equipment, dramatically increasing learner-to-resource ratios.
- Programs deployable across multiple schools or campuses without proportional cost increases.
- Equitable training quality regardless of geography.

Traditional Cohort Model

Digital or Hybrid Delivery

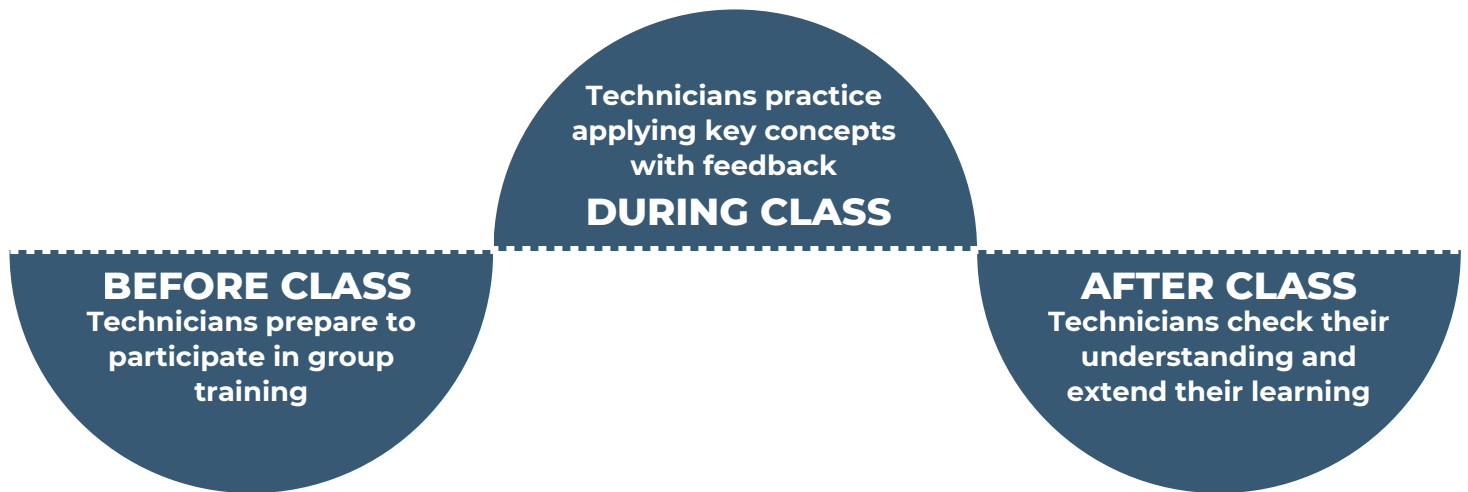
10-15 learners per instructor	30-40 learners per instructor
2-5 years to launch a new program	30-90 days to launch a new program
No. of credentials capped by seat capacity	No. of credentials increased by classroom facilitators
Practice limited to supervised lab hours and available equipment	Unlimited practice via simulations, with lab mastery after initial practice



Modern Strategies for a Scaling Classroom

The Flipped Classroom

Rather than spending valuable class time introducing new concepts, programs can maximize their synchronous learning time by supplementing it with flexible learning. For instance, job-seekers pursuing electrical training programs could complete electrical wiring simulations as pre-work to build foundational knowledge. In the lab, the learners can apply what they learned under instructor supervision. After class, participants can take assessments to reinforce their learning and test their skills.





PILLAR 3

WORKFORCE ALIGNMENT

Real-time feedback loops with industries and employers

The Challenge

The WEF's Future of Jobs Report 2025 found that 39% of current skill sets will be obsolete by 2030, and 59% of workers will need reskilling¹. Even in the trades where skill replacement is slower, institutions are struggling to keep pace and adjust their programs accordingly. Many don't have sufficient feedback loops with employers and industry groups.

At the same time, today's students place a high value on outcomes like job placements and earnings after completion. If schools can't articulate which skills they're teaching, which jobs those will lead to, and how much students will earn, they'll struggle to attract students and funding.

The Solution

As always, the solution is simply better communication. Institutions must build active relationships with employers, industries and workforce groups to understand current skills shortages and labor trends.

Policy Changes Demand Better Workforce Alignment and Concrete Outcomes

There's a regulatory incentive to align your trades programs with workforce needs and have the data to prove it. The new Workforce Pell guidelines state that in order to access funding, eligible programs must:

- Align with high-skill, high-wage jobs in their state.
- Have a cost that does not exceed the value-added earnings of graduates.
- Meet performance metrics such as completion and job placement rate.

"Students have more choices than ever, and we're going to see them demand more outcomes from schools. They're becoming very value-based and want to see job placements and verified salaries before signing on."

Caroline Casagrande

President of VectorEDU and
former U.S. Deputy Assistant
Secretary of State, Academics

What This Looks Like in Practice

- Offering industry-recognized credentials that are updated when certification standards change.
- Going beyond annual advisory meetings with structured, ongoing mechanisms for employers to signal emerging skill gaps.
- Active engagement with local industry groups, Chambers of Commerce and employers.
- Staying connected with your state's Secretary of Labor and local workforce boards.
- Consistently tracking program outcome data (completion rates, job placement rates, earnings, employer satisfaction, skill gap feedback).





PILLAR 4 FUNDING

Layering federal and state dollars to launch and sustain programs

The Challenge

Nearly a billion dollars in Department of Labor and Department of Education grants have been released to community colleges, training providers, and workforce boards in the past 18 months, but most institutions are not capturing their full funding potential. Most have one or two major funding streams for trades programs.

To secure these awards, institutions need a solid footing on the other three pillars: curricular adaptability, a scalable and flexible delivery model and workforce alignment with verified outcomes.

The Solution

Leading institutions are achieving stability and growth with braided funding: a strategy that integrates multiple funding sources toward a single purpose. With stable, diversified funding streams, schools can scale trades programs and reach more students.

“The reality is, if schools don't modernize delivery and align it with their workforce needs, the consequence is real: lost public funding and students through the door. The institutions braiding these funding streams now are building the programs of the future.”

Caroline Casagrande

President of VectorEDU and
former U.S. Deputy Assistant
Secretary of State, Academics

What This Looks Like in Practice

- A clear map of which federal and state funding sources support trades training, including Perkins V, WIOA, Workforce Pell and state workforce funds.
- A strong need statement, templated grant language, and allowable cost documentation to make it easy to write technology into funding applications.





What a Successful Funding Stack Can Look Like

WIOA Title I Individual Training Accounts (ITAs)	Up to ~\$7,000 per eligible learner through American Job Centers. Distributed to adults, youth and dislocated workers enrolled in eligible programs.
WIOA Title I Formula Grants	Funds distributed annually to states for adult, dislocated workers and youth workforce programs. Funds flow from state agencies to local workforce boards.
SNAP Employment and Training	50% federal reimbursement on allowable costs for SNAP-eligible learners. No cap per learner.
Workforce Pell	Expanding to short-term credentials starting July 1, 2026. Requires stackable pathways and verified outcomes.
Employer Match	Employer matches for local programs or current employees upskilling or reskilling.
Strengthening Community Colleges	A federal grant program directly aligned with digital infrastructure and trades expansion.
Partnership / Non-profit Grants	Private funding from partners, non-profit organizations and foundations.
State and Local Grants	Every state and some states have their own layer of workforce funding.





Key Takeaways and Conclusion

Leading with Digital Infrastructure

The path forward to building a resilient, future-ready trades program

In a world where physical infrastructure is expensive, instructors are scarce and students need flexibility, states and institutions must lead with creativity and adaptability.

To meet this moment, leaders must shift to thinking in digital infrastructure. A foundation of tech-enabled delivery allows schools to adapt trades programs to workforce needs and meet students where they are.

Each pillar covered in this paper reinforces the others. Flexibility is needed for scale; scale for workforce alignment; and funding goes hand in hand with all three. No pillar works in isolation, and the thread linking all three is digital infrastructure.

States and institutions need a digital foundation that can deliver flexible content at scale, produce industry-recognized credentials and generate the outcome data required for federal funding. That's what Interplay Learning provides.

"States don't need to choose between serving more learners and serving them well. The right digital infrastructure makes both possible, and it makes every dollar of public investment go further."

Doug Donovan

Founder and CEO of
Interplay Learning

Build a Future-Ready Foundation with Interplay Learning

Interplay Learning's digital workforce infrastructure combines 3D simulations, immersive virtual reality, certification preparation, and competency-based skills assessments. The platform supports institutions through:

- A training library of 2,300+ hours of content across 550+ courses and simulations, with continual new content development.
- Course accreditation through IACET and NATE (North American Technician Excellence), with over 350 courses available in Spanish.
- Multiple delivery methods, including VR, 3D simulations, self-paced online video, instructor-led and hybrid.
- Personalized learning pathways, instructor dashboards and gamification.
- Prep courses for industry-recognized credentials, including EPA 608, OSHA 10/30-Hour Construction, NATE, NCCCO and forklift operator certifications.

Start Your Journey with Interplay Learning

Ready to start building your program today? Contact our team to get started.

Contact: sales@interplaylearning.com

Appendix

1. The Future of Jobs Report 2025