

Testing the Promise

*Building state data systems that
connect college and career readiness
to results*

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All4Ed

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Forty-two states now use at least one college and career readiness indicator in their high school accountability systems, according to a [50-state analysis](#) by All4Ed, the Urban Institute, and the National Governors Association. That is important progress.

When the Every Student Succeeds Act (ESSA) gave states flexibility to design their own School Quality or Student Success (SQSS) indicators, most chose to measure students' college and career readiness (CCR). That provides a clear signal that states care about young people's success beyond high school.

But caring about outcomes and being able to measure them are not the same thing. Of those 42 states, [about two-thirds rely exclusively on input measures](#) like credential attainment, dual enrollment and work-based learning participation, and completion of CTE programs of study. There are good reasons to use these measures. Many of them are supported by research linking them to positive outcomes after high school, and states and school districts need timely indicators they can act on before students graduate. But a readiness indicator is a proxy that captures something a student did, not necessarily what a student was able to do next as a result of that experience.

**42
states**

Use at least one college and career readiness indicator

**15
states**

Incorporate any college or career outcome

**3
states**

Include both college and career outcomes

SOURCE: [LET'S MEASURE READY](#)

In other words, states have been measuring what students do without measuring whether those activities ultimately produce the outcomes they are meant to predict. Only [15 states](#) incorporate any college or career outcomes into their CCR measures, and just three include both. The same challenge appears in states' treatment of specific indicators. For example, [26 states](#) include industry-recognized credential (IRC) attainment in their accountability systems, but only eight have the data capacity needed to link credentials to wage outcomes for students who earn them, and none feed that wage information into their accountability systems.

“ *When a state recognizes an experience as evidence of readiness, it is making an implicit promise.*

Young people who complete that experience should be better prepared to succeed after high school. Knowing whether those experiences are living up to their promise requires answers to a set of empirical questions: Did students receive the expected benefit? Did it last? Did some students benefit more than others? Which features of the experience mattered?

Most state accountability systems cannot yet answer those questions fully. That does not mean states should abandon their existing approach to measurement, but it does mean that states need stronger data systems that are capable of testing and refining the assumptions behind CCR indicators. State longitudinal data systems should help leaders move beyond counting experiences to understanding students' trajectories. Doing so is critical to states' ability to answer the questions about whether the experiences CCR indicators count actually lead to success.

States do not need to wait for new data to begin addressing this challenge. Using data they already have, they can connect readiness measures to postsecondary and employment outcomes, record which credentials and courses students complete and in what context, disaggregate the results, and use what they find to revise the credentials and programs they approve. Over the longer term, states can extend their data systems across the full education-to-career continuum and design them to offer a more complete picture of students' trajectories.

Readiness indicators are best understood as hypotheses, not guarantees

The inputs that states count as indicators of readiness do have evidence showing that they at least have potential to lead to improved outcomes. In a [review of over a hundred studies](#), the Urban Institute found that most common college and career readiness measures have been linked to positive outcomes, although the strength of the research and the size of the effects varies. Dual enrollment, CTE participation, and industry-recognized credentials were among the measures with evidence across multiple studies. However, different students may derive different benefits from them, and states have done little to address the challenge presented by the fact that one-size-fits-all indicators can conceal significant variation in students' experiences.

Counting inputs does not necessarily enable states to understand anything about the rigor and quality of students' experiences, even though quality plays a critical role in outcomes. For example, in a system that counts inputs, two young people may both be counted as career ready because each earned an IRC. But one student may have done so as part of a coherent pathway aligned with the field they hope to enter, while the other may have earned a credential disconnected from their coursework and goals. Treating those experiences as interchangeable assumes that earning the IRC itself is what matters.

Recent research suggests otherwise. A [study](#) that followed nearly 1.7 million Texas high school graduates found that credential attainment was associated, on average, with higher early earnings, but not with an increase in employment. The average concealed substantial differences. Credentials earned in the same career field as a student's CTE concentration were associated with higher employment, earnings, and job stability. Misaligned credentials had no significant earnings benefit and were associated with weaker employment and job stability. Outcomes also varied across credential fields and student groups.

Longitudinal [evidence from Ohio](#) further reinforces the point that the value of credentials is dependent in part on how they are embedded within pathways. Credential earners experienced a substantial early earnings advantage, but the average advantage declined considerably over time. Students who combined credential attainment with CTE concentration had stronger later earnings than those who earned a credential alone, and outcomes varied markedly by credential field and student population. Credential attainment was also negatively associated with postsecondary enrollment and completion. Taken together, the research on IRC outcomes suggests that asking whether a student earned a credential is insufficient.

Questions states should be able to answer about credentials

Policymakers and district leaders who want to know whether IRC attainment supported a young person's success beyond high school need answers to a more complete set of questions, including:

— Which credential did the student earn?

— Was it aligned with the student's program of study?

— What coursework and other experiences surrounded it?

— Did it support employment, further education, or both?

— Were any early benefits sustained?

— Did outcomes differ among groups of students?

The same principle applies even to strategies like dual enrollment that are backed by [strong evidence](#) demonstrating their efficacy. The case for states to expand access to high-quality dual enrollment is clear: it has documented positive effects on college access and enrollment, degree attainment, credit accumulation, high school completion, and high school academic achievement. But participation in dual enrollment [does not consistently equate](#) to earning credits that enable young people to advance toward credential or degree attainment. Credits may [transfer only as electives](#) rather than apply to a student's eventual program of study. In other words, earning credits is not always the same as making progress. Better understanding student outcomes would mean tracking course type, credit applicability and mobility, subsequent enrollment, persistence, and completion, not just dual enrollment course-taking.

Measures that focus on inputs obscure the variations in students' experiences that contribute to inequitable outcomes. In [Undermeasuring](#), All4Ed compared states' reported college and career readiness rates with actual postsecondary enrollments and found that many states' indicators underestimate Black and Latine students' potential. The quality and design of the experiences that students participate in are also critical. A measure that counts only CTE completers and concentrators will not on its own reveal that, while Black and Latine students participate in CTE at rates comparable to their peers, they are [less likely](#) to be enrolled in CTE programs in fields such as STEM and information technology associated with high-wage careers. Research on the returns to credentials has likewise found [significant disparities by race and gender](#). Students with access to informed adults, professional networks, and outside resources can navigate toward the credential options most likely to pay off; students without those supports are left to trust that anything on the state's list of approved credentials is worth their time. Data systems that count credential attainment without tracking which specific credentials students earn and with what results can record two groups of students with very different outcomes as equally ready.

In other words, current measurement approaches can fail the same students twice. First by understating their potential when narrow indicators miss what they can do, and then by overstating their readiness when they participate in experiences or earn credentials that have little value. Both challenges are invisible in a system that only counts inputs, but become visible when states link readiness measures to outcomes and disaggregate the results.

Connecting readiness to results is what state longitudinal data systems (SLDS) are for. Linking records across K-12 education, postsecondary education, and careers is the first step toward measuring outcomes rather than inputs. SLDS can provide the information states need on whether what students are doing in high school is actually leading to success after graduation.

School-accountability measures [do not provide enough information](#) to usefully inform the broader budgeting, planning, cross-system alignment, and long-term evaluation decisions facing state leaders. Most accountability measures are designed to evaluate school performance by answering a relatively narrow set of questions about what a student accomplished while enrolled in a particular school. That means that accountability systems [prioritize](#) measures that are available quickly, can be applied consistently, and are connected closely enough to schools' actions that holding schools responsible for them is reasonable. But governors, legislators, and state agency leaders need more data in order to make informed decisions about which credentials to approve, which programs to fund, how to structure pathways, and what information to provide to students and families. To make those decisions well, they need to know not only whether students completed an experience, but where that experience led. State leaders need answers to questions about what worked, for whom, under what conditions, and what tradeoffs or unintended effects exist.

“ *Current measurement approaches can fail the same students twice by overstating their readiness and understating their potential.* ”

The answers to those questions are what is needed for states to move from assuming that an approved experience has value to understanding what students get out of it. And those answers will remain out of reach without state data systems that connect high school records with data on postsecondary enrollment, credit accumulation, transfer and credit mobility, and completion, as well as employment and earnings. Those systems also require enough detail to distinguish among specific credentials, courses, programs, providers, and pathway designs. Stronger data systems would allow approval and revalidation to become iterative. States could establish reasonable initial criteria, examine what happens to students who meet CCR criteria, and refine their credential lists, program designs, and investments as evidence accumulates.

The analysis also needs to look beyond statewide averages. As the [recent research](#) on IRCs demonstrates, an experience that appears beneficial on average may produce different results depending on program design. Disaggregating outcomes can help states identify essential program design elements and ensure that the benefits of high-quality experiences are equitably distributed across student groups.



PHOTO: COLE MILLER ON UNSPLASH

Workforce Pell is a stress test for state data systems

The distance between what states measure and what they need to know is not new, but federal policy is now forcing the question of how states will develop new data capacities. [Workforce Pell](#) requires states to evaluate short-term credential programs using information that crosses education and workforce systems, offering an important test of whether state data systems can do more than count inputs.

In order to be eligible for Workforce Pell, short-term programs will have to demonstrate that their students complete the program, find employment, and earn enough to satisfy a federal value-added earnings test. The [final rule](#) requires programs to achieve 70 percent completion and employment rates and limits tuition and fees based on program completers' earnings. Governors, in consultation with state workforce boards, must also determine that programs align with high-skill, high-wage, or in-demand occupations; meet employers' hiring requirements; lead to portable or stackable credentials; and award academic credit that applies toward a related certificate or degree.

While these eligibility requirements [do not set a particularly high bar](#), they still represent an important shift toward measuring the outcomes of educational programs. Rather than assuming that a program has value because it is aligned to labor-market demand, Workforce Pell asks states and the federal government to examine what happens to students after they enroll. States with an existing strong SLDS are better positioned than others to make the shift to measuring outcomes, but all states [have needed to strengthen their data systems](#) to meet Workforce Pell requirements.

These requirements ask a question that too few states are prepared to answer: does a given program help students find work while also creating a pathway to further education? Evaluating Workforce Pell eligibility requires states to have common definitions, cross-agency data-sharing agreements, and the ability to link program

records with postsecondary enrollment, employment, and wage data. States also need to understand how learners move back and forth through education and careers rather than treating employment and further learning as competing outcomes. Workforce Pell requires eligible programs to award academic credit that applies toward at least one related certificate or degree. Yet students enrolled in further education are excluded from the cohort used to calculate value-added earnings. Tracking credential stacking, subsequent postsecondary enrollment, and the actual use of awarded credit would help states see whether programs lead both to immediate opportunities and to longer-term advancement.

Workforce Pell does not directly involve K-12 data or accountability systems; its focus is on higher education and workforce data. But the data infrastructure states need to implement it well is largely the same as the infrastructure they need to determine whether their high school CCR indicators are valid. The education-to-workforce data required for Workforce Pell could allow a state to follow students who earned an IRC or participated in dual enrollment or work-based learning during high school to determine whether those experiences predicted stronger postsecondary and employment outcomes.

States that focus narrowly on building data systems tailored to Workforce Pell requirements are missing an opportunity. First, they could measure the efficacy of short-term credential and other postsecondary programs in ways that better reflect their value than the federal floor does by collecting data on employment and wages over a longer time horizon. They could also get serious about ensuring that short-term programs do not lead to educational dead ends by tracking the connections to further education described above. Second, states that integrate K-12 data into the systems they are building could begin answering the questions about which experiences before high school graduation actually improve outcomes and for which students that their CCR accountability indicators currently leave unresolved.

The Urban Institute's proposed [State Student Readiness Index](#) offers one model for how states could do so. Urban recommends using individual-level data to examine the relationship between CCR measures and later outcomes, while presenting data

publicly at the school, district, and state levels. Over time, states could strengthen those dashboards by linking the experiences students have before graduation with direct measures of postsecondary and workforce success.

Workforce Pell has created an immediate reason for states to invest in stronger education and workforce data systems. Its larger value could be helping states build the capacity to determine whether the pathways they support, from high school through postsecondary education and into employment, are delivering on their promise.

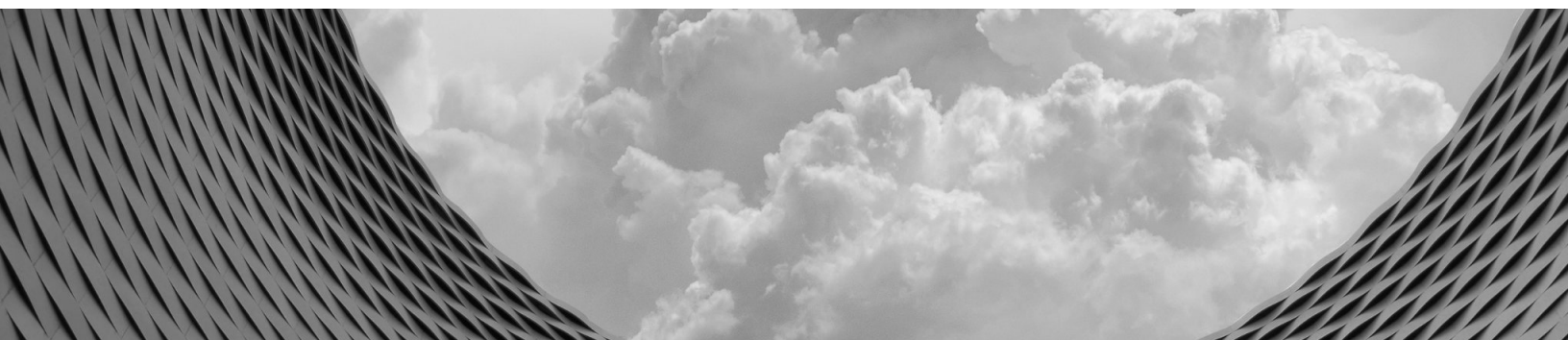


PHOTO: VICTOR ON UNSPLASH

What the next horizon of measurement might look like

Connecting K-12, postsecondary, and workforce data would give many states a far better understanding of students' trajectories than they have today. But even a technically sophisticated longitudinal data system would provide only a partial picture of whether young people are on pathways to thriving adulthood.

The education-to-career pathways field is increasingly oriented toward a vision for pathways that do more than improve education and employment outcomes. That fuller vision is, in large part, prompted by the need to address the risk that pathways focused on a narrow, technical set of outcomes will reinforce inequities in education systems. Student outcomes diverge for reasons not captured in administrative data,

including whether young people have access to adults who know how systems work, networks that open doors to first jobs, and a sense of belonging that sustains persistence. Young people from affluent families tend to have those assets, while the young people furthest from opportunity are more likely to depend on what their schools and pathways provide. That means that pathway designs that ignore these dimensions leave the students with the least room for error without access to experiences that make a real difference in outcomes. The pathways movement has too often [pursued equity in access while underinvesting in equity of outcomes](#), and closing that gap requires understanding the outcomes beyond enrollment, completion, and earnings that shape young people's lives.

Efforts to define those outcomes are already well underway across the field and are converging on a similar set of ideas. All4Ed's work aims to build pathways that lead to improved [outcomes across four domains](#): knowledge and capability, economic security and mobility, connection and belonging, and purpose and agency. The Commission on Purposeful Pathways, convened by the Gates Foundation, brought together a cross-sector group of national pathways leaders to develop a shared [vision and blueprint for purposeful pathways](#) that emphasizes the importance of cultivating student agency, including social capital and a sense of purpose and belonging. The Urban Institute's [Student Upward Mobility Initiative](#) (SUMI) is identifying evidence-based interventions aligned to the three pillars of their [framework for upward mobility](#): dignity and belonging, economic success, and power and autonomy.

States cannot capture these dynamics simply by adding another administrative dataset, and work toward understanding how to better measure these outcomes is already underway. The Gates Foundation's [Education-to-Workforce Indicator Framework](#), which was developed in partnership with over thirty national and community organizations, reflects a growing consensus that economic outcomes alone provide an incomplete picture of student success. The framework includes 99 indicators across three domains: academic progress and completion, career readiness and economic success, and social, emotional, and physical wellbeing. The

social, emotional, and physical wellbeing domain includes indicators, such as social capital, self-efficacy, and mental and emotional wellbeing, that the field is still learning to measure, but increasingly recognizes as critical outcomes for young people.

Existing research demonstrates that at least some of these outcomes can be studied rigorously, while promising approaches to measuring them are already emerging. The [Opportunity Insights](#) team is pioneering quantitative research methods for [studying social capital](#), with results demonstrating the key role of social capital in supporting economic mobility. Belonging has also been studied through rigorous experimental research [reviewed against What Works Clearinghouse standards](#); key findings include that a brief social-belonging intervention [increased persistence](#) in the first year of postsecondary education, with the largest gains among students from groups with historically lower rates of college completion. The [Christensen Institute](#) has documented schools and programs measuring several dimensions of students' social capital. And the Urban Institute's SUMI is supporting research to develop and validate [measures of the skills](#) that shape students' long-term mobility, including outcomes such as autonomy, belonging, and job quality. These approaches remain an emerging field rather than a settled set of measures ready for adoption by states.

“ *Relationships, belonging, and agency do not have to remain invisible just because they are harder to quantify than course completion.* ”

The design of outcome measures that look beyond education and employment is still nascent, and these measures are not yet ready for inclusion in a high-stakes accountability formula. Measures should not carry consequences before states have established that they are valid, reliable, comparable, and appropriate for the use

being proposed. But states should seek to build systems capable of learning more than administrative records can tell them today and to invest in developing outcome measures that reflect a full vision for pathways to thriving. States can put SLDS to at least three distinct uses, each of which demands a different standard of evidence.

Research and continuous improvement

States can explore patterns, identify variation, test hypotheses, and determine where and how programs may need to change. Measures used for this purpose may still be developing, and findings could be used as the basis for additional quantitative or qualitative investigation.

Public information and state planning

Students and families need accurate information about outcomes, while policymakers need evidence to shape funding and program approval decisions, as well as guidance on broader education and workforce strategies. Those uses require transparency about what the available data captures and what it misses.

Accountability

Measures tied to school ratings, interventions, or other consequences should meet a higher standard. They must be sufficiently valid, reliable, and comparable, and the schools and districts being evaluated must have a meaningful ability to affect them.

Measures related to thriving currently belong in the first two categories, where they can help states learn which experiences in high school build the relationships, sense of purpose, and agency that shape students' trajectories. But that does not mean that they should sit outside accountability systems indefinitely. Accountability systems function as both a signal of what states value in education and a mechanism for ensuring those values show up in what students experience in their

schools. That is a reason to keep working to design and validate appropriate measures for the full range of outcomes associated with thriving.

States do not need to measure everything right now. The same principle applies to every indicator a state uses: inclusion in an accountability system is a design decision, and it should follow from a measure's purpose and the evidence behind it, not from habit or availability. That means states need data systems that are built for learning as well as evaluation, capable of carrying measures at different stages of maturity, and clear about which is which.

What states can do differently

States do not need to wait until they have perfect data systems or settled measures for every dimension of thriving before they begin strengthening their approaches. They can start by designing longitudinal data systems around the questions they need to answer, not around counting inputs. Some of that work can begin immediately using data states already have; those efforts will make longer-term work to strengthen data infrastructure possible. Responsibility for this work is shared: depending on the state, the steps below may be led by and coordinated across governors, legislatures, and education and workforce agencies.

What states can do now

Link CCR indicators to outcomes beyond high school. States can use the individual-level data already in their education data systems to connect CCR measures (e.g., credential attainment, dual enrollment, CTE completion) to postsecondary and employment outcomes rather than reporting participation totals alone.

Add granularity to existing data. States can collect data on the context in which students achieve existing CCR benchmarks, which will support using the data for continuous improvement of existing efforts. For example, in addition to recording whether a student earned an IRC, states can record which credential, in which coursework, and as part of what pathway.

Ensure that all data is disaggregated. Data should be reported by race and ethnicity, income, gender, English learner status, disability status, and geography. Reporting based on statewide averages conceals inequitable results.

Adopt stronger quality standards for credentials used in accountability systems. Most states currently approve credentials [based on](#) design criteria such as labor-market alignment and on recommendations from educators and employers. States can begin adding outcome-based validation using criteria like wage gains, postsecondary enrollment, and employment rates where that data exists. They can also employ revalidation processes that examine students' outcomes and revise approved lists as data accumulates.

Audit and extend cross-agency data-sharing agreements. [Most states](#) have some agreements and an SLDS in place, but that does not necessarily mean that they have linked all relevant data or that they permit routine analysis of it rather than one-time, single-purpose reports. States should also ensure that K-12 systems are included in ongoing efforts to build the data systems required for Workforce Pell implementation.

What states can do over the long term

Extend data systems where needed to ensure they span the full education-to-career continuum. Nearly every state operates an SLDS, but [far fewer](#) have connected it across the full continuum of education-to-workforce data, and fewer still use it routinely to guide key decisions. Having an SLDS is not on its own always enough to answer questions about student outcomes and whether they are equitable.

Evaluate long-term outcomes. Accountability systems typically use [short-term, predictive measures](#) that are not designed to support understanding of students' long-term trajectories. States should track employment, earnings, and continued education at set intervals after students leave high school (e.g., six months, two years, and five years out) and again after they complete or leave postsecondary programs. This is key to understanding what produces upward mobility over the long term. For example, short-term credentials often show early earnings advantages that [fade with time](#), while bachelor's degrees [take more time to demonstrate their value](#). Longer measurement horizons also make it possible to understand whether dual enrollment credits apply toward degrees, CTE completers find work in the fields they prepared for, IRCs stack toward further education, or noncredit programs lead into credit-bearing ones.

Make outcomes data accessible to and usable by the public. States can build outcomes dashboards at the school, district, and state levels, along the lines of the [Urban Institute's proposed State Student Readiness Index](#), so students, families, educators, and policymakers can see where experiences lead, not just whether they occurred.

Design flexible data systems that can evolve over time. Build data systems with the flexibility to incorporate emerging indicators, including those in the [Education-to-Workforce Framework](#)'s wellbeing domain. These can be used for research and continuous improvement at first, public reporting as they mature, and accountability once they have been fully validated.

Every state with a college and career readiness indicator in its accountability system has already made a bet that certain experiences will prepare young people for success after high school graduation.

State leaders who want to know if that bet was right need data systems that support both accountability and learning.



PHOTO: GERRIT VERMEULEN ON UNSPLASH

About All4Ed

Founded in 2001, All4Ed is a national nonprofit that drives transformation in education-to-career systems to ensure that every young person thrives in learning, work, and life. We work with federal and state policymakers, K-12 and higher education leaders, and cross-sector partners to advance equitable, learner-centered pathways organized around four domains of thriving: knowledge and capability, economic security and mobility, connection and belonging, and purpose and agency. Through policy advocacy and activation, technical assistance, and thought leadership, we move ideas from legislation to implementation, strengthen state and regional pathways ecosystems, and challenge assumptions about what pathways are for.

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