

Reframing Student Outcomes to Develop 21st Century Skills

◆ Knowledge Brief ◆

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It is clear today that the premium is not merely on students' acquisition of information, but on their ability to analyze, synthesize, and apply what they've learned and their capacity to solve problems, design solutions, and communicate effectively.

—Darling-Hammond and Adamson, 2010

Why Organize Educational Systems Around 21st Century Skills?

To be prepared for the 21st century workforce, students need to be able to quickly understand new technologies, processes, and concepts that likely did not exist just a few years, or even months, earlier. Whereas in the early 1900s, 95 percent of jobs only required employees to follow basic procedures, the current work environment requires more than just core content knowledge. Barron and Darling-Hammond (2008) note that, “Education must help students learn how to learn in powerful ways, so they can manage the demands of changing information, technologies, jobs, and social conditions.” (p. 2) Instead of traditional academic approaches that emphasize memorization and recall, effective educational systems are organizing to foster higher-order thinking skills, including critical thinking and problem-solving, research, collaboration, and communication.

This brief identifies three strategic practices to be taken collectively by schools, districts, and communities to mobilize around preparing students for college and career success:

- Collectively articulating and aligning a set of student outcomes that prioritize 21st century skills,
- Transforming defined outcomes into functioning frameworks for curriculum and instruction and student support, and
- Measuring student mastery of outcomes through the implementation of authentic, performance-based assessment.

Opportunities Within the Linked Learning Context

The California Linked Learning District Initiative provides a ripe context for galvanizing and organizing schools, districts, and communities around 21st century student learning outcomes. With a focus on preparing students for both college and career success, Linked Learning stresses continuous integration of academic instruction with demanding technical curriculum, field-based learning, and student supports embedded in career academies or smaller-themed schools known as pathways. Linked Learning emphasizes collaboration among district, school, industry, civic, and other community stakeholders in support of student success.

The initiative, launched by the James Irvine Foundation in 2008, has supported nine California school districts to work on systems, culture, and conditions in order to build, improve, and sustain high quality pathways. For the first few years, the initiative centered on adult inputs such as pathway design, curriculum and instruction, leadership practices, and overall system support. This past year, the focus has evolved to support districts and pathways to strategically anchor their work in a set of 21st century student learning outcomes. This focus includes increasing the engagement of community stakeholders to define and articulate student learning outcomes, aligning support for these outcomes and determining success by implementing authentic performance-based assessments.

Strategic Actions

Collectively articulating and aligning a set of student outcomes that prioritize 21st century skills
Assessing whether students are college and career ready means breaking down 21st century outcomes in ways that are useful in their context. For example, rather than follow a list of content standards, schools and districts could develop a set of collectively determined “exit outcomes” that could help practitioners and other stakeholders to thoughtfully determine the specific kinds of knowledge,

competencies, and characteristics students are expected to demonstrate in preparation for college and careers.

Wiggins (2011) emphasizes the need to be inclusive during the process of defining outcomes, noting that only representatives from traditional academic subjects are typically involved, and they tend to focus only on their specific discipline. Wiggins asks, “When have professors of bioethics, anthropology, or law been invited to critique content standards?” (p. 30)

In the Linked Learning context, there is a tremendous opportunity for local industry, college, civic, and community leaders to contribute to a set of learning outcomes that would be championed by the whole community. Their participation could include not only helping articulate the broader 21st century skills they require of graduates, but also help align industry competencies.

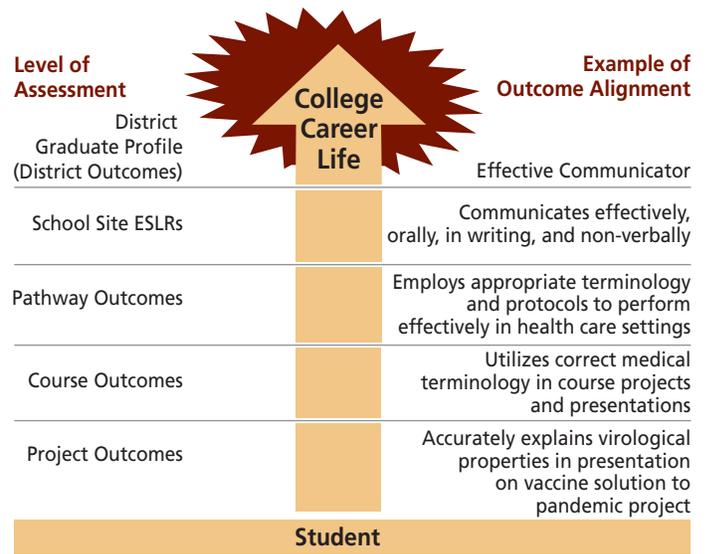
Alignment in Linked Learning districts and pathways could look like the following:

- **A broader graduate profile:** What 21st century skills would be championed across the community that would represent college and career readiness for graduates?
- **Pathway Outcomes:** What are concrete outcomes, aligned with the broader graduate profile, linking most closely to a particular industry sector?
- **Course Outcome:** What are the high priority course objectives that align with the broader graduate profile and pathway expectations?
- **Project Outcomes:** What are the specific content and skill standards supported within projects that are in service of the course and pathway outcomes as well as the broader graduate profile?

Figure 1 (top right), developed by ConnectEd, the California Center for College and Career, illustrates what this alignment might look like across multiple levels of the system.

Transforming defined outcomes into functioning frameworks for curriculum and instruction and student support

District, school, and pathway leaders can all point to examples of outcomes being articulated, but not used. This may include Expected Schoolwide Learning Results (ESLRs) that are posted on school walls but rarely referred to or long lists



of content standards that are routinely listed on classroom whiteboards but fail to effectively drive student learning. Conversely, teachers may develop and implement well-intentioned projects, but fail to leverage those to support a set of explicit student learning outcomes.

In Linked Learning districts and schools, with a strong emphasis on career-themed interdisciplinary projects and work-based learning experiences, it is important to pay particular attention to leveraging curriculum and instruction to support 21st century student learning outcomes. In their analysis of work-based learning, Hoachlander and Yanofsky (2011) observe:

Work-based learning can quickly devolve into little more than a series of low-level work experiences that are not good uses of students’ or teachers’ time. As with other forms of project-based learning, sound work-based learning depends on being explicit about the academic and technical learning objectives the experience is intended to support (p. 65).

The Law Academy at Deer Valley High School in Antioch, California, provides an example of a collaborative effort between the local police department and teachers to develop and implement curriculum in support of specific pathway outcomes, with an emphasis on both technical and higher order thinking skills (see table, next page).

Measuring student progress toward outcomes through the implementation of authentic, performance-based assessment

Enabling students to master 21st century learning skills requires aligning assessments with learning outcomes.

An Opportunity for Change

Well-developed performance-based assessments require students to demonstrate their mastery of the higher-order thinking skills that they will need in the real world. In contrast to traditional assessments in the United States that rely heavily on multiple choice questions, Darling-Hammond and Adamson (2007) note, “performance assessments can measure students’ cognitive thinking and reasoning skills and their ability to apply knowledge to solve realistic, meaningful problems” (p. 7). They recommend performance assessments that require more analysis and manipulation of data in defense of a student’s ideas.

Through Linked Learning, districts and pathways can support the goal of college and career readiness by integrating such assessment practices. Grounded in the district and pathway outcomes and thoughtfully supported through curriculum and instruction and other student supports, these assessments can serve as an opportunity for students to demonstrate higher order thinking skills with mastery of academic and technical content.

See sidebar (next page) for an example of how Life Academy of Health of Bioscience (a health pathway in Oakland, California) in collaboration with other key stakeholders, has implemented a 12th grade capstone performance assessment, through which a student can demonstrate his or her college and career readiness.

State and federal policies continue to encourage outcomes, practices, and assessments that fail to prepare students with 21st century skills. While district and school systems may articulate a commitment to these skills, they are most commonly oriented toward traditional practices and state assessments developed for a different time and for much less demanding industries. Teachers are told to prepare their students for post-secondary success but are stifled by multiple rounds of district benchmark assessments and pacing guides that communicate a different set of priorities. Darling-Hammond and Adamson (2010) acknowledge the role of the current federal context stating, “the standardized tests that have been the linchpin of the federal No Child Left Behind Act (NCLB)—a law that has sought to promote school improvement by holding local educators accountable for their students’ achievement—have largely failed to gauge students’ mastery of the thinking skills that experts say they need to succeed in today’s complex and fast-changing world.”

The landscape, however, is changing. The recently developed Common Core Standards as well as emerging performance-based assessments present a much stronger alignment with higher order, 21st century skills. As David Conley states, “Implemented correctly, the common standards and assessments can vault education over the barrier of low-level test preparation and toward the goal of world-class learning outcomes for all students” (2011, p. 17).

Project Title: Crime Scene Reconstruction	
Pathway Outcomes Supported	<p>Correctly interpret and effectively communicate in a manner that is clear, logical, well-organized and persuasive both verbally and in writing.</p> <p>Demonstrate the ability to think critically by identifying legal issues and critical facts, applying astute legal reasoning skills, and assessing potential options, solutions, and strategies</p>
Project Objective	<p>Students understand how to preserve, document, and evaluate a crime scene.</p>
Overview of Student Experience	<p>During the project, students:</p> <ul style="list-style-type: none"> • Use investigative techniques to protect a crime scene including establishing a perimeter, placing fixed barriers, and securing vehicles and other artifacts. • Conduct a crime scene search in a systematic, coordinated effort in order to locate physical evidence that indicates a crime has taken place, and identify individuals who may have committed the crime. • Select a search pattern and document (through both photography and written log) the condition of the crime scene along with the location and description of items of possible evidence. • Create a narrative of what happened at the crime scene and an evaluative police report.

Performance Assessment in Action

The student displays a look of anxiety as she enters the room and looks into the eyes of the adults and students facing her behind a long table. This includes two teachers, her advisor, her internship supervisor, a community college instructor, her father, a few 11th-grade students, and some additional guests.

She reveals her self-generated investigation question, “What support practices have the most impact on clients living with dementia?” Confidence builds as she provides details of her internship at the local senior center and how it inspired and informed her curiosity. She shares that at one point she questioned her impact as a volunteer with patients given that they seemed to not remember her each time she returned.

She then refers to her process for developing an answer to her question, including background research, interviews with doctors and nurses at the center, observations, and a review of academic journals. Continually making connections to her central question, she reveals what she learned from each of these sources, including a deep understanding of symptoms and treatments for dementia, findings from recent studies, and results from her observations and interviews. In her analysis and conclusion, citing evidence from her research, she acknowledges how challenging it is to measure impact in the work with clients living with dementia, but was convinced that their quality of life could clearly be improved on a daily basis. The forum ends with 10 minutes of questions from the panel, a combination of clarifying questions and deeper questions so that they could better determine her ability to apply her knowledge. While the student was initially dreading this portion of the exhibition, she finds herself surprised at her ability to provide informed responses.

After the student leaves the room, the panel deliberates around her level of mastery. The team reviews and assesses the student in several categories including: Effective Communication, Use of Evidence and Multiple Perspectives, Logical Reasoning and Analysis, and Problem Solving. The panel is aware that the student must demonstrate proficiency in each of the categories in order to be eligible for graduation. While the teachers are making a final recommendation, this is fully informed by the input from the various stakeholders.

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As the state of California moves toward implementation of the Common Core Standards and joins the Smarter Balanced Assessment Consortium, district participating in the California Linked Learning District Initiative, in collaboration with their broader community, have the opportunity to lead the way by demonstrating a strong commitment to these higher order thinking skills and supporting pathways to implement the curriculum and assessments necessary to support these outcomes.

Questions to Consider

- What role is the district playing in supporting pathways to implement curriculum and instruction, student supports, and assessment aligned with 21st century student learning outcomes?
- What are the policy, cultural, and system barriers around building out more authentic measures of assessment?
- What kind of courageous leadership is needed on the part of Superintendents, school boards, school, and community leaders to ensure that the most important outcomes are truly supported and assessed?
- How are industry and community stakeholders involved in the articulation of, support for, and assessment of student outcomes?

References

- Darling-Hammond, L. & Adamson, F. (2010). *Beyond basic skills: The role of performance assessment in achieving 21st century standards of learning*. Stanford, CA: Stanford University, Stanford Center for Opportunity Policy in Education.
- Conley, D. T. (2011, March). Building on the Common Core. *Educational Leadership*, pp. 16-20.
- Darling-Hammond, L. & Barron, B. (2008). Teaching for Meaningful Learning: A Review of Research on Inquiry-Based and Cooperative Learning. In *Powerful Learning*. San Francisco, CA: Jossey-Bass.
- School Redesign Network. (2008). *What is Performance Based Assessment*. Stanford, CA: Author.
- Wiggins, G. (2011, March). A Diploma Worth Having. *Educational Leadership*, pp. 28-33.
- Hoachlander, G. & Yanofsky, D. (2011, March). Making STEM Real. *Educational Leadership*, pp. 60-65.

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