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# *Implementing Digital Learning: A 21<sup>st</sup> Century Retrospective*

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# Providing Opportunities for All Students



## Opportunity Gap Statistics

Of US high schools, only



**50%** offer  
calculus



**63%** offer  
physics

In US high schools with the  
highest percent of black and  
Latino students,



**25%** do not offer  
algebra II



**33%** do not offer  
chemistry

U.S. Department of  
Education 2014  
Office of Civil Rights  
Data

## University of California System 7 Courses: California A-G

- *40% of high schools in California do not offer all of the A-G courses needed to be eligible for admission to UC System*

High School Subject Area	State Mandated Requirements* (EC 51223.3) for High School Graduation	UC Requirements for Freshman Admissions	CSU Requirements for Freshman Admissions
English	Three Years	Four years of approved courses	Four years of approved courses
Mathematics	Two years, including Algebra I, beginning in 2003-04. (EC 51224.5)	Three years, including algebra, geometry, and intermediate algebra. Four years recommended.	Three years, including algebra, intermediate algebra, and geometry.
Social Studies/Science	Three years of history/social studies, including one year of U.S. history and geography; one year of world history, culture, and geography; one semester of American government and civics, and one semester of economics.	Two years of history/social science, including one year of U.S. history or one-half year of U.S. history and one-half year of civics or American government; and one year of world history, culture, and geography.	Two years, including one year of U.S. history or U.S. history and government and one year of other approved social science.
Science	Two years, including biological and physical sciences.	Two years with lab required, chosen from biology, chemistry, and physics. Three years recommended.	Two years, including one year of biological and one year of physical science with lab.
Foreign Language	One year of either visual and performing arts, foreign language, or	Two years in same language required.	Two years in same





# China

- China: 1.3 billion people
  - Digitized K-12 curriculum
  - Trained Master Teachers to teach online
  - Increased educational opportunities to 100 million new students using online learning





# Hong Kong

*Blended learning for Continuity of Learning*





## Singapore

- Singapore: 100% of Secondary schools use online learning
- All teachers trained to teach online
- LMS, online facilitation, rubrics for grading student work online, digital content
- Blended Learning
- E-Learning Weeks

# eLearning Ontario

## Ontario Ministry of Education eLearning Ontario



- Provides LMS for all 72 districts
- Funds and oversees the development of eLearning courses
- Online content uploaded into the Ontario Educational Resource Bank (OERB) which all Ontario teachers, students and parents can access
- Solutions for credit recovery, differentiated instruction and as a study tool for students
- Online courses at day schools funded at the same level as face-2-face day school courses

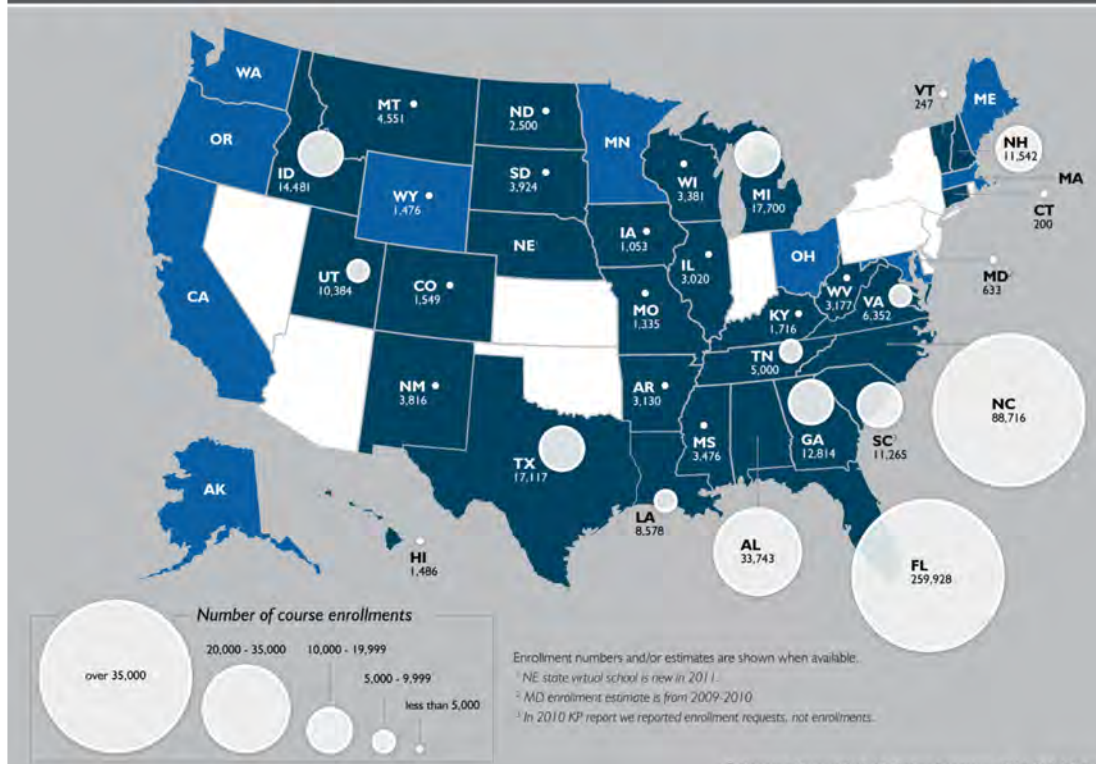


The eLearning Ontario website is  
<http://www.edu.gov.on.ca/elearning>

2011




## States with State Virtual Schools or State-led Online Initiatives

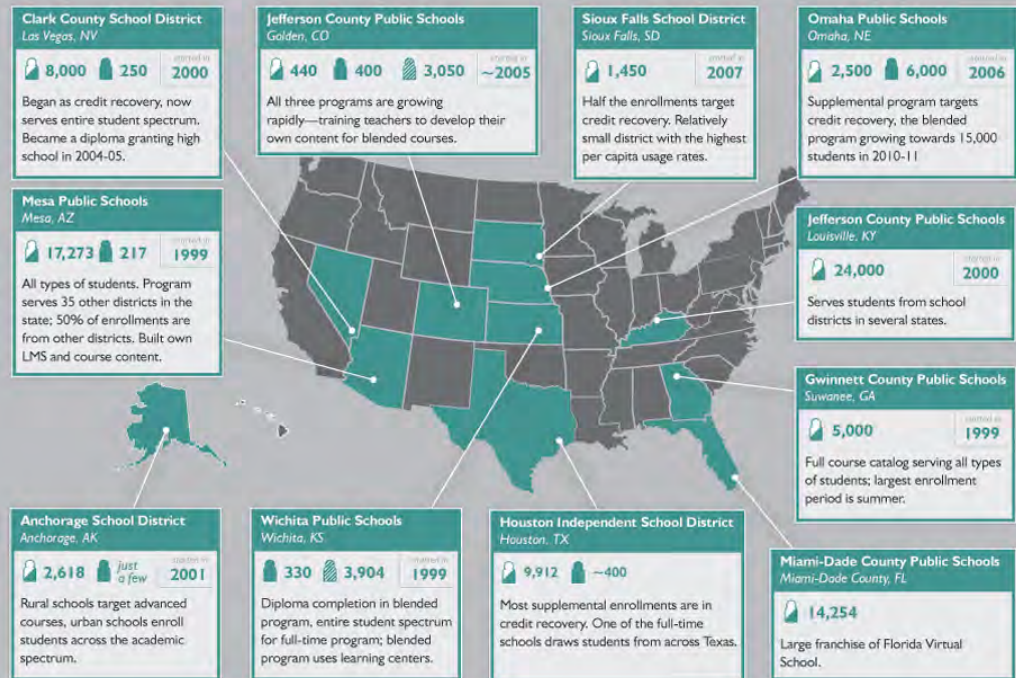
■ states with a state virtual school   ■ states with a state-led online initiative   ■ states with neither



## Established District Programs

(All statistics from 2009-10 school year unless noted)

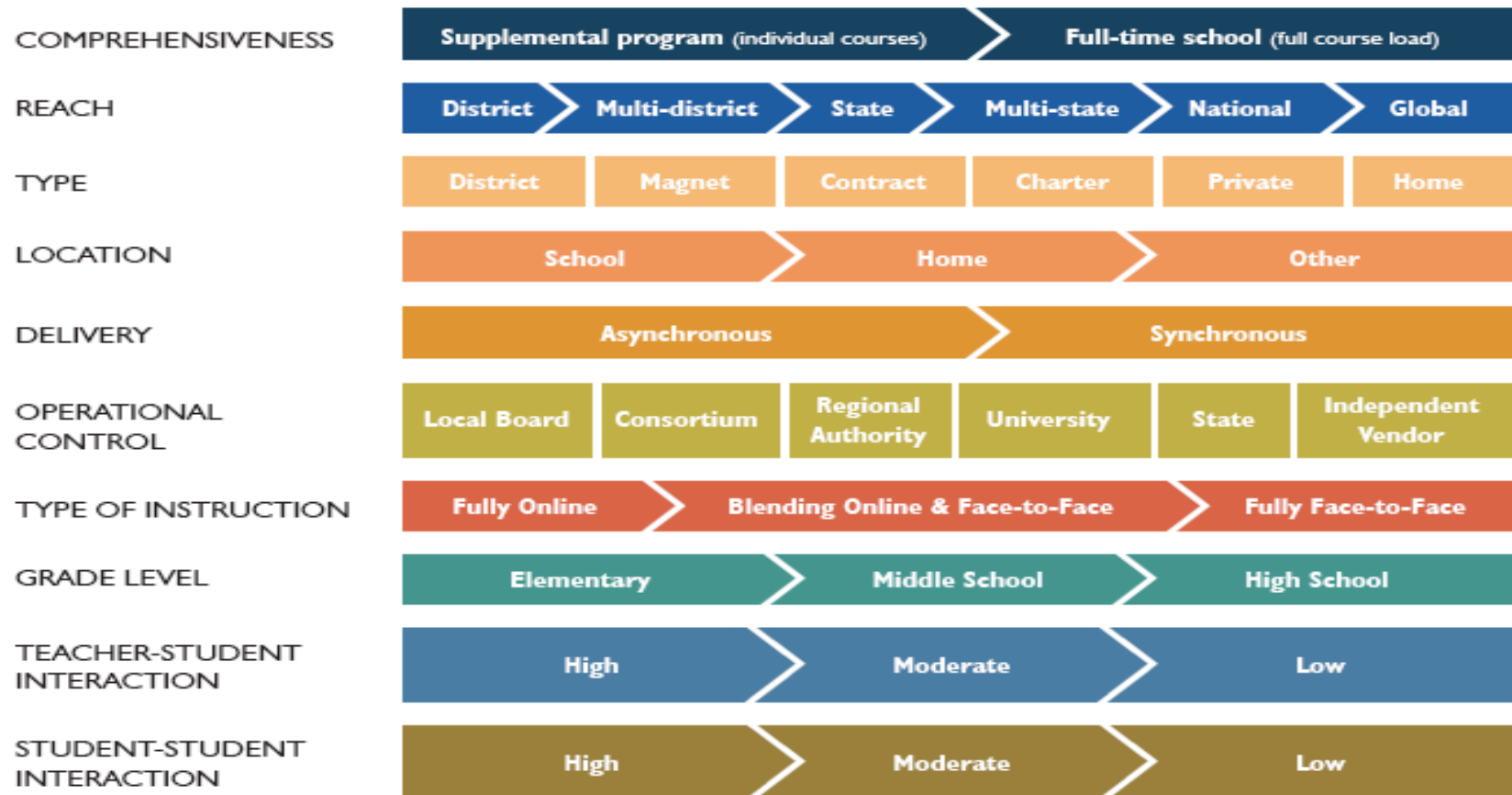
 Supplemental course enrollments
  Full-time students
  Blended course enrollments



# 2010-2020: K-12 Solutions through Online Learning

- 40% of US high schools do not offer AP courses
  - 75% of districts use online learning to offer Advanced Placement or college-level courses.
- Teacher Shortages
  - 40% of public school districts in America today say they need online learning resources because certified teachers are not available for traditional face-to-face instruction.
- More than 50% need online learning to reduce student scheduling conflicts to graduate on time.
- 60% of school districts say they need online learning for credit recovery.

## THE DEFINING DIMENSIONS OF ONLINE PROGRAMS



# National Standards for Quality Online Programs, Online Teaching & Online Courses



## ***Defining blended learning***



# The Rise of K-12 Blended Learning

In Blended, Horn & Staker Definition of Blended Learning



A formal education program in which a student learns at least in part through **online learning**, with some element of **student control over time, place, path and/or pace**



at least in part in a **supervised brick-and-mortar location away from home** (such as school).



The modalities along each student's learning path within a course or subject **are connected to provide an integrated learning experience.**



# Assessments OPEN

*Come in* we're  
**OPEN**

*Now*  
**OPEN**

YES...WE'RE  
**OPEN**

*3. Learn*  
*4. Show*

ASSESSMENT  
INFO

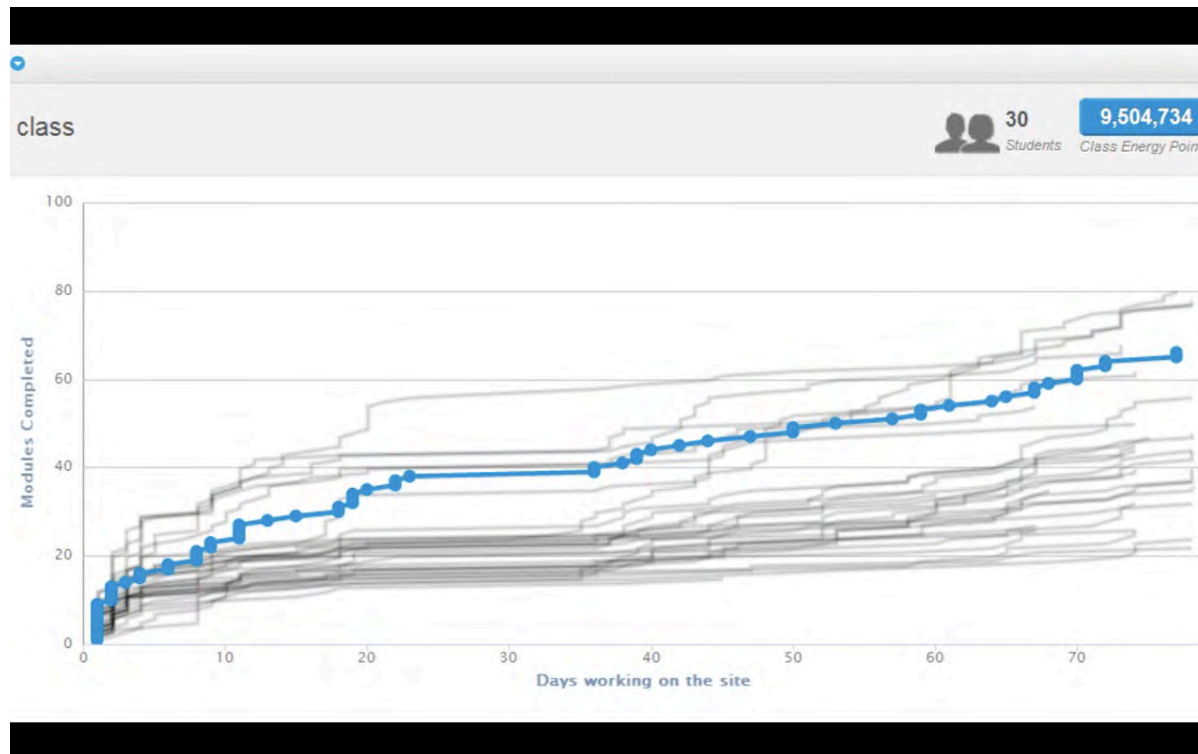
PLEASE LINE  
UP AT THE  
PODIUM IF  
YOU WOULD  
LIKE TO TAKE  
AN  
ASSESSMENT

ZONE 3

VIZIO

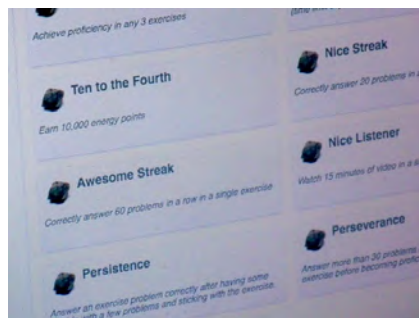
# Online learning inherently modular

Image courtesy of Khan Academy



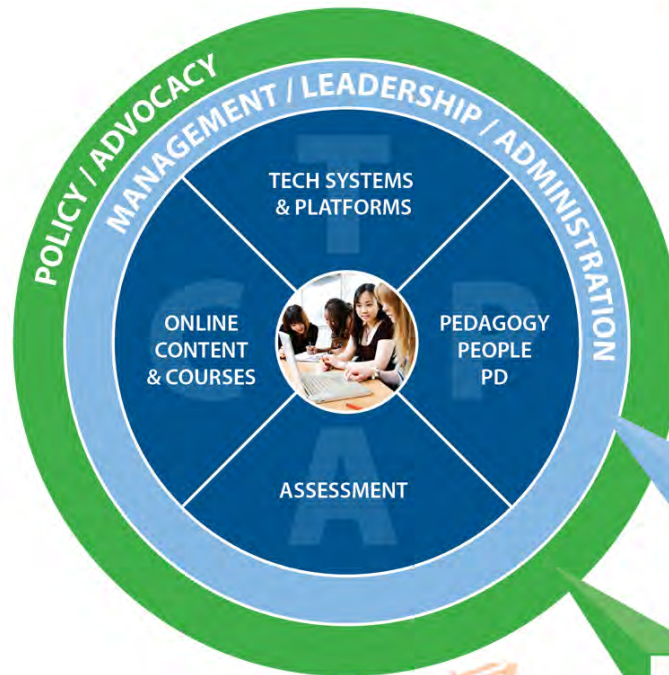
# Khan Academy, Los Altos, CA

- NPR August 22, 2011: Khan Academy Pilot in Los Altos Schools
  - Teacher Courtney Cadwell says she saw students become 'active learners' and the tool 'stretches us as educators.'





# New Models Using Online & Blended Learning



- T TECHNOLOGY PLATFORMS**
- Enterprise architecture
  - Learning management system/virtual learning environment
  - 1:1 computing
  - Broadband internet infrastructure
  - New SIS models for standards-based and competency-based approaches

- P PEOPLE / PEDAGOGY / PD**
- Teachers need new skills to teach online
  - Administrators need new skills to manage online programs
  - New Response to Intervention (RTI) models through blended
  - Personalizing instruction allowing students to accelerate at their own pace

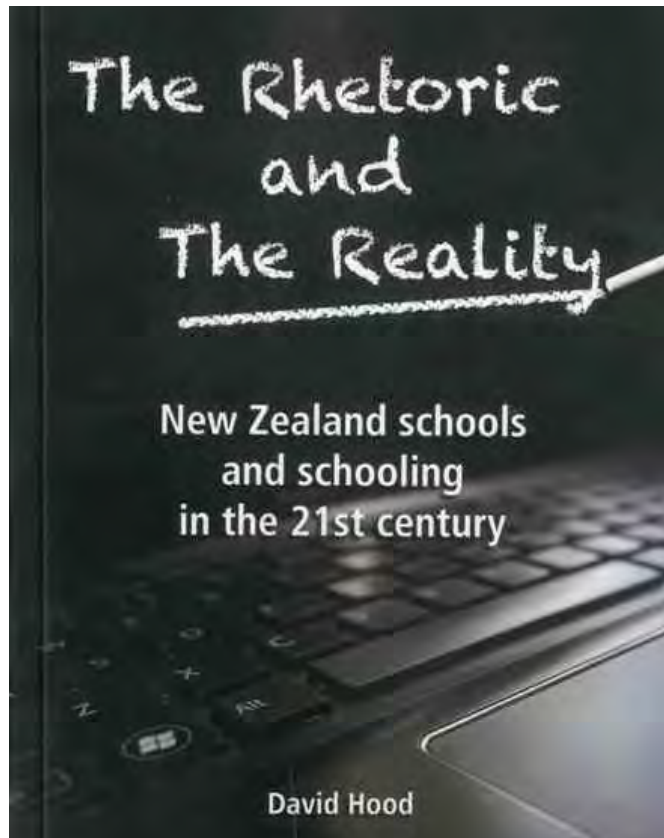
- ASSESSMENT**
- Online / adaptive
  - Personalization engines
  - Performance-based

- ONLINE CONTENT**
- Online courses
  - Dual enrollment
  - Credit recovery
  - Common core curriculum

- STUDENT SUPPORT SERVICES**
- Online tutoring
  - Technical support
  - Registration
  - Counseling

- ADVOCACY / POLICY**
- Does every student have access to online learning?
- Policies and funding models
  - Remove barriers that limit enrollment

**NEXT GEN MODELS**  
Competency-based learning pathways



## David Hood

“The Paradigm of One: one teacher, teaching one subject, to one class of one age, using one curriculum at one pace, in one classroom for one hour.”

# *Defining Personalized Learning*

**Personalized learning is tailoring learning for each student's strengths, needs, and interests – including enabling student voice and choice in what, how, when, and where they learn – to provide flexibility and supports to ensure mastery of the highest standards possible.**

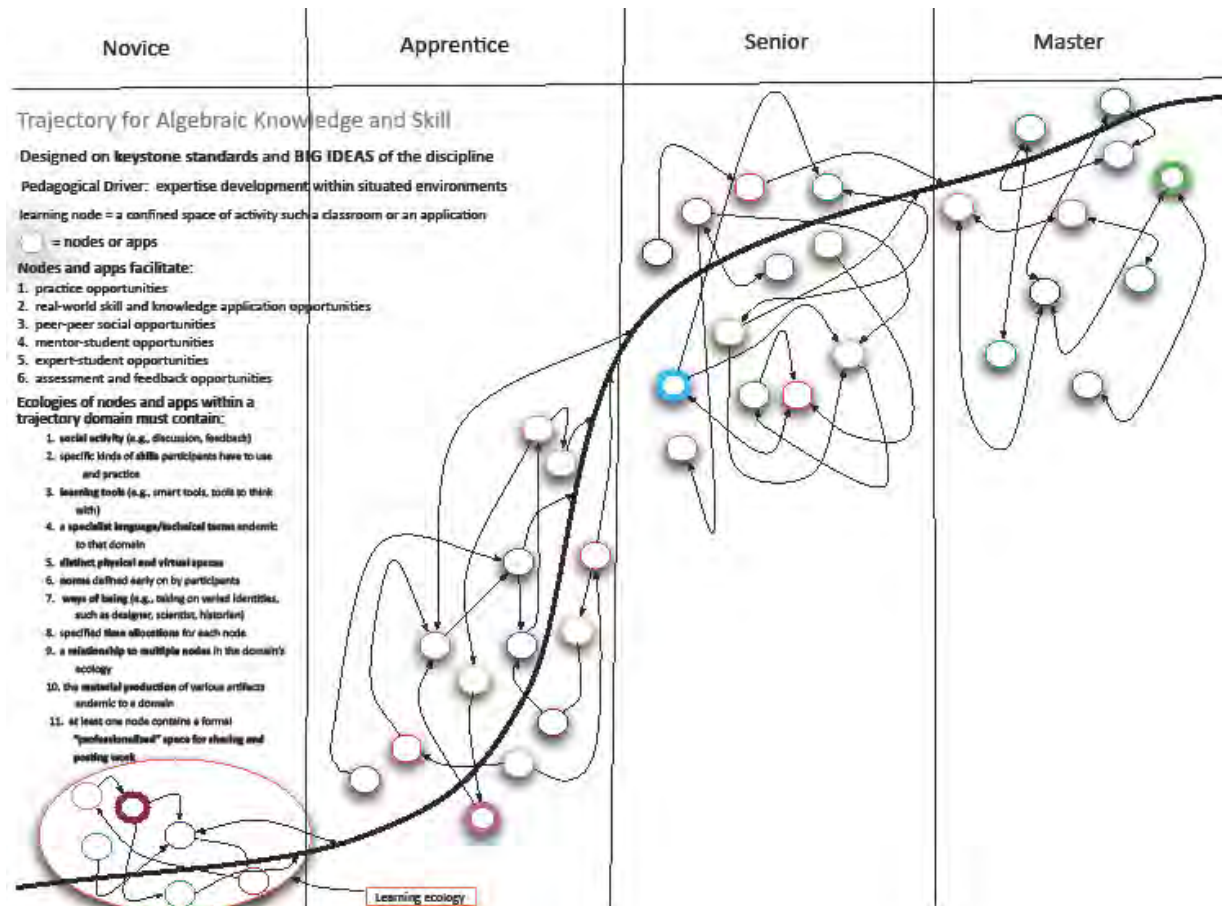
**#Aurora2020**

**Mean What You Say:  
Defining and Integrating Personalized,  
Blended and Competency Education**

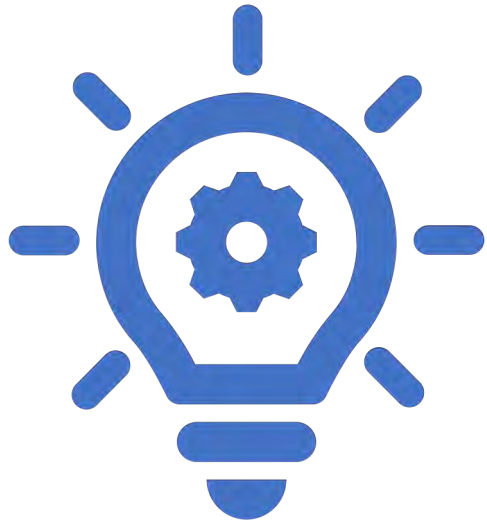
Susan Patrick, Kathryn Kennedy and Allison Powell



# Applications and Tools within Learning Trajectories



## What is the Appropriate Role of Technology Reinventing K-12 Education?



“Technology is intervention by design: the use of practical and intellectual resources to develop products and systems (technological outcomes) that expand human possibilities by addressing needs and realizing opportunities. Adaptation and innovation are at the heart of technological practice.”



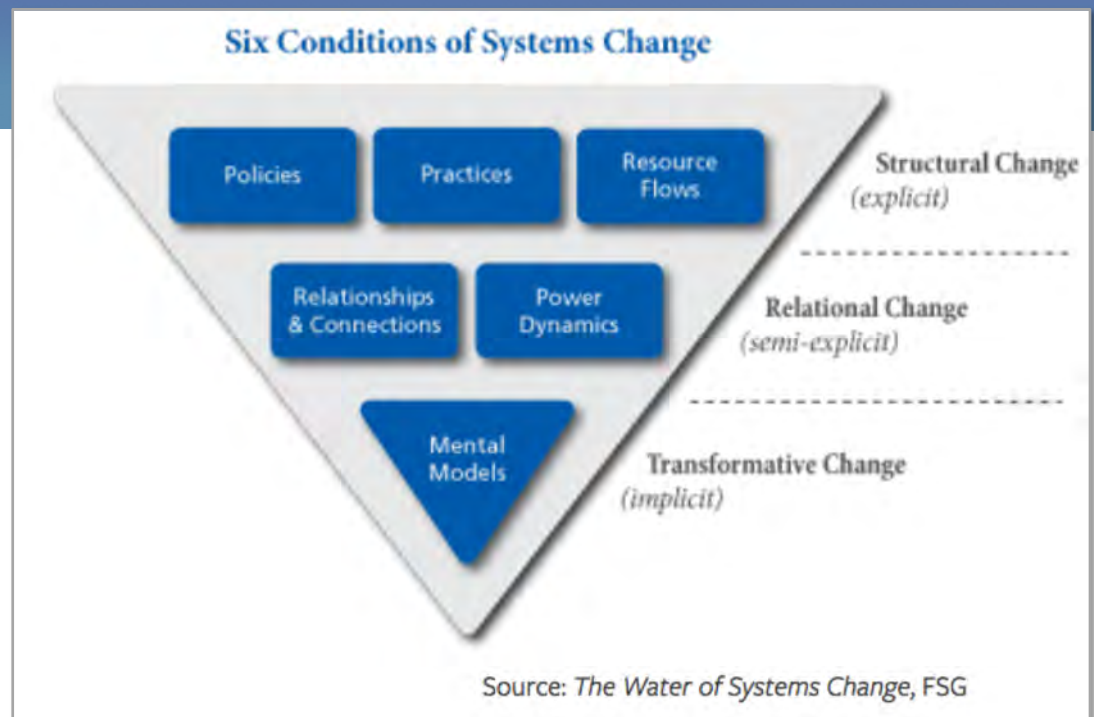
**2020**

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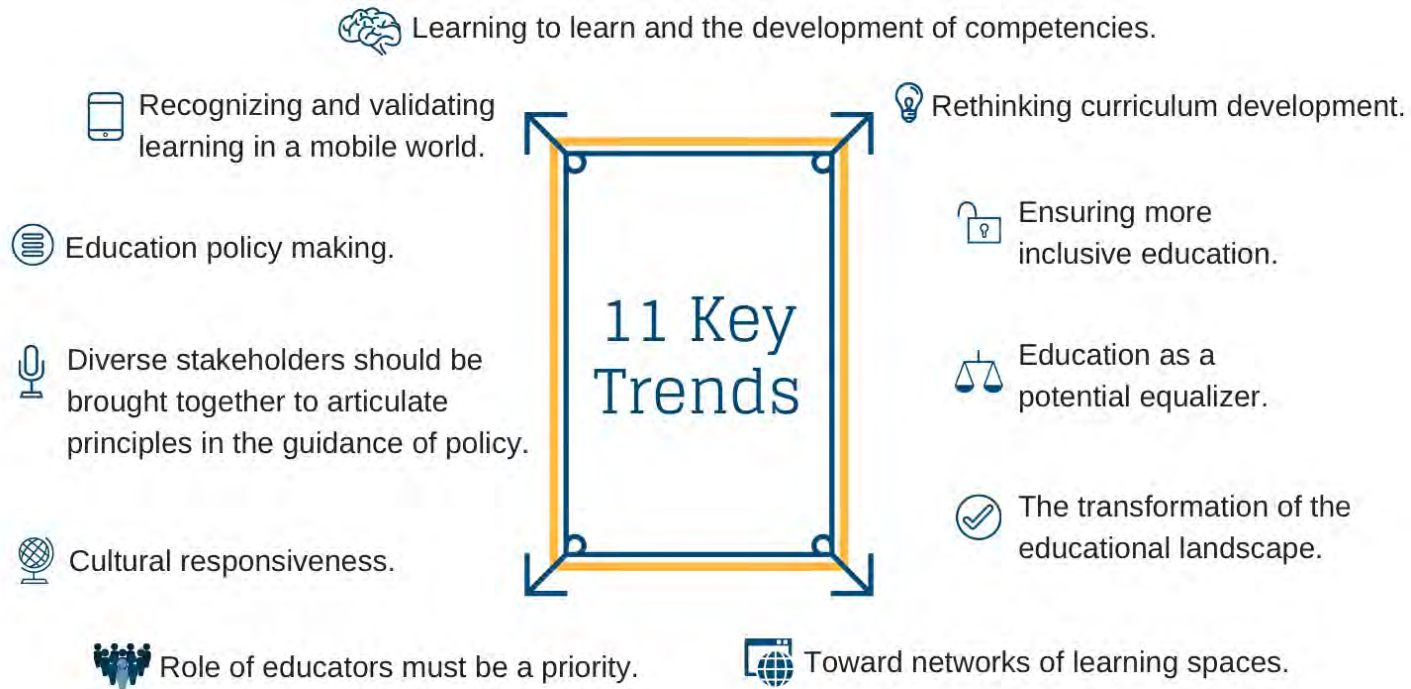
# Defining Systems Change

## “THE WATER OF SYSTEMS CHANGE” – FSG

“In a world of polarized interests and accelerating disparities, the challenges of achieving **equitable progress at scale** against complex social and environmental problems have become all the more daunting. For some, the response has been to accelerate efforts to change explicitly visible conditions, and to do so quickly. But we argue that **now is the time to focus even more on the implicit or less publicly acknowledged key systems change conditions** to truly increase the lasting impact of your efforts.”

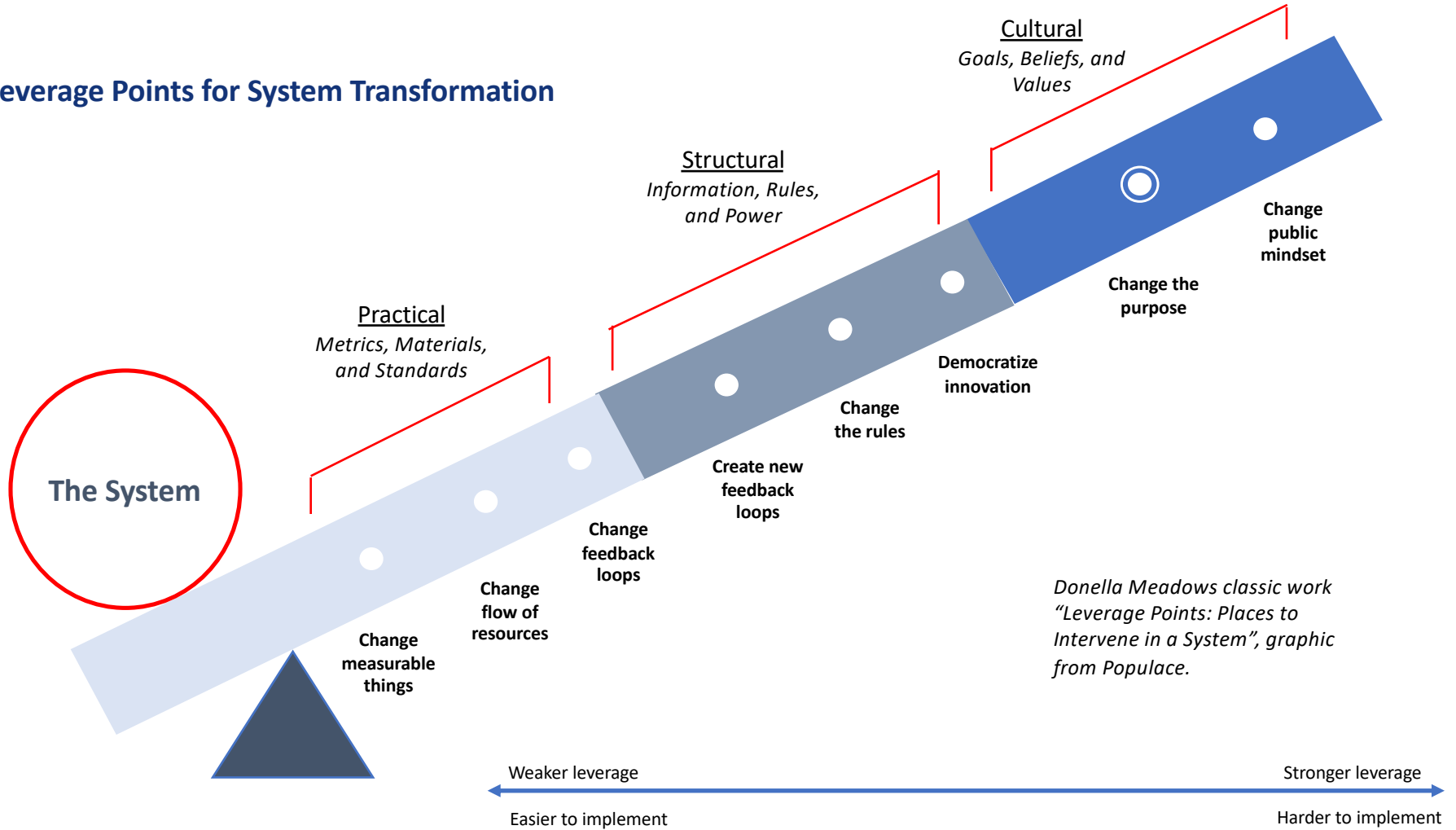


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Source: Rethinking Education Towards a Global Common Good? (2015). UNESCO.

# Leverage Points for System Transformation



# FLAWS OF THE TRADITIONAL SYSTEM ....



**NARROW SET OF  
ACADEMIC OUTCOMES**



**HIGH LEVELS OF  
VARIABILITY IN HOW  
TEACHERS  
DETERMINE  
PROFICIENCY; MIXED  
MESSAGES**



**BASED ON A FIXED  
MINDSET**



**GRADING SYSTEMS  
DEPEND ON EXTRINSIC  
MOTIVATION**



**IS TIME-BASED**



**OPAQUE  
PERFORMANCE  
EXPECTATIONS**

## A Competency-Based Education System....



**Is built upon a growth mindset: All children can learn**



**Is mastery learning-based (with time-bound targets)**



**Fosters intrinsic motivation**



**Builds educator capacity: Calibration organized for proficiency**



**Organized to personalize learning**

# 2011 Definition: Five Elements of Competency-Based Education



**Students advance upon demonstrated mastery.**



**Students receive timely, differentiated supports based on their individual learning needs.**



**Competencies include explicit, measurable, transferable learning objectives that empower students.**



**Learning outcomes emphasize competencies that include application and creation of knowledge, along with the development of important skills and dispositions.**



**Assessment is meaningful and a positive learning experience for students.**

# Defining Competency-Based Education

## ORIGINAL DEFINITION OF COMPETENCY-BASED EDUCATION

1. Students advance upon demonstrated mastery.
2. Competencies include explicit, measurable, transferable learning objectives that empower students.
3. Assessment is meaningful and a positive learning experience for students.
4. Students receive timely, differentiated support based on their individual learning needs.
5. Learning outcomes emphasize competencies that include application and creation of knowledge, along with the development of important skills and dispositions.

2011

## REVISED DEFINITION OF COMPETENCY-BASED EDUCATION

1. Students are empowered daily to make important decisions about their learning experiences, how they will create and apply knowledge, and how they will demonstrate their learning.
2. Assessment is a meaningful, positive, and empowering learning experience for students that yields timely, relevant, and actionable evidence.
3. Students receive timely, differentiated support based on their individual learning needs.
4. Students progress based on evidence of mastery, not seat time.
5. Students learn actively using different pathways and varied pacing.
6. Strategies to ensure equity for all students are embedded in the culture, structure, and pedagogy of schools and education systems.
7. Rigorous, common expectations for learning (knowledge, skills, and dispositions) are explicit, transparent, measurable, and transferable.

2019

# What It Looks Like



Every student with personalized learning

Learner record with Competencies and Rubrics for each level - academic+ knowledge & skills (what a student knows and can show)



Data systems to support teachers and students clearly indicating level of progress on each academic standard to monitor student progress



Rubrics to help teachers and students understand what mastery looks like



Students know their targets; collaborate w/each other



Adults shifting roles

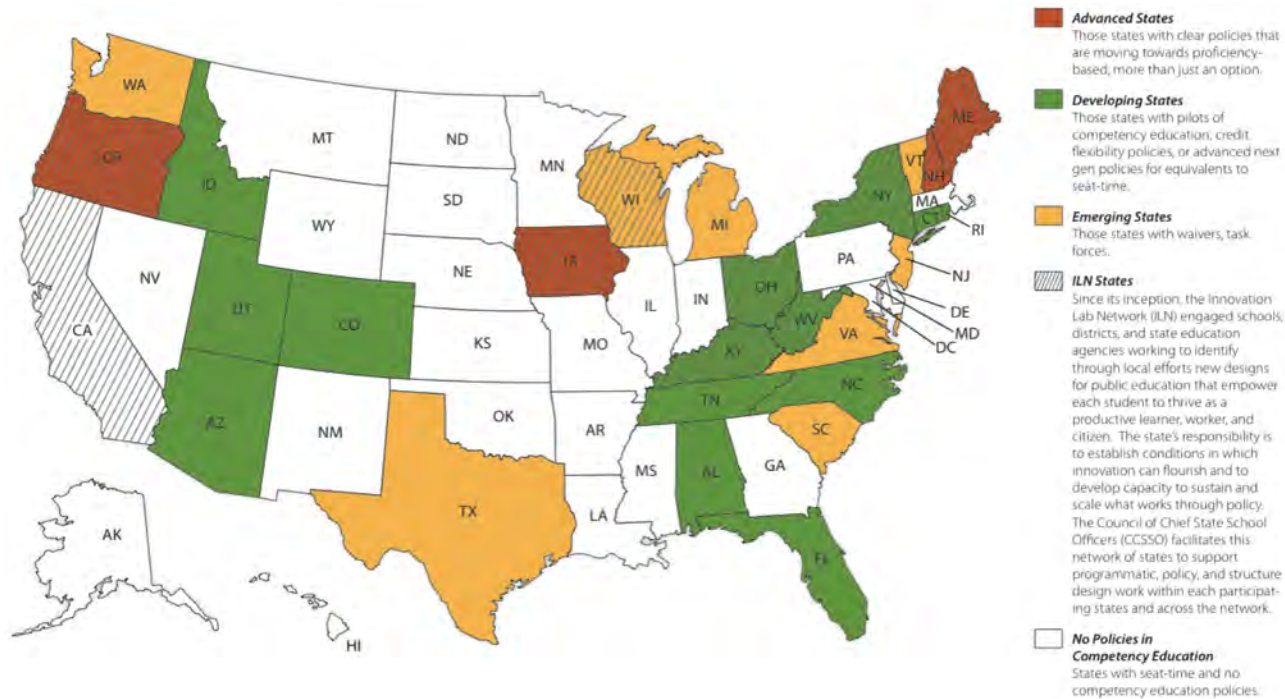
Personalization, grouping, teacher specialization



Classroom, online, expanded learning opportunities

After school, internships, museum, projects, formal & informal learning

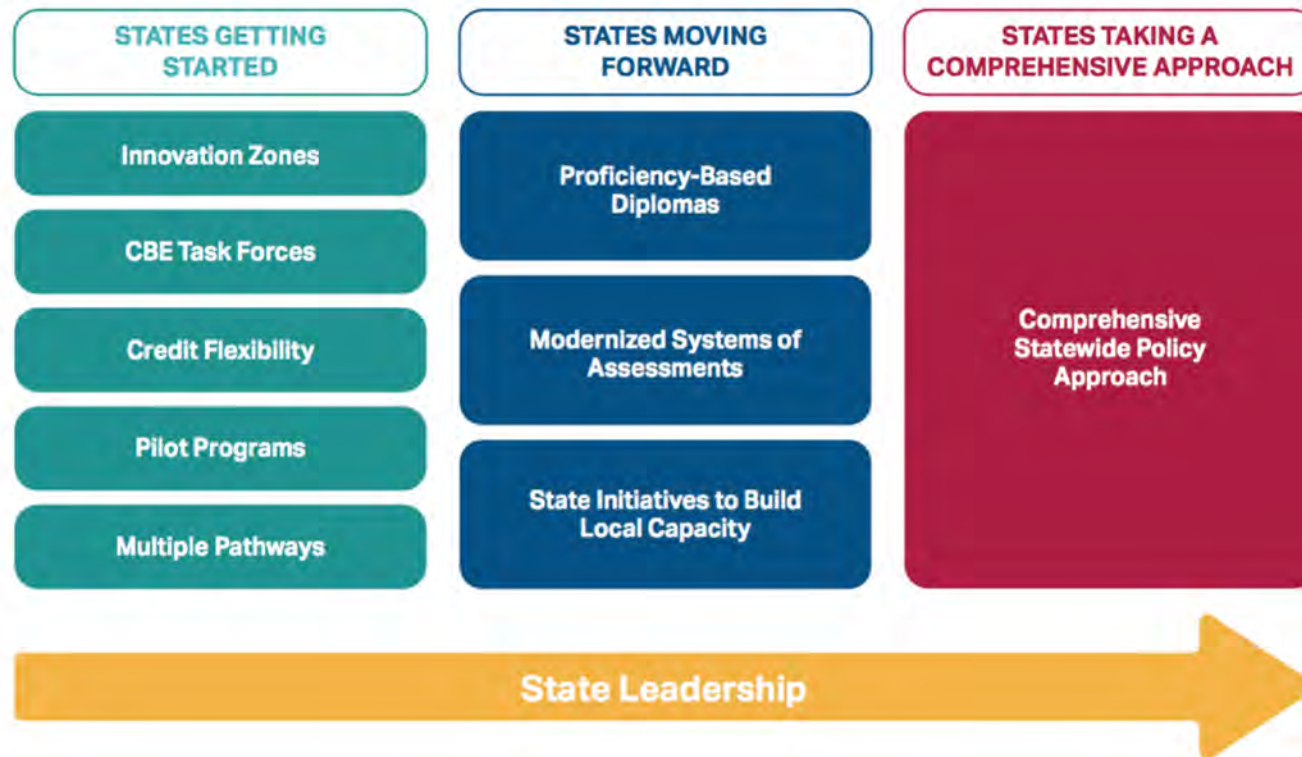
# States Advancing Policies to Support K-12 Competency-Based Education - 2012





# Promising State Policies to Advance Personalized Competency-based Education

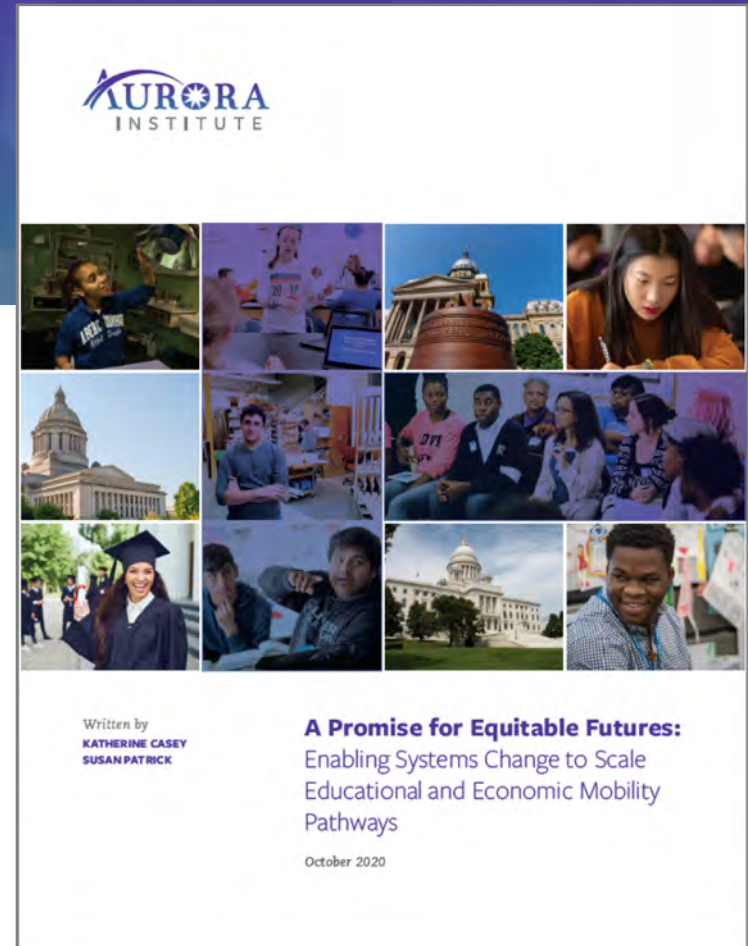
Redefining Student Success /  
Profile of a Graduate



NEW BOOK

*A Promise for Equitable Futures:  
Enabling Change to Scale Educational  
and Economic Mobility Pathways*

A call to action for states to commit to a **Learner Promise** – a set of 14 policy recommendations to create aligned, coherent competency-based education and workforce development systems throughout K-12 education, postsecondary, and the workforce. It's a collective call to develop new equity-driven ecosystems for lifelong learning in the United States.



## Support Learner Development

1. Create Individualized Learner Records
2. Support Student Counseling, Advisement, and Navigation
3. Prioritize Personal and Professional Skill Development
4. Create Opportunities for Career Awareness and Exposure

## Promote College and Career Readiness

1. Create Competency-Based Graduate Profiles
2. Expand Work-Based Learning
3. Expand Competency-Based Learning
4. Promote Dual and Concurrent Enrollment
5. Develop Balanced Systems of Assessments

## Create Regional Pathways

1. Enable Regional Planning Efforts
2. Fund and Assist Regional Intermediary Organizations
3. Develop Integrated Programs of Study
4. Disrupt Barriers to Access and Attainment

## Build Regional Infrastructure

1. Enable Competency-Based Credit Flexibility
2. Build Integrated Data Systems
3. Invest in Regional Professional Development

## Coordinate State-Level Workforce Readiness

1. Establish Workforce Goals with Equity Targets
2. Establish Cross-Sector Governance
3. Integrate College and Career Standards
4. Leverage Perkins V to Advance Pathways
5. Blend and Braid Revenue Streams

## Modernize Human Capital Systems

1. Modernize Teacher Preparation
2. Redesign Teacher Licensure and Credentialing
3. Diversify the Teacher Workforce
4. Invest in Cultural Competency Training

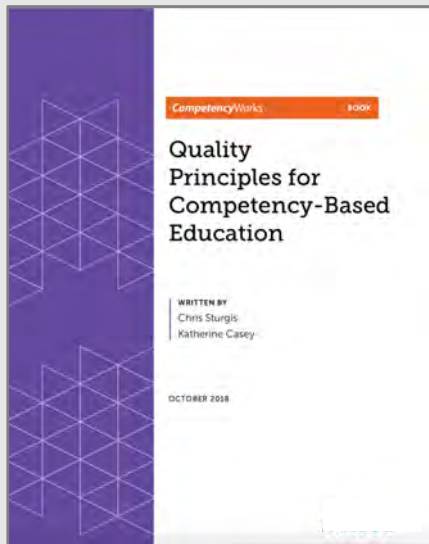
## Stimulate Innovation

1. Authorize Innovation Zones
2. Fund Innovation
3. Increase Connectivity

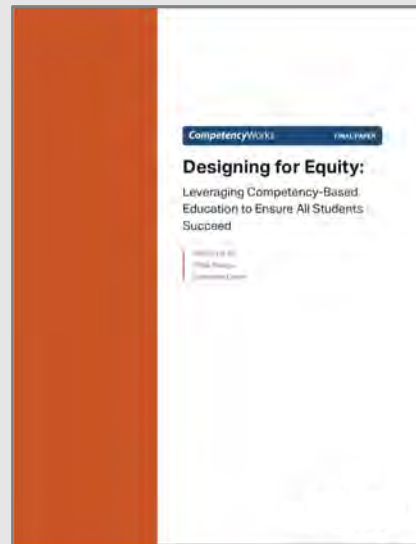
## Enact Equity

1. Promote Equitable Economic Development
2. Invest in Healthy and Connected Communities
3. Promote Racially Equitable Recovery

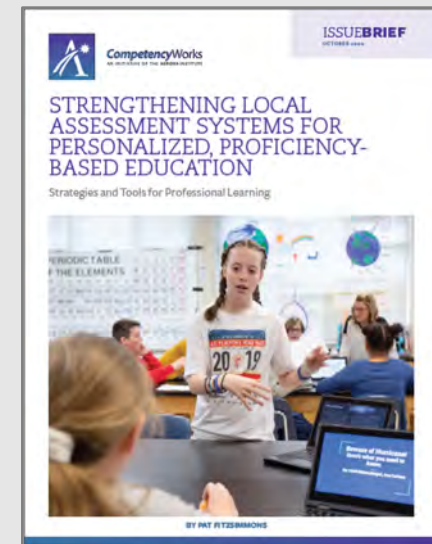
# AURORA INSTITUTE RESOURCES



**QUALITY PRINCIPLES FOR  
COMPETENCY-BASED  
EDUCATION**



**DESIGNING FOR EQUITY:  
LEVERAGING  
COMPETENCY-BASED  
EDUCATION TO ENSURE  
ALL STUDENTS SUCCEED**



**STRENGTHENING LOCAL  
ASSESSMENT SYSTEMS FOR  
PERSONALIZED, PROFICIENCY-  
BASED EDUCATION: STRATEGIES  
AND TOOLS FOR PROFESSIONAL  
LEARNING**

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# 16 Quality Principles for Competency-Based Education

## PURPOSE & CULTURE PRINCIPLES

1. Purpose-Driven
2. Commit to Equity
3. Nurture a Culture of Learning & Inclusivity
4. Foster the Development of a Growth Mindset
5. Cultivate Empowering & Distributed Leadership

## TEACHING & LEARNING DESIGN PRINCIPLES

6. Base School Design & Pedagogy on Learning Science
7. Activate Student Agency & Ownership
8. Design for the Development of Rigorous Higher-Level Skills
9. Ensure Responsiveness

## STRUCTURE DESIGN PRINCIPLES

10. Seek Intentionality & Alignment
11. Establish Mechanisms to Ensure Consistency & Reliability
12. Maximize Transparency
13. Invest in Educators as Learners
14. Increase Organizational Flexibility
15. Develop Process for Ongoing Continuous Improvement & Organizational Learning
16. Advance Upon Demonstrated Mastery



# 9 Equity Principles

In order to seek educational equity, districts and schools will...



Nurture Strong Culture of Learning and Inclusivity



Engage the Community in Shaping New Definitions of Success and Graduation Outcomes



Invest in Adult Mindsets, Knowledge and Skills



Develop Shared Pedagogical Philosophy Based on Learning Sciences



Support Students in Building Skills for Agency



Establish Transparency About Learning, Progress and Pace



Monitor and Respond to Student Progress, Proficiency and Pace



Respond and Adapt to Students Using Continuous Improvement Processes



Ensure Consistency of Expectations and Understanding of Proficiency

# *Education Policy Issues for the COVID-19 Era:* *Policy Actions and Responses to Leverage the Moment for Future Readiness*

1. Using Blended, Competency-Based Learning as an Entry Point for Innovation
2. Moving Away from Seat Time Credits to Awarding Credit Based on Demonstrated Mastery
3. Re-Examining Grading Policies
4. Rethinking Assessment and Addressing the Need for Balanced Systems of Assessments to Measure Student Learning
5. Examining the Purpose of Accountability
6. Creating Flexibility and Multiple Pathways for Graduation Requirements
7. Ensuring All Communities Have the Necessary Technology Infrastructure and Internet Access
8. Supporting Students with Disabilities
9. Ensuring Students Have Continued Access to Meals during School Closures
10. Prioritizing Future Readiness for Pandemic Preparedness and Continuity of Learning



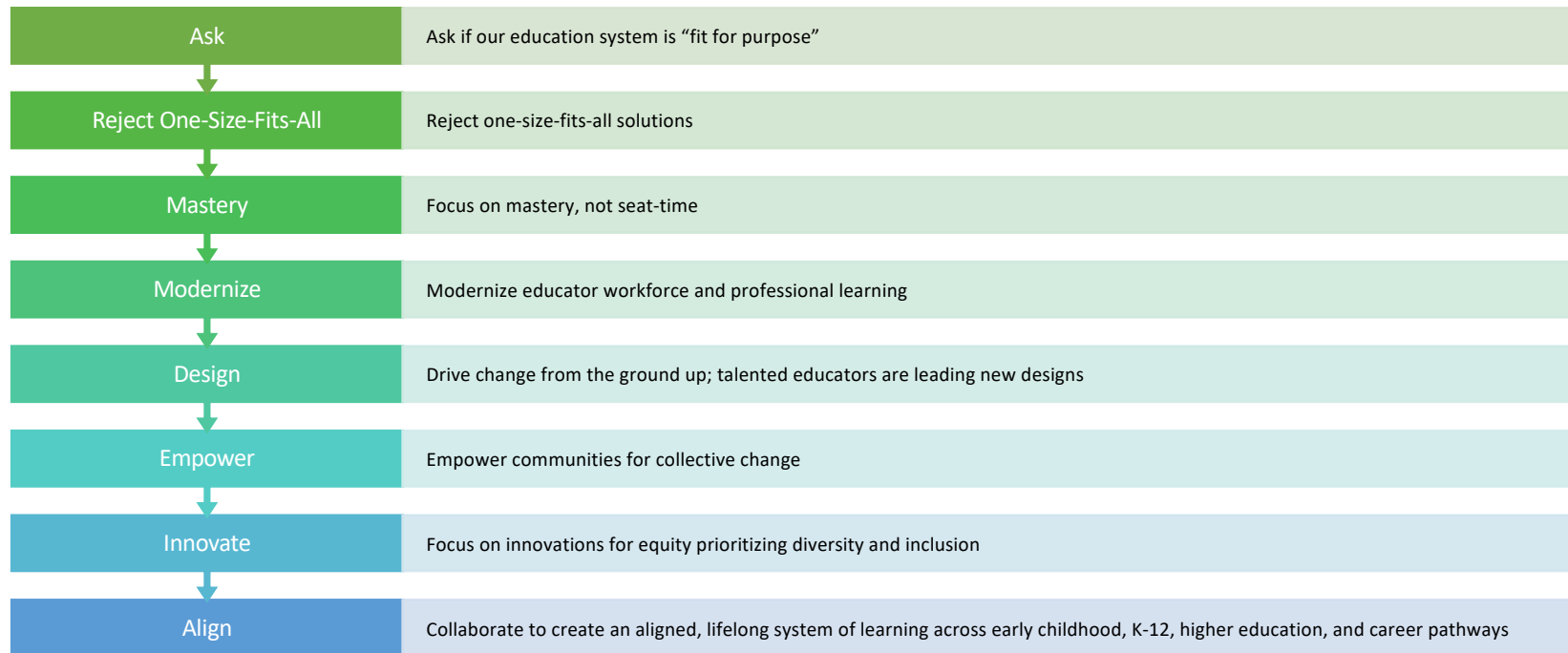
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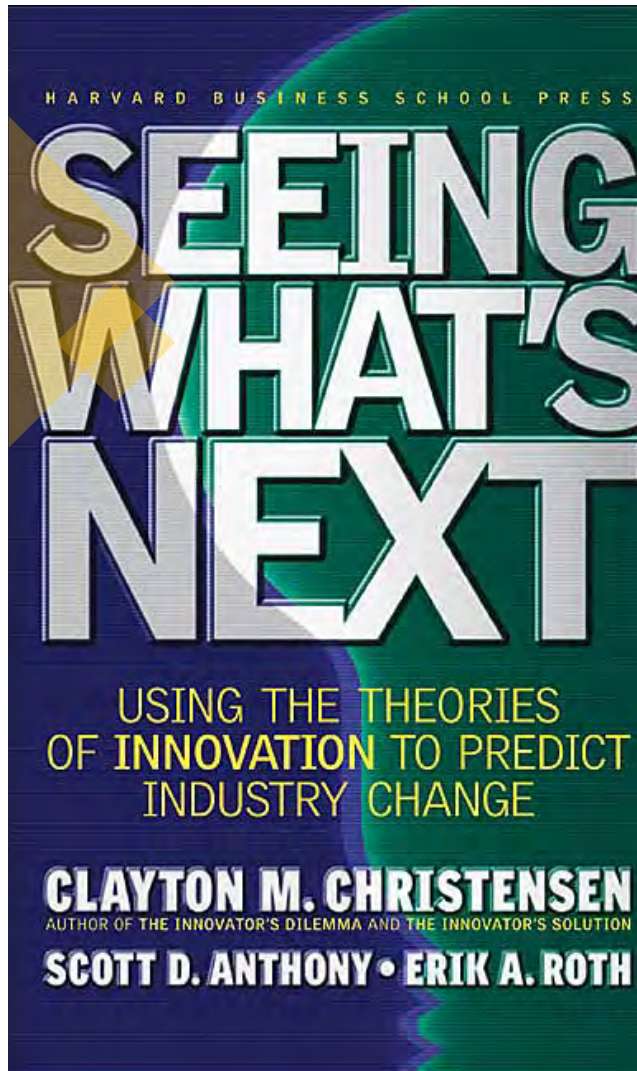
# Future Trends

*A 10-step program for building capacity for educators to redesign toward a competency-based, learner-centered system.*



# Trends Driving the Future





“Using the Internet to deliver courses seems to contain great disruptive potential. It could allow a radical transformation to happen in an incremental, rational way.”

- Clayton Christensen, Harvard Business School





*Symposium*

**SAVE THE DATE**

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**October 25-28, 2021      Palm Springs, CA**