Remake Learning: A Networked Approach to Education for the 21st Century

Monday, November 6, 2017
LEARNING TOGETHER
THE WHAT, WHY, AND HOW OF REMAKE LEARNING
STEM 2026
A Vision for Innovation in STEM Education

Hanging Out, Messing Around, and Geeking Out
Kids Living and Learning with New Media

KnowledgeWorks Forecast 4.0
The Future of Learning: Education in the Era of Partners in Code

GENERATION M²
Media in the Lives of 8- to 18-Year-Olds
A Kaiser Family Foundation Study

HELPING CHILDREN SUCCEED
What Works and Why
PAUL TOUGH
Author of the New York Times bestseller HOW CHILDREN SUCCEED
Future Work Skills 2020

While all six drivers are important in shaping the landscape in which each skill emerges, the color-coding and placement here indicate which drivers have particular relevance to the development of each of the skills.

**Extreme Longevity**
Increasing global lifespans change the nature of careers and learning

**Computational World**
Massive increase in sensors and processing power make the world a programmable system

**Superstructured Organizations**
Social technologies drive new forms of production and value creation

**Sense-Making**

**Trans-disciplinarity**

**Novel and Adaptive Thinking**

**New Media Literacy**

**Cross-Cultural Competency**

**Design Mindset**

**Virtual Collaboration**

**Computational Thinking**

**New Media Ecology**
New communication tools require new media literacies beyond text

**Globally-connected World**
Increased global interconnectivity puts diversity and adaptability at the center of organizational operations

**Rise of Smart Machines and Systems**
Workplace robotics nudge human workers out of rote, repetitive tasks
Today’s students won’t be tasked with building cars, they’ll design the computers that drive them.
"If we teach today's students as we taught yesterday's, we rob them of tomorrow."

- John Dewey
A small group of educators, technologists, and community leaders start meeting over breakfasts of pancakes and coffee to talk about the future of learning.

2007

universities

museums

government

libraries

business

nonprofits

funders

schools
Interest grows and the work expands to embrace maker learning, STEM, STEAM, and youth media experiences for all ages both in and out of school.
2012
A framework to support a network that now numbers hundreds of organizations collaborating across sectors and disciplines
2017
At the 10-year mark, the network reflects on its mission, vision, and values and collectively charts its course for the next decade.
ENGAGING
RELEVANT
EQUITABLE
Creating remarkable STEM, STEAM, Maker and TEL experiences
Teachers work alongside technologists for professional development.
Ed tech startups work with students to test new learning products.
Learning scientists are embedded in museums & out-of-school locations
ELIZABETH FORWARD SCHOOL DISTRICT
Transforming a school district one classroom at a time
Rethinking the use of space and the use of budgets
Breaking down the walls between shop class, art studio, and computer lab
Reducing drop-outs to zero, climbing test scores, skyrocketing enrollment in summer enrichment
MAKESHOP
Exploring digital & DIY learning at the museum

A hands-on exhibit space where kids and families work with real tools and materials

Challenges and nurtures creativity, integrating the arts and STEM through exploratory learning

A model for makerspaces both in the Pittsburgh region and nationwide
CARNEGIE MELLON UNIVERSITY
Bridging the community & higher education

Unleashing the resources of a major research university for the benefit of local communities

CREATE Lab helps educators and students make the most of high-tech research and development

Entertainment Technology Center partners with schools, museums, and libraries to design immersive learning environments
REMAKE LEARNING DAYS
MORE THAN 50,000 PEOPLE PARTICIPATED IN 2016 & 2017
Learning is being remade in Pittsburgh
Partners 2004

• Reading is Fundamental
• Saturday Light Brigade
• Toonseum
• Teacher Warehouse
• PPS Headstart (2 classrooms)
• UPCLOSE
• Allies for Children
Remake Learning

- Action Housing
- Hosanna House
- Maker Faire
- West Virginia Maker Network
- Making + Learning
- Making Spaces
Museum Lab

Partners

• Saturday Light Brigade
• Reading is Fundamental
• Allies for Children
• UPCLOSE
• Carnegie Mellon ETC
• Remake Learning
• Manchester Academic Charter School
Triple Bottom Line Theory*

- Traditional business accounting knows the "bottom line" as "profit" or "loss".
- Environmental/social justice advocates bring a broader scope, introducing two additional “bottom lines”:
  1. Financial
  2. Ecological/environmental
  3. Social
- When Chevron enters a new business region, we ask questions, learn from local thought leaders, and address the three bottom lines with a fit-for-purpose strategy.

* 1994, John Elkington, founder of a British consultancy, SustainAbility
The tri-state economic development opportunity

**Problem**
- Significant gap between energy industry and manufacturing job opportunities and skills in the region.
  - *Who in the region knows this best?*

**Mission**
- TBL approach: support STEM education and job training pathways that lead to higher-income jobs that 1) enhance regional workforce capability aligned with our environmental and workforce safety standards; 2) improved long-term economic growth of the area; 3) ability to achieve our business objectives.
  - *Do we know how our residents perceive STEM and the pathways to a variety of jobs and careers?*

**Strategy**
- Prepare K12 students and adult learners with the skills and mindset to support the needs of the energy and manufacturing industries, advancing the economy in the communities where we operate.
  - *What do parents, students, educators and business leaders know about the kinds of industry jobs available?*

**Focus**
- Programs aligned with API’s objectives
- Initiatives localized to meet the unique needs of urban, suburban, and rural communities
- Link training programs with the energy industry and manufacturing supply chain
  - *How do we encourage manufacturing development in the region so that the jobs remain for the long-term?*
Evolving a public-private partnership

Appalachia Partnership Initiative (www.appalachiapartnership.org) launched in 2014
• Chevron committed $20MM in seed funding
• Founding partners:
  – The Grable Foundation
  – Benedum Foundation
  – Allegheny Conference on Community Development
  – RAND Corporation
  – Catalyst Connection
• Partners commit funding, leadership, project advocacy, and monitoring & evaluation

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Perceptions of STEM + a connection to jobs

2014 survey of 978 teachers, parents, and business leaders in 17 counties:

• Parents awareness of STEM education is low and at its lowest in rural communities
• Educators and business leaders understand the value of hands-on engaging STEM curricula
• College is important to parents in rural communities where manufacturing jobs have disappeared
Remake Learning advances our vision

Converge STEM learning with workforce training credentials to build multiple pathways to jobs with ongoing advancement.

K12 STEM Learning
- Science & technology instruction
- Teacher training
- Job awareness
- Mindset

Economic Impact
- Better-qualified workforce
- Higher incomes & educational attainment
- Workers encouraged to stay in region

Workforce Development
- Job awareness
- Mindset
- Short service/apprenticeships
- Certifications
- Career & Tech training
- 2/4 year degrees

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The value of Remake Learning’s public-private focus

Leverages member resources to:

• Build advocacy to scale and sustain programs that work
• Reduce project redundancy
• Reach a broader, more diverse population
• Engage multiple organizations to amplify an important regional story