THE FUTURE OF WORK and What It Means for K-12 Schools

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Related Special Report: Schools and the Future of Work

Related Story: “The Future of Work Is Uncertain, Schools Should Worry Now”
The Future of Work and What It Means for K-12 Schools

Expert Presenters:

Michael Chui
Partner
McKinsey Global Institute

Tom Vander Ark
Education advocate, advisor, and
Author, *Getting Smart*
An on-demand archive of this webinar will be available at www.edweek.org/go/webinar in less than 24 hrs.
ABOUT EARTH NETWORKS

Founded
1993

Headquarters
Germantown, Maryland, USA

Global Presence
• Offices in EU and Asia
• Partner Network in Africa
• PPPs with Multiple Governments

Largest Global Environmental Observation Networks
• 10,000 global weather stations
• 1,500 lightning sensors

Creators of WeatherBug Applications
• Sold Brand in November 2016
• Continue to Serve as Weather Data Provider
We help schools integrate real-time weather observations into their curriculum to create data-rich online lessons to engage young minds and prepare students for careers in math, science and technology.
CUSTOMERS & PARTNERS

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AI is coming for your job

There will be waves of job loss but they will be different by sector and geography

- **Job loss:** Hundreds of millions of jobs based on repetitive rules application will be phased out
- **Big divide:** Smart machines will eat the middle of the job market—in some places as soon as 10 years while in others it may be 20 years--and create even bigger income gaps
AI will create jobs, enable contribution

- **Job gains with skills:** Tens of millions of new high-wage jobs will be created in smart cities that skill up

- **New contributions:** Machine intelligence makes predictions cheap but human judgment valuable. Empathy and social interaction, creativity and design thinking, and an innovation mindset will be increasingly in demand.
Everyone experiencing high change

Urbanization, automation, and globalization (and the clash of natural and man made systems) will result in unprecedented waves of novelty and complexity.
Every field is computational

MIT’s Eric Lander said in a few years **every biologist will be computational**. The same will be true for doctors, mechanics, economists, water managers and soldiers—nearly every field is being transformed by the combination of AI, big data and enabling technologies.
Every sector delivers in teams

Like medicine, most professions exceed the capabilities of any individual to manage the knowledge and skill required, so we are now delivering in teams.
Civic capacity swamped with ethical, privacy, and security issues

- Genome editing
- Autonomous vehicles
- Super surveillance
- Algorithmic bias
- Unemployment
- Income inequality
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*If you think people were mad in 2016... just wait*
1. Learning how to be

Cancer researcher Kevin Jones describes his work as “taking a bath in uncertainty, unknowns, exceptions and outliers.” Dr. Jones suggests the two most important values, given the level of uncertainty in his line of work, are **humility and curiosity**.
2. Learning to manage projects

“For the rest of their lives, young people will be judged on quality of character and the quality of their work. We should be supporting and compelling students to do well-crafted work that makes them, their families and their communities proud.” ~Ron Berger, EL Education

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<th>Prescriptive Learning Project Cycle Phases</th>
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<th>Exploratory Learning Project Cycle Phases</th>
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<td><strong>Identify</strong>—the prescribed end result</td>
<td><strong>Define</strong></td>
<td><strong>Imagine</strong>—the possible exploration paths and select the most promising ones</td>
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<td><strong>Design</strong>—the process and steps to reach the end result</td>
<td><strong>Plan</strong></td>
<td><strong>Discover</strong>—the concepts and principles of a field and possibilities for end results</td>
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<td><strong>Create</strong>—the end result as designed with small changes that improve the design</td>
<td><strong>Do</strong></td>
<td><strong>Model</strong>—create models (mind maps, drawings, charts, etc.) that capture your learning and are candidates for further development</td>
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<td><strong>Evaluate</strong>—the process, learning, and end product in meeting the requirements of the prescribed end result</td>
<td><strong>Review</strong></td>
<td><strong>Evolve</strong>—pick one or two models to fully develop into learning artifacts that best capture your learning and/or your answers, solutions, positions, or expressions</td>
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Project Management in Education ~Bernie Trilling
3. Learning to collaborate

Social & emotional learning

- Self management
- Social awareness
- Collaboration

CASEL.org
4. Learning how to earn

- Taking initiative
- Marketing
- Project management
- Finance (time value, ROI)
- Business models

OneStone.org
5. Learning data wrangling

There’s never been a better time to make a difference but it almost always involves assembling a big data set.

Wrangling data requires creativity, partnerships, analysis, lots of clean up and a good truth detector.

Influences: experiences, travel, mentors, research, design thinking, prototyping, data partnerships, open tools, development partners
6. Learning wayfinding

MyWays Competencies for Success in Learning, Work, and Life

- Habits of Success
  - Academic Behaviors
  - Self-Direction & Perseverance
  - Positive Mindsets
  - Learning Strategies
  - Social Skills & Responsibility

- Content Knowledge
  - English Core
  - Math Core
  - Science, Social Studies, Arts, Languages
  - Interdisciplinary & Global Knowledge
  - Career-Related Technical Skills

- Creative Know How
  - Critical Thinking & Problem Solving
  - Creativity & Entrepreneurship
  - Communication & Collaboration
  - Information, Media, & Technology Skills
  - Practical Life Skills

- Wayfinding Abilities
  - Surveying the Learn, Work, & Life Landscapes
  - Identifying Opportunities & Setting Goals
  - Developing Personal Roadmaps
  - Finding Needed Help & Resources
  - Navigating Each Stage of the Journey

Source: Next Generation Learning Challenges

MyWays.NextGenLearning.org
7. Learning transferable skills

Metalearning:

- Metacognition
- Growth mindset
8. Learning how to signal competence

Microcredentials
Mastery transcripts
Mastery.org
9. Learning to use AI to improve everything

- Tutoring
- Assessment
- Recommendations
- Hiring & development
- Scheduling
- Transportation
Thank you!

*Continue the conversation:*
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@Tvanderark

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An Introduction to
www.earthnetworks.com
Are your students ready?

Only 37% of U.S. high school seniors are prepared for college-level coursework in math and reading.

National Assessment of Educational Progress (NAEP), 2016
WeatherSTEM is an educational program that uses live data from weather instruments and cloud cameras at your school to create an immersive technology-based learning experience for students to enhance science, technology, engineering and mathematics access in the classroom.
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<td>Onsite Live Observations</td>
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<td>Athletics and Safety Tool</td>
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Sensor measurements and images are captured and stored every minute, creating a rich storehouse for knowledge discovery. The data-mining tool allows for retrieval of all readings and images for historical details and trend analysis.
METEOROLOGICAL COURSES

Meteorology
Exploring Weather Over Time

Module One
Weather on Earth

Module Two
Measuring and Predicting Weather

Module Three
Severe Weather

Module Four
Solar Energy

Module Five
Energy Balance

Module Six
The Atmosphere and the Oceans

Getting Started & Pacing
Midterm Exam
Final Exam
KEY BENEFITS

• Flexible integrations with sensors, communication channels, and APIs
• Robust notification configurations
• Can be mapped to your state standards
• Supports Next Generation STEM Standards
• Actively engages students in the scientific process
• Connects students directly with data about their environment and the physical world
• Growing library of over 150 lessons and a high school Meteorology course
• Custom branding for weather stations
Free Demo at
go.earthnetworks.com/EdWeek
An on-demand archive of this webinar will be available at www.edweek.org/go/webinar in less than 24 hrs.
The Future of Work and What It Means for K-12 Schools

Suggested Reading from Education Week:

**Spotlight on Career Readiness**
In this Spotlight, see how new tests aim to measure career readiness, explore different opinions on career-ready skills, and learn how community engagement and individualized plans can inspire students.

Related Special Report: Schools and the Future of Work

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