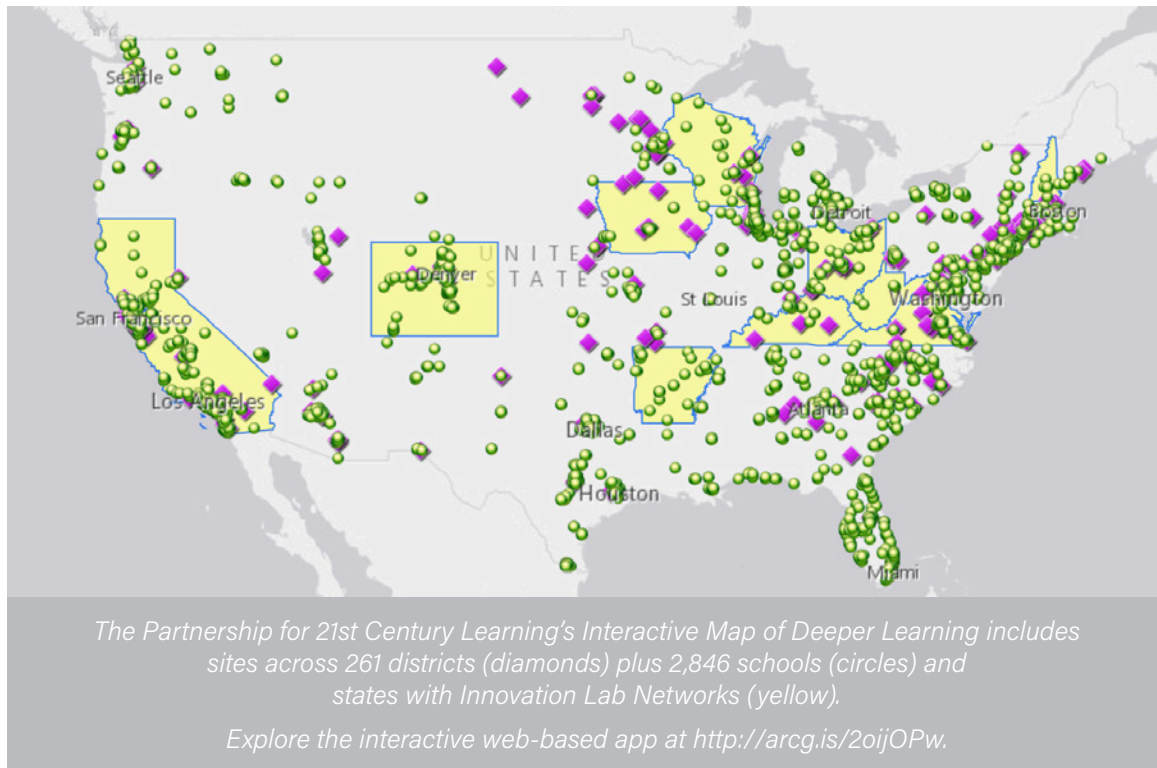# DECODING
DEEPER LEARNING
IN THE CLASSROOM

Want to visit a school or interview a teacher?

Deeper learning is happening across the country. If you'd like to visit a school or schedule an interview, please contact Neha Gohil at nsgohil@hewlett.org.

The Partnership for 21st Century Learning's Interactive Map of Deeper Learning includes sites across 261 districts (diamonds) plus 2,846 schools (circles) and states with Innovation Lab Networks (yellow).

Explore the interactive web-based app at http://arcg.is/2oijOPw.

Acknowledgments

Copies of this guide are available at deeperlearning4all.org/resources and ewa.org/reporter-guides.

CONTENT

POSITIVE MINDSETS

CRITICAL THINKING

LIFELONG LEARNING

COMMUNICATIONS

COLLABORATION

DEEPER LEARNING

Most of the photos in this guide come from a new, free, online resource: "American Education: Images of Teachers and Students in Action"

DeeperLearning4All.org/Images

INTRODUCTION

Deeper learning. Student-centered learning. Flipped classrooms. Personalized learning. Project-based learning. And on and on.

American classrooms are changing. Educators are using different labels and slightly different approaches, but there's a common thread—making learning more relevant, rigorous, and effective for students. These approaches are all trying to build deeper learning competencies in our graduates, skills that are useful in the classroom and in real life and that allow students to take ownership of their learning.

Some of the first things you may notice in a deeper learning classroom are:

- **Lots of peer-to-peer conversations about big issues that defy yes/no answers and ask students to think more analytically.**

- **Interdisciplinary topics, with some classes going longer than traditional class periods.**

- **Students working in groups, asking questions, and pushing each other to defend their answers.**

Just because a classroom is noisy or the teacher isn't always lecturing doesn't mean the kids aren't learning. Quite the opposite.

The idea is to push students to think differently, to apply what they know, and to create new ideas, instead of just receiving information. That's difficult to see, but easy to elicit with a few key questions.

This guide provides an idea of what deeper learning classrooms look like and questions you can ask to figure out what students are actually learning. Use the questions as your cues to figure out where the classroom changes are just interior design and where they are allowing students to master content in different and more long-lasting ways.

APPLYING CONTENT KNOWLEDGE

Are subjects almost always siloed—math for 45 minutes, followed by science for 45, and then English for 45? Do you hear lots of bells for period changes?

OR Are students learning through projects where teachers help students solve real-life problems? And are students learning how to apply learning in one subject to solve new problems, in school and out?

🔭 LISTEN FOR BIG-PICTURE QUESTIONS

Although it looks different from a typical classroom, the goal is that the students acquire at least the same content expertise (math functions, English grammar, the building blocks of chemistry and biology) as in a traditional classroom, but in more engaging ways.

■ To achieve this, classes often are organized around key questions. For example: Instead of asking students to write an autobiography, students are asked: *"How do stories define our world?"*

■ Instead of asking, *"How many immigrants entered the United States from 1800 to 1850,"* a classroom committed to deeper learning might ask: *"What motivates people to immigrate?"* Students then use the statistics to back up their answers.

■ Instead of teachers saying, "This will be on the test," they are regularly asking students to answer questions to show what they've retained.

To help students address these challenging questions, teachers sometimes work across disciplines, so that math teachers are teaming with English teachers, graphic design teachers with chemistry teachers, and biology teachers with art teachers, for example.

In addition to learning from textbooks, students are reading original sources, watching videos, listening to music, and learning how to conduct their own research, often on the Internet.

And internships and other off-campus learning occur regularly.

THE LOCAL STORY ...

At **King Middle School** in Portland, Maine, 8th grade students learn about alternative forms of energy and how to collect and analyze data in math and science classes; how to design and build generators that transfer energy in *technology education* class; develop research and writing skills in *English;* and write a land-use proposal in *social studies.*

How do stories define our world?

Guiding, big-picture questions and explicit learning standards on the walls

Evidence of student work (with comments) everywhere

Teachers stepping into conversations or stopping work from time to time for "teachable moments" to supplement knowledge

Students spending class time applying their knowledge instead of just taking notes, perhaps by building something and not only writing about it

Teachers (often more than one), circulating and working with student groups, not just lecturing
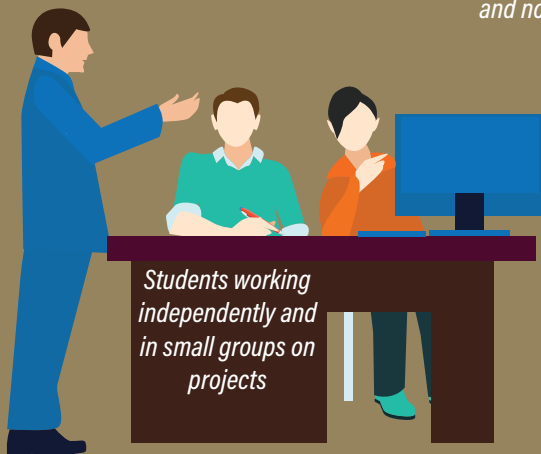
Students working independently and in small groups on projects

Multiple performance assessments to provide feedback throughout the unit so students show what they're learning and are making continuous improvements, not just taking pop quizzes or end-of-course tests

❓ QUESTIONS TO ASK

- Is the school explicitly tracking success in college, careers, or civic life (college acceptances, job offers, etc.)—beyond test scores?

- Do you see evidence that students know the basic facts of the subjects but also are learning the big ideas and key skills they then can apply to other situations beyond this specific course or assessment?

- Are courses typically organized by individual subject (English, math, etc.), or are interdisciplinary lessons commonplace, too?

- Are teachers routinely given time to collaborate in co-designing and co-teaching curriculum?

WORKING COLLABORATIVELY

Do students collaborate only occasionally and only in some classsses, perhaps in a science lab, or just after school on homework?

OR Are students, including those learning English or with special needs, regularly working together on real-world projects that require in-depth content knowledge?

🔭 LOOK FOR EVIDENCE OF THINKING, NOT JUST GROUP WORK

- **Peer learning.** They are encouraged to recognize and build on each team member's unique strengths as they work together toward a shared goal. They can learn as much from their peers as from their teachers or a textbook.

- **Accountability.** Signed contracts allow students to divvy up responsibilities and hold themselves and each other accountable.

- **Listening.** Students are explicitly taught how to listen well—to be a good "critical friend."

- **Inter- and intra-personal skills.** Character and culture are important values that are emphasized as much as academic subjects.

- **Group work.** By working in groups, students are exposed to different backgrounds and perspectives, which help them solve challenging problems.

THE LOCAL STORY ...

At **High Tech High** in San Diego, 42 students worked with local contractors to build a two-story "tiny house" after learning about issues such as energy efficiency, the economics of housing, the environmental impacts of gray water, the properties of structural steel, and how to describe the key elements of their work through animations, plaques, and cold calls to materials suppliers.

In the **New Tech Network,** which works with nearly 200 districts and schools across the country, students establish the classroom norms. They decide, for example, whether decisions will be made by consensus or majority vote or how many warnings it will take for a student to be asked to leave the team.

WHAT YOU'LL SEE IN A CLASSROOM

Students working in small groups—often on projects that involve doing something (taking water samples, conducting surveys, etc.), making something (from wind turbines to tiny houses), or delivering a multimedia presentation
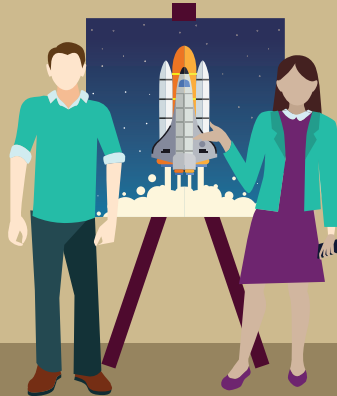
Leading presentations together

Lots of talking and listening; a constant exchange of ideas

Group problem-solving, as students take advantage of their peers' different backgrounds and perspectives (including English language learners and students with special needs)

Students offering constructive feedback on each other's work, pushing each other to explain their thinking

QUESTIONS TO ASK

- Are students regularly working on teams to solve real-life problems—collaborating not just for part of a specific class but for the entire semester or school year?

- Do students have multiple opportunities to build relationships through mechanisms such as advisories where teachers meet with small groups of students every day to address cross-cutting issues from responsibility to resilience?

- Are students learning about social-emotional skills such as holding themselves accountable, working in teams, listening respectfully, and treating each other with kindness?

- In addition to working with each other, are students working with members of the community on shared projects, from affordable housing to water pollution to neighborhood preservation, for example?

COMMUNICATING CLEARLY

Is communications focused on what happens in English class, mainly mastering the rules of grammar and punctuation with an occasional essay?

OR Are students embedding communications skills into everything they do in all of their courses: speaking, listening, reading, and writing?

📡 LOOK FOR COMMUNICATIONS INSTRUCTION IN EVERY COURSE

- **Listening, researching, reading, and writing.** Students might have to conduct an extensive oral history research project detailing their family's immigration to the United States, then turn their research into a short story or multimedia presentation.

- **Editing.** Students routinely are asked to review and critique each other's work. Multiple revisions are the norm.

- **Public presentations of their work.** Students routinely have to describe and defend their thinking with peers, teachers, and the community. Students say that such public presentations reinforce their sense of accountability and make them be more careful with their work. "It was scary. I had a fan group of 8th graders who were watching me," said one Expeditionary Learning student.

THE LOCAL STORY ...

At San Francisco's **International High School,** the multilingual student body analyze how the pigs grabbed power in George Orwell's *Animal Farm.* The 22-school Internationals Network of public schools uses deeper learning techniques to educate newcomer immigrants from more than 100 countries.

At **MC2 STEM High School** in Cleveland, for a 10th grade project on "the Age of Enlightenment," students have to incorporate enlightenment themes and ideas into a multi-genre creative writing portfolio. During the project, students learn about and practice different forms of writing, including monologues, one-act plays, free verse, formal poetry, and short stories. In the science and engineering classes, students have to give an oral presentation on the light box they create to describe the diffusion of light and the creation of shadows and distortions.

🔍 WHAT YOU'LL SEE IN A CLASSROOM

Rules for collaboration

Regular student presentations (orally and/or through multimedia), with vigorous question-and-answer sessions with their peers

Performance guidelines/rubrics and guiding questions on the walls

Multimedia portfolios of student work

Student critiques of each other's work, in writing and orally, using consistent performance guidelines

Communications skills being explicitly taught across all subjects: math, science, history, etc.

And outside the classroom, meetings with public officials, nonprofits, and other community members, where students are given a chance to present their findings and recommendations on an issue they've researched

⑦ QUESTIONS TO ASK

- Are students regularly asked to present, explain, and defend their ideas orally and in writing?

- Are students regularly using multimedia tools (video, podcasts, animation, art, writing) to show their work?

- Are students constantly revising and improving their work? How often? How explicit and central is this expectation?

- Is communications routinely being taught and practiced in all classes and projects—not just in "English class?"

THINKING
CRITICALLY
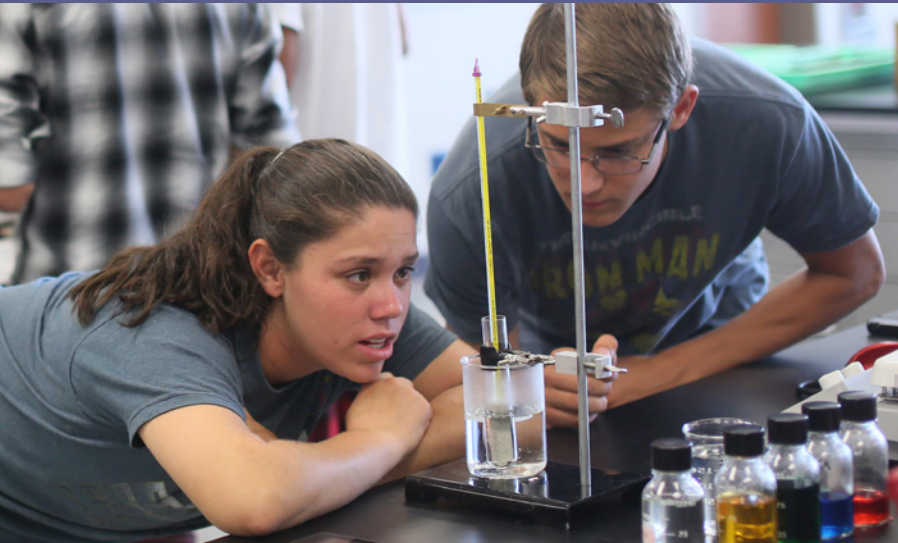
Are courses mainly organized around lectures and exams?

OR Are students having to synthesize and analyze content to solve real-life problems, often through projects?

🔭 LOOK FOR PROJECTS AND PROBLEM-SOLVING

- **Analysis.** Lessons expose students to a variety of tools to formulate and solve real-world problems, including data analysis, statistical reasoning, and scientific inquiry, as well as creativity, nonlinear thinking, and persistence.

- **Presentation.** Students are regularly asked to show what they know through presentations, exhibitions, portfolios, and other demonstrations that prove they can use information to solve real-world problems.

- **Applied learning.** Instead of spending most of their time memorizing or primarily listening to lectures,

they are actively doing—applying their knowledge to solve a relevant, engaging problem: water pollution, neighborhood overcrowding, discrimination, and the like.

- **Active learning.** Instead of only reading about history, students get to be participants—using mock trials, re-enactments, and other projects to bring the past to life. Instead of just learning scientific formulas, students are doing science—conducting experiments and proving their hypotheses.

THE LOCAL STORY ...

After conducting extensive research, 11th graders at **Science Leadership Academy** in Philadelphia lead a mock trial of Cortes, accused of destroying the Aztec Empire—participating as a prosecuting attorney, defense attorney, or witness.

At **Rochester High School,** in rural Indiana, students researched and designed more efficient procedures for the local hospital's emergency room. At **King Middle School,** in Portland, Maine, students participated in year-end Voltage Wars to see whose wind turbine generated the most electricity.

What causes people to immigrate?

Lessons and projects organized around guiding questions

Walls filled with explicit learning targets—for academic content, habits of work, and character development

Teachers talking less, students talking more and often working in teams on long-term projects

Lessons end with an all-class debrief, where students and teachers synthesize and reflect on their learning

Plus, learning often takes place outside the four walls of school: testing designs with engineers from local companies, taking water samples from a local river, recommending more efficient emergency room procedures to a local hospital, or working with city agencies to conduct energy audits of local government buildings

❓ QUESTIONS TO ASK

- Are assessments focused on real-world tasks that are aligned with curriculum and instruction?

- Do you see evidence that students are solving complex problems with no single "right answer"?

- Are students required to defend and revise their work, creating multiple drafts?

- Are students routinely using the knowledge and skills from this classroom to solve real-life problems in other classes … and after graduation?

DEVELOPING
AN ACADEMIC MINDSET

Do students think they are either "smart" or "dumb"—and they can't do much to change their fate? Do they say things like, "I'm not a math person?"

OR Do they believe that they have a "voice" and through hard work, perseverance, and similar traits they can learn to do better in school ... and elsewhere in their life?

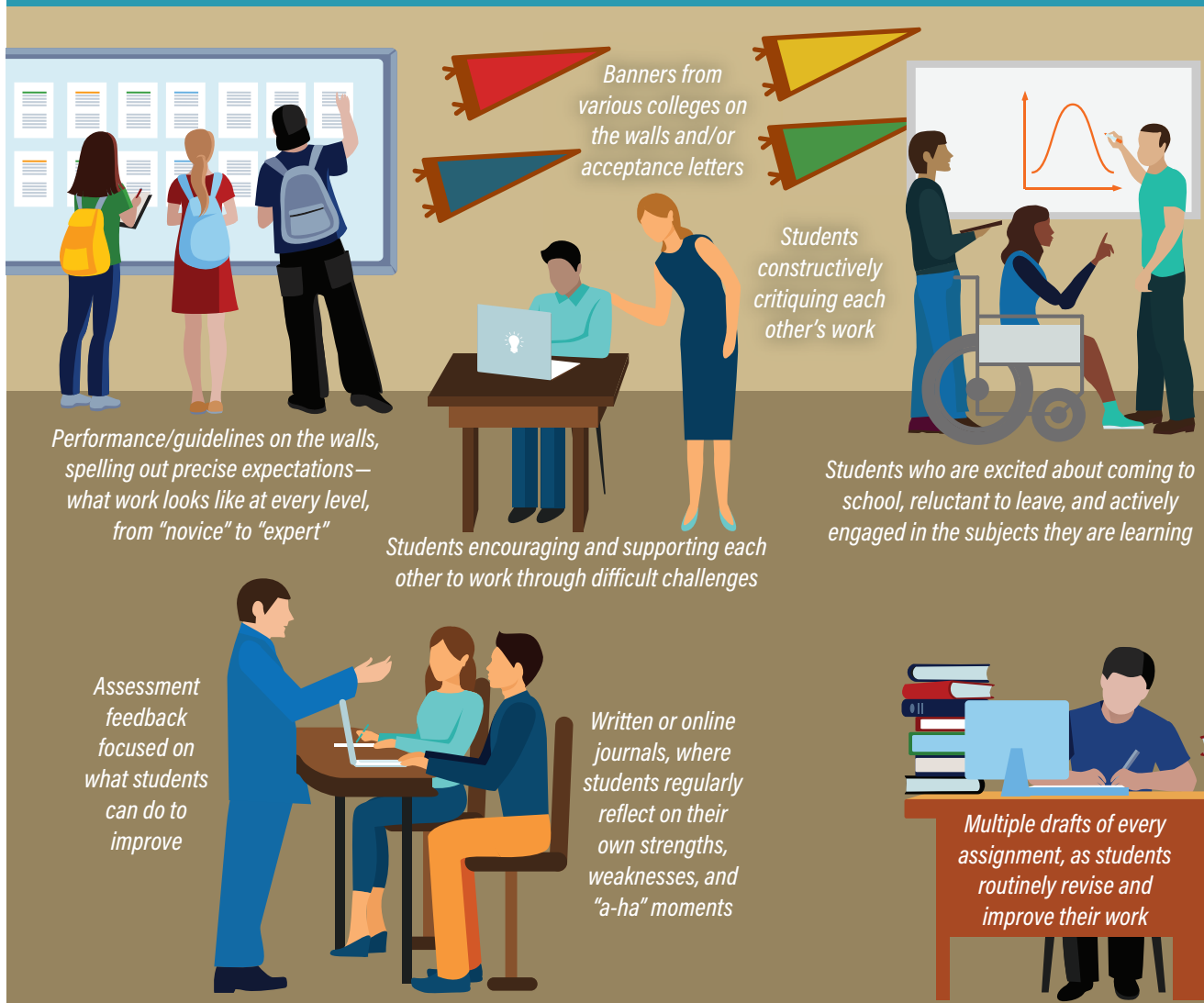## 🔭 LOOK FOR STUDENTS WHO BELIEVE IN THEMSELVES

- **Confidence.** Classrooms are designed to be communities where students feel a sense of belonging and pride in themselves and their fellow students.

- **Risk-taking.** Students have a safe place to struggle with new ideas, try out different solutions, and seek out new challenges because they understand that failure is a normal part of the learning process.

- **Constructive criticism.** They feel safe—not just physically but intellectually. They learn how to accept and learn from constructive criticism. And how to critique others' work respectfully.

- **Leadership, responsibility, persistence.** Students are setting the expectations for how their projects, classrooms, and schools will operate. They are at the table for major decisions affecting their work. They learn that failure is routine and know that they will be expected to keep redoing their work until it meets the expectations.

- **Trust.** Daily advisories feature discussions that focus on cross-cutting themes such as character, kindness, and empathy. Students often stay in the same advisory for multiple years, further deepening the trusting relationships that allow them to take risks and work with teachers and peers to overcome challenges.

THE LOCAL STORY ...

Educators at **Gateway Charter School** in San Francisco, a public school that specializes in educating students with different learning styles, see students' learning differences as a strength and build on those differences to create a college-going culture. "Gateway teachers give students the choice to demonstrate learning in multiple ways. Letting students start from their strengths builds their confidence to later show their mastery in other ways," says a KQED/Mindshift profile.

Performance/guidelines on the walls, spelling out precise expectations—what work looks like at every level, from "novice" to "expert"

Banners from various colleges on the walls and/or acceptance letters

Students constructively critiquing each other's work

Students who are excited about coming to school, reluctant to leave, and actively engaged in the subjects they are learning

Students encouraging and supporting each other to work through difficult challenges

Assessment feedback focused on what students can do to improve

Written or online journals, where students regularly reflect on their own strengths, weaknesses, and "a-ha" moments

Multiple drafts of every assignment, as students routinely revise and improve their work

② QUESTIONS TO ASK

- Do you see evidence that students "own" their learning and believe that their efforts can lead to improvement (constantly revising drafts, considering college as a realistic choice, etc.)?

- Do students having a "voice" in choosing their projects and/or setting the class and small-group norms?

- Does assessment feedback push students to raise their expectations—and provide practical advice for improving the work?

- Do you see efforts to help students feel that they "belong," perhaps through advisories and/or clubs or other school activities?

LEARNING INDEPENDENTLY

Is the goal of the course fairly limited—to learn a specific body of knowledge and be assessed on it?

OR Is there a broader context for learning, with students routinely setting short- and long-term goals, monitoring their progress, and reflecting on how they can improve?

🔭 LOOK FOR STUDENTS TAKING CHARGE

- **Learning independently.** Students learn independently, monitoring and directing their own learning, both in and out of the classroom.

- **Goal-setting.** They are asked to set goals and track their progress to successfully completing tasks or solving problems.

- **Self-reflection.** Students are encouraged to engage in self-reflection, recognize when they need help, and know how to ask for it.

- **Motivation and persistence.** Because learning is more relevant and relationship-based, students are motivated to complete tasks and learn.

THE LOCAL STORY ...

At **King Middle School** in Portland, Maine, teachers have the students write in electronic journals as a way to reflect on their learning and "make their thinking visible." They set up prompts to help the 8th graders reflect. "What did you do? What did you observe? What did you revise as a result? How did you test your revision? What did you learn?" The students are directed to answer by writing specific and detailed entries.

At Portland's **Casco Bay High School,** freshmen make a presentation at the end of their first year as part of "Freshmen Finales." They have to respond to three questions: "Who am I?" "How am I doing?" "What are my plans for the future?" A year later, for "Sophomore Passage," they respond to three slightly different questions: "Who am I?" "What do I do to enhance the school community?" "Who do I want to be like as an adult?"

WHAT YOU'LL SEE IN A CLASSROOM

Why?

Evidence that big-picture questions are being routinely addressed as part of the specific topic being studied

Students regularly asking peers and teachers for assistance

Quarter Goals

Becky   Tina
James   Latoya
Jackson   Maggie
Alice   Tom

Students' setting short- and long-term goals, which are spelled out publically

Students working in ways that best leverage their individual learning styles

Advisory classes that teach students lifelong skills such as goal-setting, responsible decision-making, time-management, and self-awareness (knowing one's strengths and areas for improvement)

Students regularly reflecting on their progress — using discussions with teachers and peers and keeping their own learning journals

QUESTIONS TO ASK

- Are students setting and regularly monitoring their goals—beyond passing the course and "getting a good grade"?

- Do discussions and work focus on big-picture questions that clearly extend beyond the specific course: What is fair? What is a community, and how do we build and sustain it? How do we tell the difference between fact and fiction?

- Do you see evidence that students are articulating ambitions and dreams beyond high school—college, careers, life?

- Are students challenging themselves and each other—individual and group accountability?

GLOSSARY

The following glossary is designed to help journalists and others sort through education's Tower of Babel and decode today's schools and classrooms. The definitions below were excerpted and adapted from the Glossary of Education Reform, developed by the Education Writers Association and Great Schools Partnership.

WHAT STUDENTS ARE LEARNING

21ST CENTURY SKILLS *(applied skills, cross-curricular skills, cross-disciplinary skills, interdisciplinary skills, transferable skills, noncognitive skills, and soft skills).* A broad set of knowledge, skills, work habits, and character traits that are believed to be critically important to success in today's world, particularly in college and contemporary careers and workplaces. Key skills include critical thinking, problem-solving, communications, teamwork, global awareness, social-emotional learning, and civic literacy.

THE 4CS. EdLeader 21, a national network of school and district leaders, is focused on integrating the 4Cs (critical thinking, communication, collaboration, and creativity) into education.

CRITICAL THINKING. A term used by educators to describe analysis that goes beyond the memorization and recall of information. Critical thinking occurs when students are analyzing, evaluating, interpreting, or synthesizing information and applying creative thought to form an argument, solve a problem, or reach a conclusion. Critical thinking lessons expose students to a variety of tools to formulate and solve problems, including data analysis, statistical reasoning, and scientific inquiry, as well as creativity, nonlinear thinking, and persistence.

DEEPER LEARNING. A set of six competencies that students need to succeed in and out of the classroom, including:

- **Applying content knowledge.** Students master rigorous academic content and transfer the lessons they learn in class to other subjects and draw connections between what they're learning and their own lives.

- **Thinking critically.** Students identify and seek out information, critically analyze that information, and use evidence to support their conclusions.

- **Communicating clearly.** Students communicate their ideas effectively—both verbally and in writing—and are able to listen to and incorporate feedback.

- **Working collaboratively.** Students cooperate with others to identify challenges and incorporate multiple points of view to reach collective goals.

- **Learning independently.** Students monitor and direct their own learning, both in and out of the classroom.

- **Positive mindsets.** Students are excited about coming to school and engaged in the subjects they are learning.

INTERPERSONAL SKILLS *(social skills, people skills, social, intelligence).* Competencies such as teamwork, collaboration, leadership, communication, responsibility, and conflict resolution, according to the National Research Council.

INTRAPERSONAL SKILLS. Competencies such as intellectual openness; work ethic and conscientiousness; and positive core self-evaluation, including flexibility, initiative, appreciation for diversity, and metacognition (the ability to reflect on one's own learning and make adjustments accordingly), according to the National Research Council.

POSITIVE MINDSET *(academic mindset, growth mindset).* People who have this attitude believe that their most basic abilities can be developed through dedication and hard work. It is juxtaposed to a "fixed mindset," when students believe that they are either "smart" or "dumb" in an area and there is no way to change this. Students who embrace positive mindsets—the belief that they can learn more or become smarter if they work hard and persevere—may learn more, learn it more quickly, and view challenges and failures as opportunities to improve their learning and skills. Students feel a sense of belonging and pride in themselves and their fellow students. They feel safe enough to struggle with new ideas, try different solutions, and seek new challenges because they understand failure is a normal part of the learning process.

SOCIAL AND EMOTIONAL LEARNING *(social and emotional development, noncognitive skills, soft skills, interpersonal and intrapersonal skills).* Social and emotional learning (SEL) is the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions, according to the Collaborative for Academic, Social, and Emotional Learning.

HOW TEACHERS ARE TEACHING

BLENDED LEARNING. Generally applies to the practice of using online and in-person learning experiences. Students might attend a class taught by a teacher in a classroom setting, while independently completing online components of the course outside class.

COMPETENCY-BASED LEARNING *(proficiency-based, mastery-based, outcome-based, performance-based, and standards-based).* The systems of instruction, assessment, grading, and academic reporting based on students' demonstrating that they have learned the knowledge and skills expected as they progress through their education and have "met the standard." Students can demonstrate competency in many ways and at many times—not just through an end-of-course test. Think Boy Scout merit badges. Students can move through the coursework as they demonstrate competency, regardless of their age or grade. "Seat time" doesn't matter. If students can move faster through a set of lessons, then they can do so. If they need more time to gain competency, they get it.

HANDS-ON LEARNING *(authentic learning, project-based learning).* Educational and instructional techniques focused on connecting what students are taught in school to real-world issues, problems, and applications. Students are more likely to be interested in what they are learning; more motivated to learn new concepts and skills; and better prepared to succeed in college, careers, and adulthood if what they are learning mirrors real-life contexts, equips them with practical skills, and addresses topics that are relevant to their lives.

OUTCOMES-BASED LEARNING *(competency-based, proficiency-based, standards-based, performance-based, mastery-based).* Systems of instruction, assessment, grading, and academic reporting that are based on students' demonstrating they have learned the knowledge and skills they are expected to learn as they progress through their education. Often contrasted with "seat-time," students earn credit once they've shown they've mastered the content versus having to attend a fixed number of classes for a set number of hours.

PROJECT-BASED LEARNING *(inquiry-based learning, learning by doing).* Any programmatic or instructional approach that uses multifaceted projects as a central organizing strategy for educating students. Students will typically be assigned a project or series of projects that require them to investigate a real-world question and use diverse skills—such as researching, writing, interviewing, collaborating, or public speaking—to produce research papers, scientific studies, public-policy proposals, multimedia presentations, video documentaries, art installations, or musical and theatrical performances. Unlike many tests, homework assignments, and other more traditional forms of academic coursework, projects may take several weeks or months, and often they are interdisciplinary.

STUDENT-CENTERED LEARNING *(personalized learning, differentiated learning).* Educational programs, learning experiences, instructional approaches, and academic-support strategies intended to address the distinct learning needs, interests, aspirations, or cultural backgrounds of individual students and groups of students. Schools, teachers, guidance counselors, and other educational specialists may use a wide variety of educational methods, from modifying assignments and instructional strategies in the classroom to entirely redesigning the ways in which students are grouped and taught in a school. This is unlike "school-centered learning," where schools are often organized in ways that work well for the adults and organizational operations (predetermined schedules, identical textbooks, etc.) but not necessarily for students.

THE LINGUISTIC LANDSCAPE

In December 2016, the Wallace Foundation published research on how multiple related terms resonated with various stakeholders (educators, policymakers, and parents). Its initial list of the "linguistic landscape" tested more than 40 terms in circulation. It found that **"social and emotional learning"** and **"social, emotional, and academic learning"** were the most familiar to educators and policymakers. Research available at http://bit.ly/2lK0xsC.

- 21st century skills/competencies
- Academic attitudes and behaviors
- Academic mindsets
- Achievement behavorial skills
- Capacity for accomplishment
- Character (variations: character education, character development, character building, and character virtue development)
- Deeper learning
- Developmental experiences
- Effective learner
- Emotional intelligence
- Ethics
- Expanded learning system
- Foundations for Young Adult Success
- Grit

- Growth mindset
- Intrapersonal and interpersonal competentices
- Learning mindset
- Life skills
- Multiple dimensions of learning
- Non-academic skills
- Non-academic success factors
- Non-academic youth outcomes
- Non-cognitive traits & habits (variations: non-cognitive skills/factors, non-cognitive learning, non-cognitive development)
- Personal and social skills
- Personal success skills
- Positive youth development
- Productive persistence
- Prosocial behavior/experiences

- School climate
- Science of human development
- Skills for agency
- Social-emotional learning (variations: social-emotional development, social-emotional competence, social and emotional skills, social emotional competencies)
- Social, emotional, and mindful learning
- Soft skills
- Student agency
- Student-centered learning
- The Big Five
- Thriving
- Transferable knowledge and skills
- Whole Child Approach
- Youth development

HOW LEARNING IS MEASURED

AUTHENTIC ASSESSMENT *(authentic learning, demonstrations of learning, performance-based assessments, exhibitions).* Refers to a wide variety of assessments that give students a chance to show what they know beyond taking a standardized test. These include performance tasks or asking students to do an activity that demonstrates their learning portfolios of work compiled over a semester (like an artist's portfolio of paintings); projects; or exhibitions/presentations often delivered to the broader community outside school. The assessments are often a culmination of the real-life learning that has occurred over an entire course, where students are learning by doing every day

DEMONSTRATIONS OF LEARNING *(capstone exhibition, culminating exhibition, learning exhibition, exhibition of learning, performance exhibition, senior exhibition, or student exhibition).* A wide variety of projects, presentations, or products through which students demonstrate what they have learned, usually as a way of determining whether and to what degree they have met the learning goals. These can include: speeches, videos or multimedia presentations, art works, print or online publications (including websites, blogs, essays, poems, short stories, or plays), scientific experiments, physical products (models, sculptures, dioramas, musical instruments, or robots, etc.), or portfolios of work.

FORMATIVE ASSESSMENT. A wide variety of methods that teachers use to conduct in-process evaluations of student comprehension, learning needs, and academic progress during a lesson, unit, or course. The general goal of formative assessment is to collect detailed information that can be used to improve instruction and student learning while it is happening. What makes an assessment "formative" is not the design of a test, technique, or self-evaluation, per se, but the way it is used—that is, to inform in-process teaching and learning modifications.

PERFORMANCE ASSESSMENTS *(demonstrations of learning, exhibitions).* These typically require students to complete a complex task, such as a writing assignment, science experiment, speech, presentation, performance, or long-term project. Educators will often use collaboratively developed common assessments, scoring guides, rubrics, and other methods to evaluate whether the work produced by students shows that they have learned what they were expected to learn.

PORTFOLIO. A compilation of academic work and other forms of educational evidence (demonstration of learning, capstone projects, etc.) assembled for (1) evaluating coursework quality, learning progress, and academic achievement; (2) determining whether students have met learning standards or other academic requirements for courses, grade-level promotion, and graduation; (3) helping students reflect on their academic goals and progress as learners; and (4) creating a lasting archive of academic work products, accomplishments, and other documentation; and (5) helping teachers figure out where they need to supplement or change how they're teaching.

SUMMATIVE ASSESSMENTS. Tests, assignments, or projects used to evaluate student learning, skill acquisition, and academic achievement at the conclusion of a defined instructional period—typically at the end of a project, unit, course, semester, program, or school year. Generally they are designed to assess whether students have learned what they were supposed to learn; are evaluative rather than diagnostic; and comprise a major part of a student's grade. Historically, they've been used to gather school accountability data.

ADDITIONAL RESOURCES

These experts can connect you with schools and teachers.

- Big Picture Learning, Chris Jackson, chris@bigpicturelearning.org

- Ed Leader21, Valerie Greenhill, vgreenhill@edleader21.com

- EL Education, Ron Berger, rberger@eleducation.org

- Envision Schools, Gia Truong, gia@envisionschools.org

- High Tech High, Laura McBain, lmcbain@hightechhigh.org

- New Tech Network, Krista Clark, kclark@newtechnetwork.org

ORGANIZATIONS AND WEBSITES

EDUCATION WRITERS ASSOCIATION
http://www.ewa.org/

In addition to the Education Reform Glossary, the site features Story Labs and Reporters Guides on deeper learning-relevant topics such as visiting school campuses and interviewing children.

HEWLETT FOUNDATION WEBSITE
http://www.hewlett.org/strategy/deeper-learning

The foundation's deeper learning website features background information, overviews of its grants, and news articles.

DEEPER LEARNING WEBSITE
http://deeperlearning4all.org/resources

Maintained by the Alliance for Excellent Education, the website includes extensive background materials, including reports, cases studies, news, and a blog.

TEACHING CHANNEL VIDEOS
http://bit.ly/1yd8t2m

The 50-plus videos in this series showcase 10 Deeper Learning networks that are preparing students for success—they collectively serve more than 500 schools and 227,000 students. With a focus on multiple topics, including innovative teaching models that emphasize real-world experience, academic mindsets, and collaborative project work.

TEACHING CHANNEL "ESSENTIAL READING LIST FOR DEEPER LEARNING"
http://bit.ly/1Mafl9t

Ron Berger, Suzie Boss, Milton Chen, and more.

EDUTOPIA
https://www.edutopia.org/

The nonprofit, managed by the George Lucas Educational Foundation, has multiple articles, videos, and blogs on deeper learning and related topics such as project-based learning and comprehensive assessment.

BUCK INSTITUTE FOR EDUCATION
https://www.bie.org/

This website is a go-to resource for information related to project-based learning.

LEARNING POLICY INSTITUTE
http://learningpolicyinstitute.org

The research organization is exploring the impact of deeper learning on equity.

AMERICAN YOUTH POLICY FORUM
http://bit.ly/1TbdIJ7

The nonprofit has assembled a curated list of deeper learning resources including school video tours and briefs.

WIKIPEDIA
https://www.wikipedia.org/

Offers useful history, background, definitions, and links to additional resources.

SCHOOL RETOOL
http://schoolretool.org

The nonprofit's website helps school leaders redesign their school culture for deeper learning, using small, scrappy experiments called "hacks." With multiple examples and videos from the field.

SELECTED MEDIA CLIPS

EDUCATION WEEK'S LEARNING DEEPLY
http://bit.ly/1iXuZpx

The blog features regular updates from the field on practices, policies, and research.

EDUCATION WEEK'S SPOTLIGHT
http://bit.ly/1SW8f8P

A collection of seven articles from *Education Week* covering topics from brain research to competency-based learning.

MINDSHIFT/KQED
http://bit.ly/2oEJDyf

The National Public Radio station's dedicated channel has several instructive news articles.

HEWLETT FOUNDATION
http://bit.ly/2f6zF2T
http://bit.ly/2g0bYr9

Articles on *new assessments*, *self-regulation*, and a review of its *deeper learning grants* since 2010.

LOOKING FOR FREE, HIGH-QUALITY IMAGES OF STUDENTS AND TEACHERS?

Check out "American Education: Images of Teachers and Students in Action," an online gallery of more than 200 original print-quality, royalty-free images of teachers and K–12 students of all ages and backgrounds.

Photos are available at DeeperLearning4All.org/Images

"In traditional education students don't always necessarily have to collaborate. It's really either you get it or you don't. And there's no let's work together on a common goal to achieve. They have to learn how to collaborate. They have to learn how to have a shared experience. They have to have the idea that we want to have shared success. That's one of the things we talk about. Either you and your group are going to have shared success. Or shared failure. Which would you prefer?"

MARCHELL DACE, 7TH GRADE TEACHER,
WINTON WOODS MIDDLE SCHOOL, CINCINNATI, OHIO

"The hardest thing [about deeper learning] is that it's hard. Traditional school, I can show up in the morning. I can put my learning objective up on the board and it's pretty and everyone's doing the same thing at the same spot. And if they're not at the same spot, I can stop them. The class period's over. Now I have 20 kids all working on something different at the same time, all with different interests. Kids who are working on their writing, setting goals for themselves, kids at all levels."

DEREK JOHNSTON, ADMINISTRATOR,
UNION HIGH SCHOOL, NAMPA, IDAHO