



Next Generation Learning: The Pathway to Possibility

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- Twenty-first-century expectations, dysfunctional financial models, the demands and abilities of today's students, and the breathtaking pace of technology innovation make fundamental change in secondary and postsecondary education not only necessary but inevitable.
- Education reform typically tinkers within traditional practice. Next generation learning, however, reflects completely different ways of thinking about goals, methods, and environments, which can open up a whole new range of possibilities for students and the people and institutions serving them.
- New, comprehensive models and “building-block” innovations, powered by technology and visionary educators, are providing more and more opportunities to see what next generation learning can look like in practice. These models have shaped a framework to support the design and implementation of next generation learning, presented in this paper.

“Next generation learning” isn’t about educating the next generation of students. It’s about engaging with *today’s* students through “next gen” teaching and learning designs that promise significantly higher achievement for many more students than current-generation approaches have been able to generate. Next generation learning is catalyzed and informed by:

- **A deepened understanding of *learning*:** how, where, and why students (and people of all ages) learn most effectively
- **A deepened understanding of *learners*:** what’s required to engage and meet students’ complex, individual needs, especially given the vibrant diversity of the nation’s current and future population of young people
- **The recognition that the world has changed:** so thoroughly, in fact, that it requires a much higher level of achievement for much higher percentages of students

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Next generation learning experiences are now being explored, assessed, and refined across the country by educators, researchers, and entrepreneurs at both the K–12 and postsecondary levels. They are also the focus of [Next Generation Learning Challenges](#) (NGLC), a national initiative that seeks to identify and accelerate the technology-enhanced solutions needed to redefine learning and significantly improve student outcomes in the United States.¹ The creators of NGLC recognized that poor high school graduation and college completion rates haven't improved over time for the vast majority of the nation's students, and the creators also recognized a need for strong examples of innovative solutions that improve the quality of learning experiences at the scale needed.

Innovators who have received grant funding from NGLC are conducting field-based experiments in next generation learning. NGLC used the approaches and experiences of these innovators to create a framework that assembles and organizes the myriad aspects of designing, implementing, and enabling next generation learning strategies at scale—for both secondary and postsecondary education.

The framework is intended to serve as a foundation for next generation learning practice. Recognizing the diversity across and within secondary and postsecondary education—including districts, charters, external operators, liberal arts colleges, and research universities—the framework will likely be used differently across the education spectrum. However, it is a guidepost for those planning new innovations at any level, reminding innovative educators and entrepreneurs of the totality required of the work and how one dimension interacts with and relies on all of the other dimensions of the framework. (On page 19, the four organizational partners behind this national initiative offer their perspectives on the importance of this framework and its potential uses by educators, innovators, researchers, and policy leaders at all levels.)

NGLC welcomes additional comments on the framework, which will continue to be refined as the field learns more about what it takes for next generation learning to lead to significantly higher achievement for larger numbers of students at affordable costs. This white paper is itself a revision of a previously released version, based on the feedback of the next generation learning community. Ongoing feedback may be submitted directly to nglc@educause.edu.

What Next Generation Learning Looks Like

The goal of the framework is to help educators change the experience of learning so that more students, especially those who are currently underserved, can achieve substantially better outcomes. That altered learning experience is described from the student's perspective in the 10 attributes shown below. These attributes are technology-agnostic by definition, but (as the NGLC grantees and similar innovators are establishing) they are technology-enabled for effectiveness, efficiency, and scale.

¹ Next Generation Learning Challenges is led by EDUCAUSE in partnership with the League for Innovation in the Community College, the International Association for K–12 Online Learning (iNACOL), and the Council of Chief State School Officers (CCSSO). Funding is provided by the Bill & Melinda Gates Foundation and The William and Flora Hewlett Foundation. For more information, visit nextgenlearning.org. The three understandings described at the outset of this paper were first developed for the Partnership for Next Generation Learning, a project of one of NGLC's partner organizations, CCSSO.

Attributes of Next Generation Learning from a Student's Point of View

- **Personalized** to my needs and learning goals
- **Flexible** so that I can try different ways to learn
- **Interactive and engaging** to draw me in
- **Relevant** to the life I'd like to lead
- **Paced by my own progress** measured against goals I understand
- **Constantly informed** by different ways of demonstrating and measuring my progress
- **Collaborative** with faculty, peers, and others, unlimited by proximity
- **Responsive and supportive** when I need extra help
- **Challenging but achievable**, with opportunities to become an expert in an area of interest
- **Available** to me as much as it is to every other student

What's Required to Bring About Next Generation Learning at Scale

Individual “breakthrough” models of next generation learning dot both the K–12 and postsecondary landscapes.² By and large, they are too new to show long-term outcomes, though many show promising short-term results in student achievement, behaviors, and persistence.

What would it take for next generation learning to take root more broadly? NGLC believes the answer requires six parts (see Figure 1)—six dimensions of goal-setting and measurement, methodology, and the active support of the systems that surround the learning.

Goals

1. **Defined learning goals** for deeper and more comprehensive outcomes indicating readiness for college, career, and civic life
2. **Measurement of progress against those goals** for formative and summative use

² At the higher education level, these early pioneers include Western Governors University, Rio Salado College, and Ivy Bridge College. At the K–12 level, they include Carpe Diem, the New Tech Network, High Tech High, and School of One, among others. These models all differ from each other in terms of program design, but they incorporate many of the 10 attributes of next generation learning described in this paper. They are being joined by grantees from NGLC's Wave III of investments, including 20 new blended, competency-based, personalized-learning-focused [secondary schools](#) and 10 new models of technology-enabled [postsecondary degree programs](#).

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Methods

3. **Learning designs** that are personalized and competency-based; that agilely provide supports and resources to students who need them; and that are enabled by the deeply integrated use of technology
4. **Effective implementation** that encompasses the restructuring of roles (among educators and students alike), budgets, schedules, and other resources and infrastructure needed to support the new learning designs and that incorporates ongoing cycles of feedback and revision

Environments

5. **Enabling conditions**, both internally (organizational) and externally (public/community), that allow the new designs to be piloted with fidelity to the ideas at their core
6. **Rapid scaling** of the most promising designs through sufficient investment, change-management capacity, evidence, openness, and cost-effectiveness

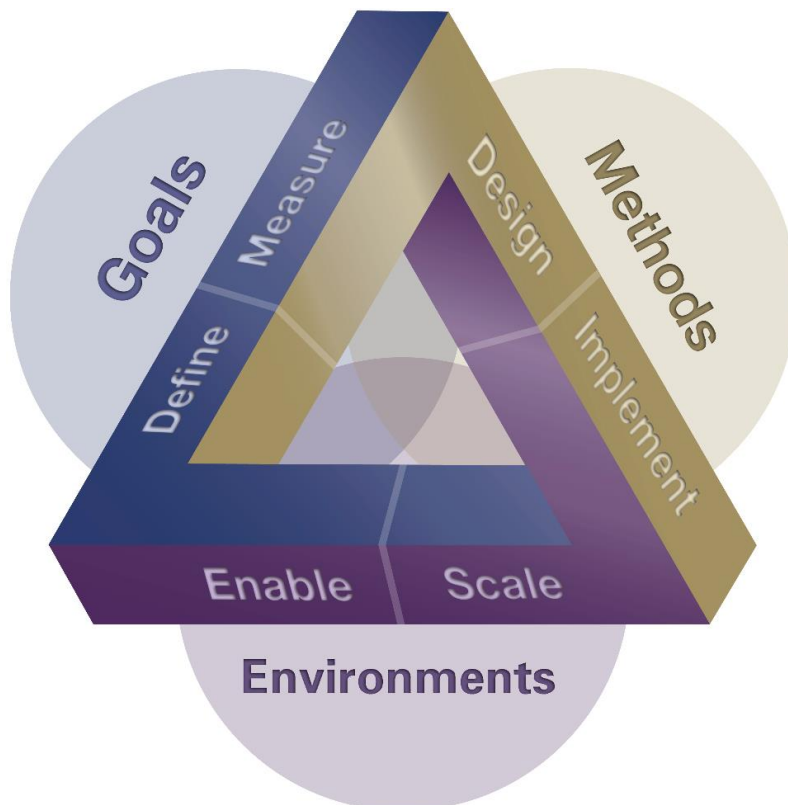


Figure 1. The Six Dimensions of Next Generation Learning

A fundamental feature of this framework is the interdependence of the six dimensions: The impact and efficacy of work within any one of them relates directly to the efficacy of work within the others. It is when single-dimension movements are coordinated and working together coherently, or when change initiatives attend to and integrate multiple dimensions, that next generation learning becomes a viable possibility for all students. NGLC proposed a set of required elements within each of the six dimensions. These can be found in Table 1 and are explained in greater detail in the sections that follow.

Table 1. Required Elements of Next Generation Learning

Goals	Methods	Environments
Define • Content knowledge • 21st-century competencies ○ Cognitive (cognitive processes and strategies, knowledge, and creativity) ○ Interpersonal (teamwork, collaboration, leadership) ○ Intrapersonal (intellectual openness, work ethic, positive self-evaluation)	Design • Learning ○ Personalized ○ Competency-based, variable-paced progression ○ Online/blended ○ Active/inquiry-based ○ Collaborative • Learner supports ○ Academic, social, personal ○ Technical/career-related ○ Inclusive/accessible	Enable • Internal/organizational ○ Policy and governance ○ Leadership ○ Startup funding • External/public ○ Policy and regulation ○ Access to innovation ○ Family/Community ○ Public will
Measure • Assessing for learning • Assessing for attainment • Assessing for system performance • Supporting analytics	Implement • Resources ○ People ○ Time ○ Money ○ Curriculum ○ Learning technology • Infrastructure ○ Operations ○ Data ○ Systems technology ○ Facilities • Process ○ Change management ○ Research, development, and dissemination (RDD) planning refinement cycles	Scale • Evidence building ○ Processes ○ Outcomes • Investment ○ Public ○ Private • Openness • Change-management support • Cost effectiveness

Broad-based efforts within single dimensions of the framework do exist today. For example, the [Common Core State Standards](#) and the Lumina Foundation's [Degree Qualifications Profile](#) attempt to *define* learning; growing investment in educational technology start-ups *enables* more innovation; and new instructional approaches informed by learning science are used to *design* learning experiences. These commendable efforts, however, are not enough when they are implemented in isolation from related work in other dimensions. Focusing on designing and implementing online learning, for example, without attention to defining and measuring for deeper, richer outcomes for students risks simply replacing one method of teaching delivery with another. An effort to rapidly scale up the use of a particular strategy or technology in isolation from a comprehensive, coherent design risks undercutting its potential impact and inducing reform fatigue when the next “silver bullet” arrives. The framework

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encourages educators and innovators to focus their work within selected dimensions *while acting purposefully across all dimensions*. While different actors may be involved in each dimension—such as a game developer in the Design dimension and a policymaker in the Enable dimension—it is the responsibility of all actors to be transparent and collaborative in their work.



- Content knowledge
- 21st-century competencies
 - Cognitive (cognitive processes and strategies, knowledge, and creativity)
 - Interpersonal (teamwork, collaboration, leadership)
 - Intrapersonal (intellectual openness, work ethic, positive self-evaluation)

Clearly defining student outcomes provides the north star that *ought* to shape and align every other aspect of design and delivery. Those definitions are shifting in response to strong evidence that a high school diploma does not necessarily signal readiness for college and to growing uncertainty over the affordability of college. Many of NGLC's grantees—particularly the whole-school and comprehensive degree-program models—are explicit about their refined definitions of student success. Those definitions show up in a wide range of ways across these initiatives, including how some are seeking to make learning experiences more relevant to students' post-collegiate plans, while others are working toward building students' "deeper learning" skills. (See the "Define" box of In Practice examples.³)

Are there new definitions that are becoming commonly accepted? In a 2012 analysis and report, the National Research Council (NRC) examined most of the prominent efforts to define "21st-century skills" and developed the set of synthesized constructs that we have adopted here. Content knowledge in the disciplines is combined with 21st-century competencies in the cognitive, interpersonal, and intrapersonal domains as explained in NRC's report, "[Education for Life and Work](#)." The ability to transfer knowledge and skills and apply them in new contexts, according to the NRC, is perhaps the key competency behind "deeper learning."

³ The "In Practice" examples provided in this paper are drawn from NGLC grantees. They are intended to demonstrate in concrete terms how innovators at both the secondary and postsecondary levels are advancing next generation learning design and practice. More information about each project can be found at nextgenlearning.org.

These concepts only have an impact on learning, of course, when they are operationalized in curricula, assessments, and practice. The [Educational Policy Improvement Center](#) provides an operationalized model of college and career readiness grounded in this definition. The Lumina Foundation has identified essential postsecondary outcomes in “[The Degree Qualifications Profile](#),” and the American Association of Colleges and Universities has produced a set of essential learning outcomes that has received a fair amount of attention through its Liberal Education and America’s Promise ([LEAP](#)) initiative.

IN PRACTICE: Define

- [Northern Arizona University’s Personalized Learning Division](#)
 - **Within This Dimension:** The Personalized Learning Division will offer three majors—computer information technology, small business administration, and liberal studies. Learning outcomes are pulled from traditional NAU courses but reconstructed around specific areas of knowledge that cut across the lines traditionally defined by those courses.
 - **Across Dimensions:** NAU has focused intentionally on learning outcomes in designing the Personalized Learning Division and its bachelor’s degree program. The online program is self-paced and prescribed. Instead of separating subjects into courses, students complete activities within each competency. Those activities reinforce how to apply multiple disciplines to address important issues. NAU is seeking to make every outcome relevant to the student and to potential employers. Those outcomes are incorporated into a personalized learning plan that is developed with a faculty mentor, and a social network is built in to provide peer support. Even NAU sports are streamed live to help connect students to a community.
- [Hofstra University’s WISEngineering](#)
 - **Within This Dimension:** WISEngineering enhances secondary school students’ deeper learning of mathematics principles and applications, generating better outcomes among these younger students in conceptual understanding, application of knowledge, knowledge transfer, non-cognitive motivation for learning and disposition towards math and engineering.
 - **Across Dimensions:** In this initiative, students create virtual, open-ended, engineering design projects that apply targeted math concepts and then fabricate their solutions. Students work in teams on these hands-on experiences. It is the combination of clearly defined outcomes and the thoughtful, authentic design of the learning module that enables students to meet and exceed the high expectations set for them.

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Measure

- | | |
|---|---|
| <ul style="list-style-type: none">• Assessing for learning• Assessing for attainment | <ul style="list-style-type: none">• Assessing for system performance• Supporting analytics |
|---|---|

Different approaches to learning and revised definitions of success require new metrics that accurately reflect both the process and the product of learning and attainment. Such a shift would mean enormous changes in measurement design by itself, but that level of change is compounded by new thinking about the role of assessment in learning, both in the United States and internationally. Rather than being used primarily (often solely) for summative purposes—e.g., an on-demand final exam—assessment is increasingly understood to be an essential, ongoing, highly integrated component of the learning process. That use of assessment is what we are calling “assessing for learning.” It is enabled, to a degree, by technologies that allow students to continuously assess their progress, often depicted visually with graphs and dashboards, along a learning pathway. But low-tech assessments, including performance-based measurements involving real-time demonstrations of mastery, are also playing a role. A number of NGLC grantees are experimenting with ways to assess 21st-century competencies and content-knowledge outcomes that provide immediate feedback to the learner and the instructor, enabling deeper student ownership of the learning process and personalized support to students needing help. (See the “In Practice: Measure” box.)

Assessing for attainment, meanwhile, comprises all forms of summative measurement, including those used in postsecondary education for licensure and certification and in K–12 for accountability purposes. Assessing for system performance encompasses analysis of all inputs (cost, time, staff, site, materials, technology) vs. outputs. Supporting analytics, the final broad component of this dimension, signifies the rapidly maturing array of tools that now provide students, educators, and policy makers with dashboards, analyses, and predictive models to interpret data and improve student success.

These approaches to next generation assessment are reflected in the work of many scholars; among the most notable efforts are those of Linda Darling-Hammond and Ray Pecheone of Stanford University (“[Developing an Internationally Comparable Balanced Assessment System that Supports High-Quality Learning](#)”) and Jay McTighe (“[Seven Practices for Effective Learning](#)”), as well as AAHE’s “[Principles of Good Practice for Assessing Student Learning](#).”

IN PRACTICE: Measure

- [Central Piedmont Community College's Online Student Profile Learning System](#)
 - **Within This Dimension:** This system enables faculty and counselors to access real-time student data including academic history, risk factors, demographic data, advising history, and assessment results.
 - **Across Dimensions:** In addition to the technology platform, the system includes an orientation course, student assessment tools, an online student profile, and staff professional development, connecting measures to effective implementation strategies. By collecting and synthesizing meaningful measures of student progress and learning in real time, faculty and counselors are able to tailor instruction and advising and provide timely and effective interventions for students. The goal is to improve retention and student success within developmental education courses.
- [University of Massachusetts-Amherst's Wayang Outpost for K–12 Students](#)
 - **Within This Dimension:** This intervention uses state-of-the-art technology to learn along with the student. As a student progresses through a math problem, Wayang adapts to learning aptitude and learning styles, tailoring follow-up questions and hints based on cognitive, metacognitive, and emotional factors. At the same time, teachers may use the data to adjust the order, difficulty, and pace of the topics Wayang presents to students.
 - **Across Dimensions:** To create a streamlined design, UMass defines the key learning outcomes that Wayang Outpost can help students prepare for as the high-stakes tests of middle and high school mathematics such as state assessments, the SAT, and college placement exams. UMass is also applying these approaches for use in developmental math courses at two- and four-year postsecondary institutions.

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Design

• Learning • Personalized • Competency-based, variable-paced progression • Online/blended • Active/inquiry-based • Collaborative	• Learner Supports • Academic, social, personal • Technical/career-related • Inclusive/accessible
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Much of what we regard as standard practice in schools and colleges was developed without today's understanding of *how people learn*. We have come a long way from the early models of higher education (which produced the lecture) and the early 20th-century template for K–12 education (which produced the Carnegie unit, progression by age-based grade levels, and the traditional classroom).

Learning science research indicates that a truly effective learning environment is learner-centered and learner-driven, structured and well-designed, profoundly personalized, inclusive, and social (as concluded in "[The Nature of Learning: Using Research to Inspire Practice](#)," a 2010 review of the learning science research literature by the Organisation for Economic Co-operation and Development). Next generation learning incorporates this research with designs that are personalized, competency-based with variable pacing, active, multimedia-rich, inquiry-based, collaborative, and increasingly enabled for anytime/everywhere access by today's students through blended designs that integrate online and face-to-face learning.

These designs are pitched at a high level of achievement expectations (that's the point of the "Define" dimension, above) aimed to lead students to success in college, career, and civic life in the 21st century. Because our society now asks education to generate more college graduates than ever before, next generation learning designs include strong, comprehensive systems of support, especially for underserved students, and are inclusive of differences in student background, talents, worldviews, and physical capabilities. To different degrees and in different ways, the designs leverage technology to fulfill their goals. The grant-winning NGLC educators are not simply using technology to supplement current practice; they are incorporating it as a foundational element in new learning designs aimed at generating the learning experiences suggested by the 10 attributes noted above.

These core attributes of next generation learning designs are not new. In 1987, Chickering and Gamson identified similar attributes in their "[Seven Principles for Good Practice in Undergraduate Education](#)," and in 1996, Chickering and Ehrmann discussed technology-enabled approaches in "[Implementing the Seven Principles: Technology as Lever](#)." But with the technology available today, schools and colleges can change the ways in which they apply human, financial, and time resources to serve more students, more effectively.

The Innosight Institute [classifies blended learning models](#) and offers [profiles of these models](#) emerging in K–12 education. The EDUCAUSE book [Game Changers](#) and the report "[Disrupting College](#)" from the Center for American Progress provide good summaries of some new

postsecondary learning designs. Terry O'Banion, president emeritus of the League for Innovation in the Community College, provides a compelling vision of next generation learning in [A Learning College for the 21st Century](#). A new generation of “breakthrough” models at the secondary and postsecondary levels will launch in the fall of 2013 and 2014, catalyzed in part by grants from NGLC; the initial plans for these models can be accessed at <http://nextgenlearning.org/breakthrough-model-designs>. Several of these models are briefly profiled in this paper.

IN PRACTICE: Design

- [Southern New Hampshire University's College For America](#)
 - **Within This Dimension:** This new degree-program model offers a self-paced, competency-based associate's degree in general studies online. The model attempts to address issues facing traditional higher education by reducing cost, increasing access, focusing on learning that is relevant to employers and students, enhancing the quality of that learning experience, and driving toward improved persistence leading to degree completion. A dynamic knowledge map tracks individual student progress to personalize the supports offered to each student. Learning is supported by employers and community members who serve as mentors along with coaches. The program also borrows aspects of gaming theory with an embedded award system that provides students with feedback and encouragement. A hallmark of SNHU's student-centered approach is that students have been involved in the design process, emblematic of their motto, “You are higher education.”
 - **Across Dimensions:** College For America measures student learning and growth in this competency-based model by means of an e-portfolio that tracks students' abilities and skills that employers clearly understand. Furthermore, the degree program creates a new role for students and supports them as they take control of their own learning.
- [University of Southern California \(USC\) Hybrid High School](#)
 - **Within This Dimension:** This school was designed specifically to accommodate the 34% of students in Los Angeles who normally drop out of high school to work or care for their families. HHS dramatically increases access to school for all students by being open up to 12 hours per day, 7 days per week, year-round. Each student has a personalized, data-driven schedule and learning plan. Curriculum is delivered online while students work collaboratively during their hours at school with subject experts and hands-on projects tied to college and future careers.
 - **Across Dimensions:** Much of the school's design is grounded in Hybrid High's recognition that academic growth and social-emotional growth are linked, and therefore both need to be addressed in school. To accommodate the innovative design, the facility is unlike a traditional school, with large, open spaces, small huddle rooms for 2–3 students to work with a tutor, learning labs for digital teamwork, and studios for individual project work. Watch a brief [video](#) about the school.



Implement

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|---|--|
| <ul style="list-style-type: none">• Resources<ul style="list-style-type: none">• People• Time• Money• Curriculum• Learning technology | <ul style="list-style-type: none">• Infrastructure<ul style="list-style-type: none">• Operations• Data• Systems technology• Facilities• Process<ul style="list-style-type: none">• Change management• Research, development, and dissemination (RDD) planning refinement cycles |
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Next generation learning models most often are characterized by changes in traditional structures, organizational habits, and culture, such as role unbundling and redefinition, use of time, allocation of funds, and investments in and use of curricula and instructional technology. For example, instructors would likely take on more deeply differentiated roles in instructional delivery, facilitating learning (where students are actively driving their own progress), team teaching, and providing support. These roles can be difficult to put in place when the prevailing culture is built on traditional roles. In higher education, the independent nature of much faculty work can be a barrier. In K–12 education, job classifications, contracts, compensation, and evaluation are all staked to traditional roles.

The operational infrastructure will deploy differently in next generation learning environments, as will organizational culture, both internally and in the ways that the innovation connects with its ecosystem of community, funding, and strategic partners. The level of change demanded by an innovation requires a certain level of change management, and some change may be more disruptive than others. In the comprehensive breakthrough models funded most recently by NGLC, these changes tend to be part of a larger process that reflects a “big-leap” reinvention of everything at once (see the references in this paper to Northern Arizona University, Leadership Public Schools, USC Hybrid High School, or Southern New Hampshire University, for example). Early grants awarded by NGLC funded projects that reflected a more incremental change process (see the descriptions of innovations from CSU Northridge and Gooru). Many of the NGLC-funded projects have developed well-articulated research, development, and dissemination (RDD) plans that incorporate feedback and iterative redesign.

Change-management theory in next generation learning is relatively nascent. [Clayton Christensen and Henry Eyring](#) and [Alexander Astin and Helen Astin](#) advocate disruptive innovation and organizational transformation in postsecondary education, and Christensen and Michael Horn have done the same in K–12 with [Disrupting Class](#). iNACOL (an NGLC partner) has published important research on [promising practices in online learning](#) and on what [competency-based learning](#) models look like. The University of Central Florida, with help from an NGLC grant, has published a [Blended Learning Toolkit](#) to assist universities in making the transition. Also, the [E-Learning Maturity Model \(eMM\)](#) developed at Victoria University of Wellington in Australia is one example of tools that allow postsecondary institutions to assess their capacity to facilitate change.

IN PRACTICE: Implement

- [California State University, Northridge's Hybrid Lab Courses](#)
 - **Within This Dimension:** This initiative recognizes the organizational culture change needs of postsecondary institutions, especially from a faculty perspective. Its model upends traditional budgeting—providing cost savings that actually exceed the cost of adoption—and requires new approaches to materials development, staff training, the incorporation of technology, and assessment. These strategies are all coordinated within the individual cultures of the institutions adopting the model.
 - **Across Dimensions:** Much of the change-management process is enabled by internal organizational policies and leadership that allows for this kind of innovation in course redesign and implementation, though sometimes this needs to be navigated carefully. It is in the interplay between implementation and enabling factors that change occurs.
- [Leadership Public Schools' Oakland R&D Campus](#)
 - **Within This Dimension:** R&D is so central to this school it is part of the name. This new 9–12 school defines itself as a collaborative innovator, where teachers and students are intimately involved in the testing and development of digital content and tools. If the right content or tools do not exist, the school will design and develop its own or push vendors to do so.
 - **Across Dimensions:** The spirit of innovation that marks this school's implementation is a result of the learning design of the school model. The design relies on four strategies: personalizing learning, supporting teachers with access to high-quality digital content and real-time feedback, scaffolding key concepts for students, and building opportunities for critical thinking and deeper learning.

Next Generation Learning



Enable

• Internal/organizational • Policy and governance • Leadership • Startup funding	• External/public • Policy and regulation • Access to innovation • Family/Community • Public will
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Supportive conditions within institutions and in the external environment are necessary for new models of next generation learning to thrive. Some policies and structures can prevent next generation learning models from operating at all. Because the goals, measures, designs, and implementations of these models reimagine much of our traditional understandings about what education looks like, changes in the environments surrounding the learning model are as critical as changes to the learning model itself. Making changes like these is no small task. Many entrenched policies are very difficult to adjust incrementally, let alone reinvent.

Policy-related adjustments are likely needed at both the organizational and public levels. For example, seat-time policies (higher education credit hours and K–12 instructional minutes) hamper a shift to student progression based on mastery of competencies. Governance, accountability, and accreditation policies need to be flexible enough to allow piloting of next generation learning. Within institutions (colleges and universities, states, districts), leadership must be farsighted enough to sustain the innovations through their peaks and valleys. Institutional investment, coupled with other sources of revenue, needs to be sufficient for pilots to have a reasonable chance of success. Educators' access to innovators and researchers outside their institutions can help ensure that the most promising models emerge. And the public must be encouraged to understand the basis for these changes (see Define, above) so that the unfamiliar is accepted and even embraced.

Scholars, reform initiatives, and policy-based organizations are beginning to identify the necessary conditions for this form of educational change and are tackling the challenges that current conditions present. The Council of Chief State School Officers, for example, has established the [Innovation Lab Network](#) among ten states and is working not only to pilot and share innovative strategies across schools in the network but also to consider the local and state conditions necessary for those innovations to succeed. Policy conditions are described in "[Disrupting College](#)" and are also addressed by organizations such as the [Alliance for Excellent Education](#), the [International Association for K–12 Online Learning \(iNACOL\)](#), the [Fordham Institute](#), and the [American Youth Policy Forum](#). Gartner Research addresses other macro forces affecting the development and adoption of learning technologies in its [2012 Hype Cycle for Education](#) report.

IN PRACTICE: Enable

- [OhioLINK's Scaffold to the Stars](#)
 - **Within This Dimension:** An important external enabler of Scaffold to the Stars is how it fits into several other reform initiatives in the state of Ohio. It also is organized by a state-supported body rather than a single institution, making it easier to address policy and governance issues.
 - **Across Dimensions:** This initiative develops and makes multimedia open educational resources in mathematics and engineering with continual feedback available to faculty at Ohio colleges. Using open educational resources in the design is a key decision with scale in mind: It enables accessibility, increases potential for adoption in colleges and universities across and beyond Ohio, and provides cost savings and flexibility for students.
- [Fayette County Public Schools](#)
 - **Within This Dimension:** Fayette County Public Schools enjoys a state policy environment that allows for a different kind of high school in part by offering a process for waiving some traditional policies if they justifiably get in the way of such innovation. These innovation waivers allow for practices such as mastery and experiential-based learning and dual/college credit opportunities planned for the STEAM Academy, for example, to be implemented as designed.
 - **Across Dimensions:** The design for the STEAM Academy is flexible and adaptable, technology-rich, responsive to student and teacher needs, and recognizes and extends learning beyond the traditional school day and classroom. It is made possible in this district school by the partnership with the University of Kentucky and supportive policies in the state.

Next Generation Learning



Scale

- Evidence building
 - Processes
 - Outcomes
- Investment
 - Public
 - Private
- Openness
- Change-management support
- Cost effectiveness

If next generation learning is confined to isolated pockets, it won't result in any appreciable change in our national educational "output," nor will it reach those students who need it most. This limitation applies to scaling at all levels: from individual classrooms to department or school, from department to institution or district, and from institutions or districts to much broader swaths of the field.

In order for next generation learning to scale up, both within and across the institutions and agencies that deliver it, the new models must produce—as rapidly as possible—a base of evidence of significantly improved outcomes. This depends on the development of evidence-gathering processes that allow for iterative reform processes (i.e., "fail faster to succeed sooner") and that align with the 21st-century outcomes expected of these models.⁴ Public and private investment must be sufficient to fund the RDD cycle and to motivate early adopters. Cost effectiveness will motivate the more cautious adopters once the innovations' results are widely accepted as credible. Openness—sharing strategies, lessons, and pitfalls in this period of intensive RDD and making tools and resources freely accessible—will accelerate the development of more effective models. Finally, a set of organizations that guide educators and their systems through the change to successfully adopt these innovations must flourish so that many institutions, schools, and school districts can migrate toward next generation learning strategies over the coming decade.

It is difficult, if not impossible, for deeply entrenched systems to reinvent themselves. Though the usual policy levers—mandates, regulation, licensure, fiscal policy—can play a role in allowing experimentation to occur and, eventually, in codifying and expanding successful reforms, they are not the levers that will catalyze the innovation itself. In today's hyper-connected society, innovation is more likely to come from distributed networking within and across communities of practice. A 2012 [literature review](#) from the Social Impact Exchange, Duke University, and the Growth Philanthropy Network notes a growing trend in scaling social impact through collaboration, with the potential benefits of reduced costs and stronger incentives to develop new approaches to achieve the desired outcomes. [Scaling Up Success: Lessons Learned from Technology-Based Educational Improvement](#) by Chris Dede, James Honan, and Laurence Peters provides examples, case studies, and best practices for effective scaling of education technology innovations in K–12.

⁴ Design-based research has been held up as potential contributors in these processes; see [Design-Based Research: A Decade of Progress in Education Research?](#) by Terry Anderson and [Conducting Educational Design Research](#) Tom Reeves and Susan McKenney.

Educators know that they cannot rest after successfully working through the framework and making that dramatic shift from current practice to next generation learning models. Indeed, change management and iterative redesign are ever more important “constants” for next generation learning in practice. The pace of technological change and the pace of advancement in learning science demand an unending state of change. We know that we will have new tools and new understandings in just five years that may guide us to make different decisions when enacting the six dimensions. A dramatic shift is required now, but adopting next generation learning should not lead to yet another static, inevitably outdated approach to education 100 years from now. It requires a *culture* of change.

IN PRACTICE: Scale

- [University of Central Florida and American Association of State Colleges and Universities Blended Learning Toolkit](#)
 - **Within This Dimension:** The University of Central Florida developed a toolkit for designing and implementing blended learning to enable faculty at any institution to adopt its successful model of blended learning, thereby making scale possible. By partnering with AASCU, a national association, a large number of actively engaged AASCU member institutions—20, in fact—became involved as partners in the project. More than half of the participants in a faculty development course that used the toolkit as the basis for its curriculum were from schools outside the partnership, suggesting the broad applicability and impact of this approach.
 - **Across Dimensions:** The toolkit project involves most dimensions of the next generation learning framework. It is a repository of best practices, course design principles, prototype course templates, train-the-trainer materials, assessment and data collection protocols, and research literature.
- [Gooru](#)
 - **Within This Dimension:** Gooru’s mission is to make high-quality education available to the world’s **one billion** students. It is doing this by enabling users to search more than 50,000 standards-aligned web resources for 5th to 12th graders—videos, slides, digital textbooks, interactive activities, and more—organized and vetted by educators into 2,600 collections for learning.
 - **Across Dimensions:** To be accessible to anyone, anywhere, Gooru’s design provides an intuitive search engine that doesn’t require training or support. It is freely available, and it is a web app that can be used on any device with a standard browser.

What's Next

The framework articulates for educators, researchers, and entrepreneurs how next generation learning might take root more broadly so that more students can be successful in reaching their educational goals. The result of using the framework will not be a cookie-cutter landscape of identical practices. Instead, the framework invites a breadth of options that will vary by the culture of organizations, personalities of communities, needs of students, and the interaction of all stakeholders to create multiple models that work. Recognizing the role that all six dimensions play in next generation learning may assist in prioritizing resources, guiding development work, and predicting effectiveness. It provides an outline to guide discussion, planning, and decision making. Readers may refer to [Exploring and Designing Breakthrough Models in Higher Education](#), a toolkit, to plan and facilitate conversations with colleagues about creating breakthrough degree programs like the NGLC-funded models used as examples in this paper.⁵

Rising expectations for the nation's education system, the obsolescence of traditional financial models at both the K–12 and postsecondary levels, the transformation in faculty culture, and changing demands from 21st-century students are setting the stage for fundamental challenges to our historical assumptions about what education looks like. Even these forces might not be enough to upend longstanding structures and practices in education at all levels were it not for the deepening impact of technology. After decades of use as a supplement to traditional practice, technology now appears poised to be the game changer that makes new solutions to these challenges possible, and that produces its own new challenges in the process. That has been technology's role in other sectors, from communications to finance to healthcare. We are all privileged to be living in the moment when “next generation” approaches to learning become so commonplace that they become understood as, simply, learning itself. And we hold a fateful responsibility to ensure that these next generation approaches are accessible by all who want to learn—no matter what generation they represent.

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⁵ A comparable toolkit for planning K–12 school models is currently being developed. It will be available at nextgenlearning.org later in 2013.

From the NGLC Partners

Technology can change learner access, the learning experience, and institutional models. Used well, IT can result in more affordable education, deeper learning, and greater student success. EDUCAUSE, the higher education technology association, is committed to the use of IT to advance education. Next generation learning is something we aspire to—both to serve the next generation and to be sure our learning strategies are on the leading edge. The framework for next generation learning provides a way of thinking about the elements that come together to support next generation learning.

—Diana Oblinger, EDUCAUSE

The Next Generation Learning Challenges programs are offering breakthrough models that help push the field forward to dramatically improve education for students in the 21st century. A key principle of developing new, innovative models of next generation learning environments for students is that technology alone is not a silver bullet. The use of advanced technologies to dramatically improve student learning outcomes requires design principles that address every aspect of a learning system—starting with the student and the people surrounding our youth. Student-centered approaches must redesign the instructional models around a student’s unique learning needs. Supported by internationally benchmarked academic standards and expectations, students can unleash their creativity in how they learn and how they master material using a vast array of digital content, adaptive assessments, open education, schools, museums, internships and libraries—bridging formal and informal learning. With mastery-based learning as a critical design element, this paper highlights how new models are clearly in line with competency education. Student goals are clearly defined, measured and demonstrated—and students are liberated to advance when they achieve.

The framework presented here seeks to outline the elements and offers practical guidance to understanding what steps a burgeoning program needs for planning next generation learning models. The examples throughout the paper help showcase how schools can be centered on the students and their needs, personalizing learning for each of them and making learning an interactive and engaging experience. The authors help to demystify the process of change by providing examples of programs that have already taken the plunge. Considering the rapidly changing landscape of education, the key elements in the framework allow for the sharing, fostering, and cultivating of innovative, breakthrough next generation learning models.

—Susan Patrick, International Association for K–12 Online Learning

“Don’t let school get in the way of your education.” This quote was penned by Mark Twain in the late 1800s, shared in 1992 by my supervising graduate school professor during an education seminar, and has resonated with me throughout my community college career. Perhaps the quote echoes so profoundly because, as I work the field of higher education, I recognize that the famous author quit school at age 12 and, following his father’s death, sought employment as the head of household and primary support for his family. He found work through the trades, first as an apprentice printer (taking food rations as pay), and then becoming a riverboat pilot, journalist, lecturer, entrepreneur, and inventor. Twain’s story parallels that of so many community college students who come through the open-access doors of community colleges seeking a next generation learning model—and a new pathway to possibilities.

Next Generation Learning

As the League for Innovation in the Community College recognizes the value and long-term contributions of next generation learning, we envision our mission to inspire, inform, and celebrate learning within higher education and a 21st-century initiative. Within this initiative and as we support community colleges across the globe, we also reflect on Twain's words. Looking back, we recognize that pathways and possibilities are not always clear, linear paths for learners. Often the obstacles and challenges that make way for the hopeful goals, responsive environments, and proven methods that the Next Generation Learning Challenges partners and grantees have brought forward shape and invigorate our connections, practices, and research for next gen learners.

—Stella A. Perez, League for Innovation in the Community College

The Council is pleased to be a partner in Next Generation Learning Challenges and congratulates NGLC on the release of a paper that will be very useful to state education agencies as they pursue the goal of college and career readiness for every child. NGLC is bringing forward field-based models of next generation learning to serve as proof points for the largely untapped power of technology to advance deeper, more personalized learning at scale. We place high value on the concept—represented more and more often by NGLC—that state education agencies have an active and critical role in creating conditions in which grassroots innovators have the flexibility to pursue solutions to some of education's most pressing problems of practice, in learning from these leading edge implementations, and then in translating the most promising into policy. We are hopeful that, as the NGLC knowledge base expands, more and more will be known about what states can do to provide the infrastructures that are truly capable of delivering high-quality, world-class educational opportunities and the range of learning options to every child.

—Linda Pittenger, Council of Chief State School Officers