The Third Education Revolution
Forces of Change on The Horizon
Ushering in the Third Education Revolution

- High school for all
- College for all
- Continuous learning
Drivers of the Third Education Revolution

• The rise of smart machines
• Decline of the full-time employee
Characteristics of the Third Education Revolution

Continual training throughout a person’s lifetime—to keep current in a career, to learn how to complement rising levels of automation, and to gain skills for new work.

Workers will likely consume this lifelong learning in short spurts when they need it, rather than in lengthy blocks of time.
Driver One: The Rise of Smart Machines

- Exponentially improving technology
- The digitization of *everything*
- The network effects of a connected world
- Exploding possibilities of innovations that can be remixed in creative new ways
Machines are good at calculating and following rules — but bad at “recognizing patterns” and demonstrating other human qualities.

But those lines of distinction are shifting quickly—self-driving cars, IBM’s Watson, Siri.
It’s hard for us to imagine the ways that computing power will change what’s possible over the next decade.

We’re more used to incremental improvements.
Driver Two: The Decline of the Full-time Employee

- Decline in benefits/retirement plans causing less interest in traditional careers
- Unemployment driving security in other work structures
- More income
- Automation eliminating jobs
Flexibility Also a Strong Driver

Figure 19. The gig economy’s main appeal: increased income and flexibility
Percent saying why joined/would consider joining gig economy

- To earn more money/increase my income: Millennials 56%, Gen Z 62%
- To work the hours I want to work: Millennials 39%, Gen Z 41%
- To achieve better work/life balance: Millennials 37%, Gen Z 35%
- To be my own boss/work independently: Millennials 33%, Gen Z 28%
- To challenge myself in a new type/format of work: Millennials 31%, Gen Z 30%
- To be paid for my performance as opposed to a set salary: Millennials 30%, Gen Z 31%
- No other options/it is the only way for me to earn money: Millennials 10%, Gen Z 11%

Q25. Which of the following best explain why you have joined or would consider being part of the gig economy?
Base: All who would consider working in gig economy. Millennials 8,693, Gen Z 2,145.
Flexibility Drives Employee Loyalty

Those with more flexibility plan to stay at current job more than five years, while less flexibility is driving turnover.
Gen Z will view short tenure employment, project-based work, and taskification not as emerging phenomena but the new normal for structuring work.

This perspective will influence their ideas of what work should look like and could further exacerbate the decline of the full-time employee.
Automation will Affect Professions Differently

**Teachers**
Includes: Schoolteachers, postsecondary teachers, other education professionals, education support workers

- China: 119%
- Germany: 17%
- India: 28%
- Japan: 9%
- Mexico: 37%
- United States: 9%

**Care providers**
Includes: Doctors, nurses, physician assistants, pharmacists, therapists, health aides and health support, childcare workers, health technicians, community and social workers

- China: 122%
- Germany: 25%
- India: 30%
- Japan: 83%
- Mexico: 30%
- United States: 9%

**Professionals**
Includes: Account managers, engineers, business and financial specialists, lawyers and judges, legal-industry support staff, math specialists, scientists, and academics

- China: 26%
- Germany: 20%
- India: 46%
- Japan: 2%
- Mexico: 32%
- United States: 11%
Wage level
Higher wages make business case for automation adoption stronger.

Demographics
Countries with a rapidly growing workforce may enjoy a “demographic dividend” that boosts GDP growth if young people are employed. Countries with a shrinking workforce, can expect lower future GDP growth, derived only from productivity growth.

Demand growth
Countries with stronger economic and productivity growth and innovation will experience more new labor demand.

Mix of economic sectors and occupations
The automation potential for countries reflects the mix of economic sectors and the mix of jobs within each sector.

Source: McKinsey Global Institute
The Emergence of the No-Collar Workforce: A Partnership of Man & Machine
Who Pays for Re-training: Employee or Employer?

Lifelong Learning Accounts

a 401(k)-like plan that allows employers and employees to contribute to an account for retraining purposes.
Impacts on Learning & The Workforce
Online Learning will Evolve

Learning/training Systems will Evolve:

- More learning systems will move online, some self-directed, others required by employers. Workers will be expected to learn continuously.
- Virtual reality and artificial intelligence will advance online learning.
- Core education systems have a unique role in preparing people for life; we are likely to see a variety of new models emerge.
21st Century Skills and Experiential Learning will Be Key

21st Century Skills Key to Success

- Emotional intelligence, creativity, adaptability, resilience, and critical thinking will be highly valued.
- Experiential learning through apprenticeships, internships, and mentoring will become more important.
Alternative Credentialing will Arise

New Credentialing Systems will Be the Norm

- Although college degrees will still be valued, employers will increasingly accept alternative forms of measuring capability.
- Real-world work portfolios may evolve to become the accepted proof of competency.
The Future of Credentials?

A baseline future, “All Roads Lead to Rome,” imagines a future in which degrees awarded by the K-12 and post-secondary sectors still serve as the dominant form of credentials, but there are many roads toward gaining those credentials, such as diverse forms of school and educational assessments.

An alternative future, “The Dam Breaks,” explores a future in which the employment sector accepts new forms of credentials, such as micro-credentials, on a standalone basis, leading to major shifts in both the K-12 and post-secondary sectors and new relationships between the academic and working worlds.

A second alternative future, “Every Experience a Credential,” considers what credentials might look like if new technologies enabled every experience to be tracked and catalogued as a form of credential for both students and employees.

A wild card scenario, “My Mind Mapped,” imagines a future in which breakthroughs in both the mapping and tracking of brain functions have created a new type of credential reflecting students’ cognitive abilities and social and emotional skills.
Welcome to the year 2026, where learning is earning.

Your ledger account tracks everything you’ve ever learned in units called Edublocks.

You can earn Edublocks from a formal institution, individuals or informal groups. The Ledger makes it possible for you to get credit for learning that happens anywhere.

Employers can use this information to offer you a job or a gig that matches your skills.

You can also use the Ledger to find investors in your education.
Four Possible Scenarios Based on Tech’s Displacement of Workers And Societal Response

Source: KnowledgeWorks
Scenario 1: Partnering for Mobility

- Partnerships between man and machines create smart assistants.
- Data-driven feedback helps workers choose professional development to build mosaic careers.
- Free high education drives skill acquisition and improves job mobility.
- Public-private partnerships build a lifelong learning and employment infrastructure.
Scenario 2: Checking for Updates

- Extensive human-machine partnerships reduce jobs and push many into independent, contingent work.
- Individuals must take control of their own learning to be able to partner with AI assistants.
- Always-on workers blur the lines between work, play, and social life.
Scenario 3: Finding New Meaning

- Social infrastructure drives a human-centered economy, driving growth in caring professions and the arts.
- Jobs leverage AI to support uniquely human capacities.
- Understanding of governments that people need a steady foundation on which to build meaningful contributions.
Scenario 4: Working the Platforms

- Jobs are disaggregated into discrete tasks with only the super-skilled holding full-time jobs.
- Platforms connect the right person to the right task.
- Workers are monitored through data analytics; scoring mechanisms inform automated matching.
- Certificates and degrees are replaced by work-life logs that show proof of work and experience.
Impact on Higher Education
For much of the 20th century, simply having a college degree was seen as a key advantage in the job market. Will that remain true?

A hybrid of liberal-arts and technical education may be most needed to better navigate the ambiguity of the future job market.
T-Shaped Graduates?

Higher education is producing I-shaped graduates – students with deep disciplinary knowledge.

T-shaped professionals are characterized by:

- deep disciplinary knowledge in at least one area
- an understanding of systems
- ability to function as “adaptive innovators” and cross the boundaries between disciplines.
In order to keep pace with change, training will occur less episodically. Already colleges are responding by expanding noncredit programs.

Such courses can be up and running more quickly than credit-based programs, and take much less time to complete than do full-fledged degrees and certificates.
Apprenticeship Programs

Apprenticeship is a system of learning by doing. It consists of on-the-job training with an employer and related class studies in college. Apprenticeships vary from two to five years, depending on the trade. Centennial apprenticeship programs will prepare you for an exciting future as a skilled professional in...
Stanford D School Envisions Four Future Scenarios

- Paced Education
- Axis Flip
- Purpose Learning
- Open Loop University

Make impact with design

People in business, higher education, the public sector and K12 education are using design to create change. We offer learning experiences for professionals, educators, and students from beyond Stanford.
Scenario 1: Paced Education

• Move from 4-year system to 3 phases individually paced: Calibration, Elevation, and Activation.
• Students made better choices about what to study deeply, and graduate with mastery not just of what they learn, but also how they learn.

• Taste, try, reflect, achieve, fail, reflect, pursue, succeed, apply, apply, apply... then again: this is the experience of a Stanford student in the era of Paced education.
Scenario 2: Axis Flipped

- Stanford flips the axes of knowledge and competencies: skills become the independent variable of a Stanford education.
- Students are given building blocks to tackle any type of career.
- Undergraduate teaching hubs become the organizing structure.
- Transcripts are replaced by skill-prints.
Scenario 3: Purpose Learning

- Stanford graduates accelerate both their personal sense of meaning and outward global impact by declaring mission to drive learning.
- Alums make an endless list of contributions to issues of poverty, health, infrastructure, artistic and cultural achievement, etc.
Scenario 4: Open Loop University

- Destigmatizes a range of legitimate patterns of learning (gap years, etc.) so that early-career students use their time and investment in on-campus learning for greater impact.
- Provides a way for older adults to pivot careers.
- Revitalizes Stanford with a broader mix of students by creating on-ramps at many ages.
- Develops new operational infrastructure, with the ability to handle a more dynamic and shifting on-campus population.
Three New Literacies and Four Cognitive Capacities

- Technological Literacy—knowledge of mathematics, coding, and basic engineering principles.
- Data Literacy—the capacity to understand and utilize Big Data.
- Human Literacy—the power to communicate, engage with others, and tap into human capacity for grace and beauty.
- Critical Thinking—analyzing ideas skillfully and applying them fruitfully.
- Systems Thinking—understanding the elements of complex systems and applying that information in different contexts.
- Entrepreneurship—the ability to push boundaries and invent original ideas.
- Cultural Agility—a mega-competency that enables professionals to perform successfully in cross-cultural situations.
Boot Camps Aimed at Lifelong Learners Multiply

COURSES AND CLASSES

Full-time or part-time? On campus, or online? Short or long-form? Sort through the variety of courses and classes we offer to find what works best for you.

BROWSE COURSES

- **Web Development Immersive**: Learn the skills to become an entry-level full stack web developer and get access to dedicated career services in this innovative & intensive 13-week online program, all from home.
- **Android™ Development Immersive**: Train in the coding, design, and iteration skills essential to a career in the sought-after field. Build integrated Android apps. In partnership with Google.
- **Data Science Immersive**: Learn the tools and techniques you need to make better decisions through data, and land a job in one of the most sought-after fields in tech.
Woolf University will issue blockchain-guaranteed contracts between a professor and student for a one-on-one tutorial, delivered face-to-face or online. The contract (and payment) is initiated once the student accepts the contract with a push of a button on their cell phone. On successful completion, the blockchain registers the grade against the student record.
Seamless Pathways Emerge

Next for SNHU: Game-Based Learning and Digital Badges for Middle Schoolers

The university and its large online division plan to create a ‘seamless pathway’ between K-12, college and students’ first jobs.

By Lindsay McKenzie // October 19, 2018

Southern New Hampshire University is again trying to disrupt the status quo in higher ed – this time by...
Implications for Independent Schools
Redefining Readiness: Opportunities for Education

As highlighted in the introduction to this paper, education systems have historically followed economic eras. To prepare for a future in which smart machines will be able to perform increasingly complex, non-routine work and full-time employment will be decreasingly common, today’s education systems must change their central operating principles. They must continue to shift from a limiting focus on mastering content and must also move beyond the more recent focus on thinking and doing to establish a new focus on feeling and relating.

Leveraging the emotion system to interface with the world and to connect deeply with other people represents the uniquely human capacity that people bring to work. This capacity will ensure that we will continue to add distinctive value alongside smart machine partners. Establishing a new focus on feeling and relating will help education institutions and systems align with a future of readiness in which the core social-emotional skills and foundational cognitive and metacognitive practices that we have described in this paper will be more important and enduring than specific content or job- and task-related skills. While there will still be a place for both mastering content and thinking and doing, making feeling and relating central to learning will enable students to develop the skills and practices necessary to meet the emerging realities of work with adaptability and resilience.

This is the lens through which education stakeholders must imagine ways of incorporating the new foundation for readiness into schools and other learning communities. More specific opportunities for K-12 and postsecondary education are highlighted on the following page.

Source: KnowledgeWorks

Will K-12’s New Focus Be on Feeling and Relating?

Source: KnowledgeWorks
A Focus on Skills-based Social-Emotional Curricula?

- Deep self-knowledge
- Emotional regulation
- Empathy & perspective taking

Source: KnowledgeWorks
Other Ways Schools Can Support Students in Digital Economy

- Support self-discovery experiences
- Help students develop future images of themselves to guide learning pathways
- Since work will be vague and emergent, students must experience uncertainty, ambiguity, risk, and failure early on

Source: KnowledgeWorks
Rethink Teacher Training

- Teacher education needs to be redesigned with emotional intelligence at its core, with more training in asking meaningful, respectful questions that help students’ curiosity unfold and confidence grow.

- Teachers and other student facing adults also need more training in creating emotional climates that support diverse learning experiences and productive social interactions.

Above all, teachers need to understand how to be in relationships with students in ways that foster openness, trust, safety, and self-discovery.

Source: KnowledgeWorks
Will The Roles of Student, Alum, and Parent be Blurred?

Returning Students

If you were previously enrolled at any of Penn State's campuses, you may be able to use your Penn State credits toward a World Campus program of study. There are several paths you may take to return to your studies, depending on your circumstances.

How do I get started?

To enroll again, you'll need to find the return path that best fits your situation, and submit the necessary paperwork.

- You should contact World Campus Academic Advising six to eight weeks prior to the semester in which you wish to return. It may take some time to review your circumstances and plan your next steps.
- Once you've identified your return path, you'll need to submit the required forms. Returning student forms are due two weeks before the start of each semester. This includes forms for re-enrollment, adult learner re-entry, and academic renewal, depending on which path you take to return to Penn State. Please review upcoming semester deadlines in our academic calendar.
Will Elementary Schools Rebound?

Will the interest in social-emotional skills drive a new interest in elementary skills?
Will College Prep No Longer be A Driver?

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A bachelor's degree is not a piece of paper that says “You're a success!” just as the lack of one doesn't say “You're a failure!”

THE HOT NEW GEN-Z TREND IS SKIPPING COLLEGE

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“creativity is intelligence having fun”

Albert Einstein