EQUIPPING STUDENTS FOR LIFE:

Practical Strategies for Deeper Learning in K-12 Schools

Defined | K-12 DIVE

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Portrait of a Graduate…Profile of a Learner…The Ideal Graduate…The Whole Child…

The terms vary, but K-12 districts are united in casting a vision for student success that extends beyond academics.[1] Many, for example, focus on the "Four C's" — critical thinking, creativity, collaboration, and communication.

Research confirms that students who develop cognitive, emotional, and social skills are more likely to succeed in work, in relationships, and as citizens.[2] **These are outcomes every school leader wants. The issue is how to achieve them.**

Districts and schools face enough challenges in trying to raise traditional learning outcomes. Math and reading scores have reached historic lows.[3] School leaders must fix this problem even amid tight budgets and teacher burnout.

Can schools afford to pursue a broader vision of student success when they need to close learning gaps?

Actually, they can.

As research shows, "deeper learning" imparts 21st-century skills while boosting academic achievement.[4]

Still, a practical question remains: *How do you implement deeper learning?*

This playbook presents Four Pillars of deeper learning. It shows K-12 leaders how to make deeper learning a reality in their schools.

The Four Pillars of Deeper Learning

Career-connected learning
Bridges education and careers through practical industry experience

Future-ready skills
Develops key competencies like adaptability and teamwork

Performance tasks
Provides authentic contexts to apply learning in real-world situations

Project-based learning
Integrates all elements through complex real-world challenges

PILLAR 1

Career-connected learning

David Reese, EdD, spent more than twenty years as a teacher, curriculum specialist, and curriculum director. Since 2013, he has served as Chief Academic Officer at Defined, a leader in applied learning.

Defined developed the Four Pillars to offer practical ways to bring deeper learning into schools. The factor that unites the pillars is student-centered learning.

Why does student-centered learning matter? Dr. Reese explains: "Think of the questions that every teacher hears from students. *Why do I need to know this? When am I ever going to use it?"* Students become disengaged when they don't see how school will help them in their life and work. "And when students aren't engaged in their learning, they aren't likely to perform well on standardized tests," Dr. Reese notes.

That's why the first pillar of deeper learning — **career-connected learning** — proves so important. "It provides clear answers to the 'Why do I need to know this?' question," Dr. Reese observes.

Career-connected learning aligns education with hands-on, real-world experiences. Successful schools embed this learning in the curriculum, tying it to the academic standards and learning goals. In Dr. Reese's words, "Career-connected learning takes the existing courses and content and helps students go a step further, to see how their learning relates to potential careers."

Schools can provide hands-on experiences in a variety of ways, including by:

- **Integrating career exploration:** Design learning experiences that allow students to “test-drive” different careers
- **Encouraging self-discovery:** Guide students to reflect on their interests, strengths, and areas for growth
- **Developing authentic, real-world learning experiences:** Assign projects that simulate real workplace challenges and responsibilities, and that develop project-management, problem-solving, and communication skills
- **Expanding work-based learning opportunities:** Expose students to career paths through internships, virtual internships, apprenticeships, job shadowing, and industry-based projects

When students learn about professional pathways, they may discover opportunities they never imagined. As Dr. Reese and his colleagues say, “You can’t be what you can’t see.” Students also learn what skills, education, and experience they need to pursue their desired path.

> *Career-connected learning provides clear answers to the ‘Why do I need to know this?’ question that teachers so often hear from students.*
>
> — Dr. David Reese, Chief Academic Officer, Defined

PILLAR 2

Future-ready skills

"Whenever I speak to school leaders," Dr. Reese says, "I ask them about the mission of their institutions. Almost invariably, their purpose involves building **future-ready skills**. They may use different language — say, the four C's, or 21st-century skills, or durable skills — but the vision is consistent."

That vision encompasses success in life beyond school — including, but not limited to, success in the workplace. Survey after survey shows that employers prize skills like communication, critical thinking, teamwork, and problem solving. But they struggle to find candidates proficient in these areas.[5]

By prioritizing future-ready skills, then, K-12 leaders will set up their students for success. Dr. Reese notes, "These attributes aren't specific to a particular job or industry, and they're likely to remain valuable no matter how workplaces evolve in the future."

Indeed, students who practice future-ready skills will have the training and resilience to adapt to changing circumstances.

Such nimbleness and resilience will serve students well outside of work, too. "Future-ready skills," Dr. Reese says, "are essential for success not just in education and work but also in personal development, relationships, and civic engagement."

PILLAR 3

Performance tasks

Even when K-12 leaders embrace the concept of future-ready skills, they confront two questions:

1. **How do we provide students opportunities to practice these skills within the curriculum?**

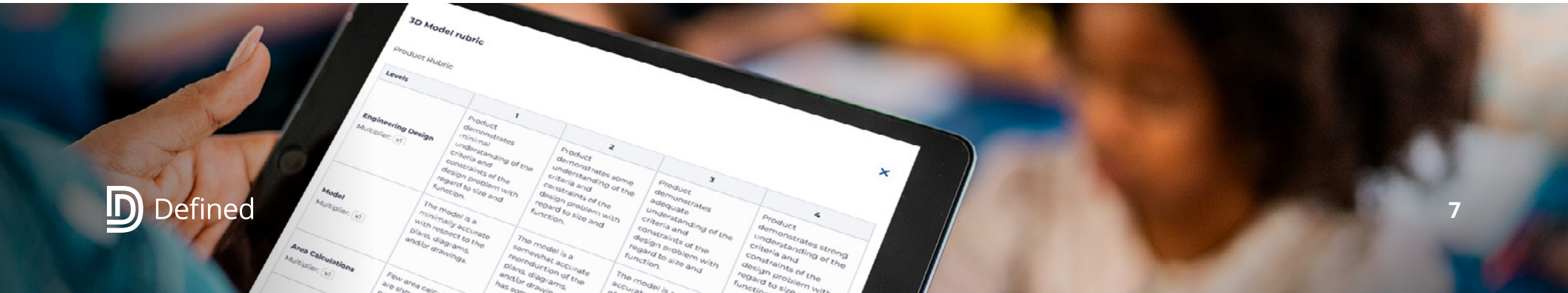
2. **How can we measure these skills?**

Performance tasks address both questions. A performance task, in the words of the noted educator Jay McTighe, is "any learning activity or assessment that asks students to perform to demonstrate their knowledge, understanding, and proficiency."[6]

Students don't regurgitate what they've learned; they apply their learning in real-world contexts. Performance tasks thus provide the structure by which deeper learning happens.

The key with performance tasks, Dr. Reese says, is to tie them to the academic standards and learning goals. Defined "works with schools to embed performance tasks into their curricula," he explains. That way, "teachers understand exactly where and when they can incorporate career-centered learning and future-ready skills."

Performance tasks also enable schools to measure those otherwise-hard-to-evaluate future-ready skills. "At Defined," Dr. Reese says, "we use analytic rubrics to gather assessment data on academic content and future-ready skills." As a result, "school leaders have qualitative and quantitative data to measure progress toward Portrait of a Graduate goals."



What do performance tasks look like in practice? Here are some examples:

- **First graders take on the role of park ranger,** responsible for telling visitors about the local wildlife. They need to understand the environment as well as the adaptations animals have made over time to survive there. To teach visitors, the students prepare a photostory, with an image of each animal and a short description of its adaptation. They also create a research map showing where to find different animals. Finally, they produce a model of one animal, highlighting features that help it survive in its environment. This performance task ties into first-grade science standards and enables ELA and creative art connections.

- **Fourth graders become cartographers,** creating a map of a state to show its borders and regions, and to call out fun facts. In the process, they learn how or why regions and borders came to be. Does some natural boundary, like a river or mountains, mark off a border, or is the border invisible except on the map? What geographic, political, or cultural factors explain why regions emerged as they did? This performance task incorporates social studies, geography, and ELA standards.

- **Fifth graders design, build, and test model airplanes.** They begin by learning about the Wright brothers and what engineers do. Then they design three model planes: one to fly the farthest, another to fly the longest, and the third to do acrobatics. They can use various materials (paper, cardstock, styrofoam, balsa wood) and experiment with different shapes. In testing their planes, they time the flights, measure the distances, and display the fractional distance data. Finally, they need to answer questions based on the data. In other words, they apply learning from math and science.

- **High school geometry students design custom aquariums.** Their design must fit the space and budget of a certain customer — say, a resort or doctor's office. Students create a blueprint and a 3D model of their aquarium design. They also calculate volume, including how much water they need to fill the tank. This performance task ties in with math standards and blends scientific and artistic observation.

> *[Performance tasks] can (and should) be used in every subject area and at all grade levels.*
>
> — Jay McTighe, educator, cocreator of the evidence-based Understanding by Design Framework

PILLAR 4

Project-based learning

The final pillar represents the instructional method that brings deeper learning to life.

Project-based learning provides engaging learning experiences during which students apply their knowledge and practice future-ready skills.[7]

Many school leaders are familiar with the concept of project-based learning. Still, misconceptions persist. For example, project-based learning does not mean simply a group project or a diorama. Nor does this approach reject traditional teaching methods. Nor does project-based learning work only with older students.[8]

Decades of research and practice have revealed essentials of effective project-based learning. The framework known as High-Quality Project-Based Learning includes six elements:[9]

1. Intellectual Challenge and Accomplishment: Projects push students to apply their knowledge and skills in complex ways. Crucially, the projects tie in to academic standards. They can't be an add-on to — or worse, a distraction from — learning goals.

2. Authenticity: Students need to see how their learning relates to their lives and the world around them. Real-world applications are a must.

3. Public Product: Students present their work to audiences beyond the classroom, enhancing accountability and communication skills. "Ideally," Dr. Reese explains, "the audience comes from beyond the school — say, professionals from the field being studied, or members of the community. But even if students address teachers, administrators, and/or peers, presenting to someone else deepens the learning."

4. Collaboration: "Working with other people is something all students will need to do in life," Dr. Reese says. "With project-based learning, they learn how to work with all different kinds of people. They learn how to support others, ask for help, offer feedback, and resolve disagreements."

5. Project Management: "Project management is an essential skill," Dr. Reese notes. "How do you plan something from start to finish and hit your goals along the way? How do you manage your time? What resources do you need?"

6. Reflection: Ongoing self-assessment plays a big role in project-based learning. What are students learning? What problems do they need to solve? Are there areas of understanding or skill they need to improve to complete the project?

Teachers don't just give a grade at the end of the project. They remain involved throughout. Dr. Reese explains: "Teachers support students in knowledge gathering but also in knowledge transfer — applying their learning and reteaching it to their audience. Teachers help students navigate collaborative work, which is often a big challenge. They help students develop project-management skills. Their ongoing feedback spurs student reflection."

The most important aspect of project-based learning is that it *works*. Many studies show its positive impact across grade levels, subjects, and demographic groups.[10] For instance:

- Students who used project-based learning **"outperformed their peers in both reading and mathematics in each of the 3rd, 4th, and 5th grades,"** according to a 2022 study.[11]
- A Stanford University study found that sixth-graders who followed a project-based learning curriculum made **"gains in student engagement, science learning outcomes, and on standardized math, ELA, and English language proficiency assessments."**[12]
- In that same study, "English language learners in the [project-based learning] classrooms scored up to **28 percentage points higher** than their peers on a language proficiency test after completing projects."[13]

- A study published in the American Educational Research Journal found that second-grade students in low-socioeconomic-status schools who followed project-based learning saw "a **63% gain** in social studies" and "a **23% gain** in informational reading."[14]

- Researchers at the University of Southern California concluded that high school students who took Advanced Placement courses with a project-based learning approach outperformed their peers on AP exams by **8 percentage points** in the first year and **10 points** in the second year.[15]

Gains from Project-Based Learning: What the Research Shows

28

Percentage-point increase in performance on a language-proficiency test among sixth-grade English-language learners

63%

Gain in social studies learning among second-graders in low-socioeconomic-status schools

10

Percentage-point increase on AP exam scores

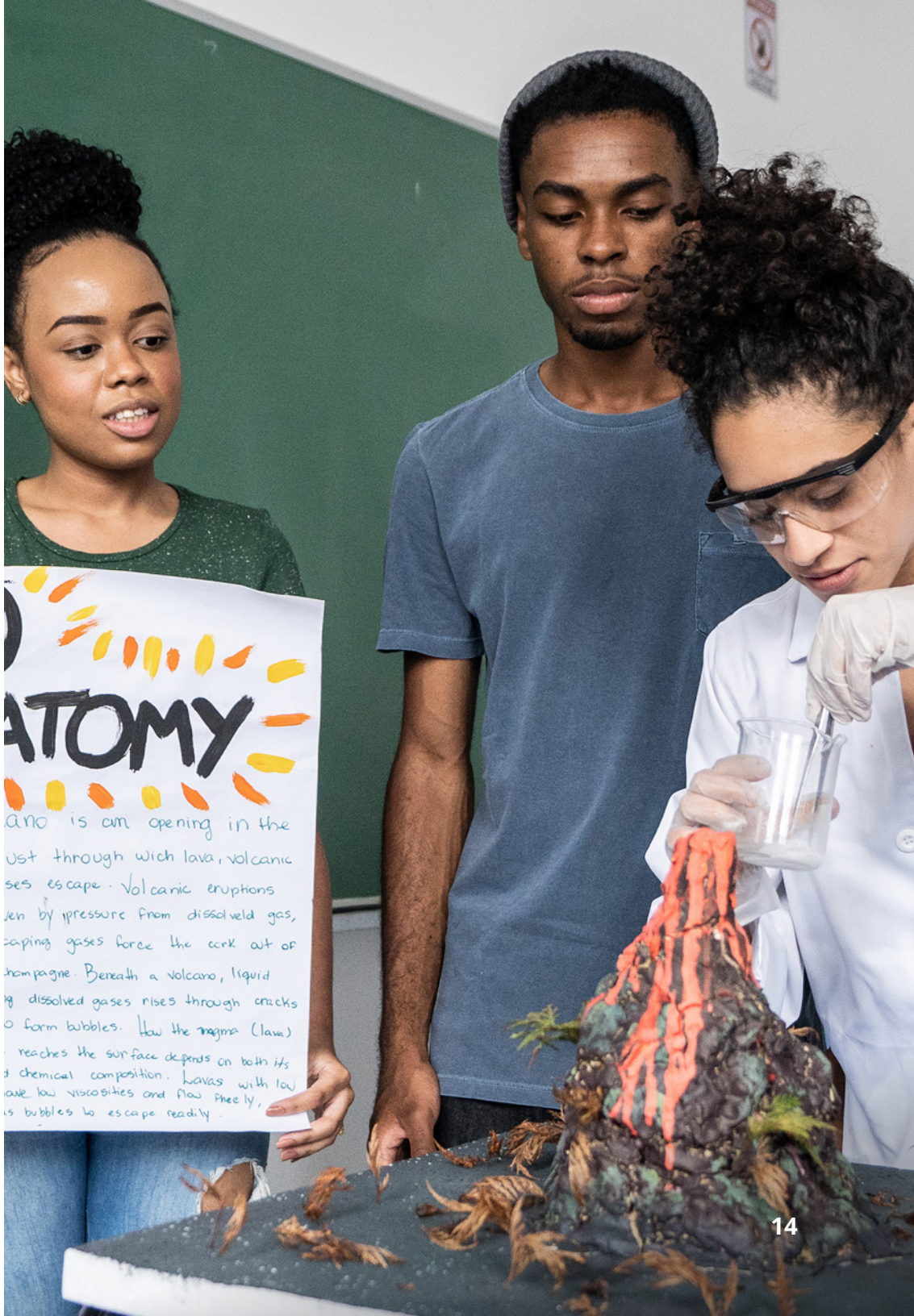
Bringing deeper learning to life

The studies revealing the effectiveness of deeper learning underscore a crucial point:

School leaders don't need to choose between academic outcomes and future-ready skills. Deeper learning bridges them both.

The Four Pillars lay out the core elements of an effective deeper learning approach. Still, implementing deeper learning may feel daunting. School leaders face budget restrictions, worry about training teachers, and wonder how to assess this kind of learning.

David Reese understands all these concerns from his years working in schools. But he knows the transition to deeper learning can be made, because he has helped so many schools navigate that transition.



It's important to understand that you don't need to overhaul everything at once. As long as you align your strategy to the Four Pillars, you can build momentum through incremental changes. Dr. Reese cites a concept from Jim Collins's influential book Good to Great: "Tremendous power exists in the fact of continued improvement and the delivery of results."[16]

A school might start, for instance, by taking a close look at its existing budget. Dr. Reese says: "You might have a curriculum budget, a professional learning budget, a budget for career and technical education, and/or a budget for workplace readiness. How might you shift around some of those allocations to bring in deeper learning?"

Dr. Reese concludes with this advice for school leaders: "Deeper learning isn't about doing something different. It's about fulfilling your vision of equipping students with the skills they need to flourish in life. When you engage students with relevant, real-world learning, you'll give them the cognitive and durable skills they'll need in our ever-changing world."

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