PERSONALIZED LEARNING
In Project-Based Math Classrooms

Content provided by dreambox LEARNING
Personalized Learning in Project-Based Math Classrooms

October 2016
@Tvanderark
How Has the World Changed?
Connected
Contested
Complex
Contribution

- **Nonconformity:**
  - *Brilliant thinking is rare, but courage is in even shorter supply than genius* (Peter Thiel)

- **Creativity:**
  - *We're going to need every ounce of ingenuity, imagination, and creativity to confront...problems* (Ken Robinson)

- **Design Thinking:**
  - *Tools, methods, and processes to create new answers for challenges* (IDEO)

GenDIY
Competitive
New Demands

- Connected
- Contested
- Complex
- Contribution
- Competitive
Connected ➔ Communicate Clearly

Esther Wojcicki’s journalism program, Palo Alto HS
Contested ➔ Collaborative

6th grade math blend, Eastside Prep
Complex ➔ Critical Thinking

Core Values
- Inquiry
- Research
- Collaboration
- Presentation
- Reflection

Science Leadership Academy, Philly
Contribition ➔ Creativity

KM Explore, Kettle Moraine, WI
Student-centered, competency-based
New Demands ➔ New Skills

- Connected
- Contested
- Complex
- Contribution
- Competitive

- Communicate
- Collaborate
- Critical thinking
- Creativity
- Crank
....but that was 2015
To think correctly about the future, you need to imagine things moving much faster.
2016: Platform Revolution

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2016: Rise of AI & Automation Economy
2016: Rise of Industry 4.0

1st: Mechanization, water power, steam power
2nd: Mass production, assembly line, electricity
3rd: Computer and automation
4th: Cyber Physical Systems
It's a project-based world.

Keywords:
- Communication
- Self-directed learning
- Critical thinking
- Problem solving
- Collaboration
- Mastery of core academic content
- Academic mindset
- Effective thinking
Project-based world requires an Innovation Mindset

...a mindset we can cultivate in classroom & across a city
Instructional Design Opportunity:

- Project-Based Learning
- Personalized Learning
Instructional Design Opportunity:

- Interest-Based Learning
- Standards-Based Learning
Implications for the Math Classroom
Developing a Math Mindset

Growth mindset
*Do students persist through challenging problems?*

Problem Solving
*Do students think creatively about how to arrive at a solution?*

Critical Thinking
*Do students have an opportunity to practice the unknown?*
Personalized learning for projects in projects, with projects
Support Integrated Projects

- No Poverty
- Zero Hunger
- Good Health and Well-being
- Quality Education
- Gender Equality
- Clean Water and Sanitation
- Affordable and Clean Energy
- Decent Work and Economic Growth
- Industry, Innovation and Infrastructure
- Reduced Inequalities
- Sustainable Cities and Communities
- Responsible Consumption and Production
- Climate Action
- Life Below Water
- Life on Land
- Peace, Justice and Strong Institutions
- Partnerships for the Goals

The Global Goals for Sustainable Development
Differentiating around a singular topic
Unsung Hero Project

How can we celebrate and honor the lives of unsung heroes, as well as bring awareness to their extraordinary efforts?
DreamBox Learning® K–8 Math
Available in English & Spanish
DreamBox Lessons & Virtual Manipulatives

Intelligently adapt & individualize to:

- Students’ own intuitive strategies
- Kinds of mistakes
- Efficiency of strategy
- Scaffolding needed
- Response time
AssignFocus™

To accelerate learning, offer remediation, and adjust classroom instruction

Differentiated assignments for every student through your Insight Dashboard
Efficacy: Independent Validation from CEPR at Harvard University

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Thank you!

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