

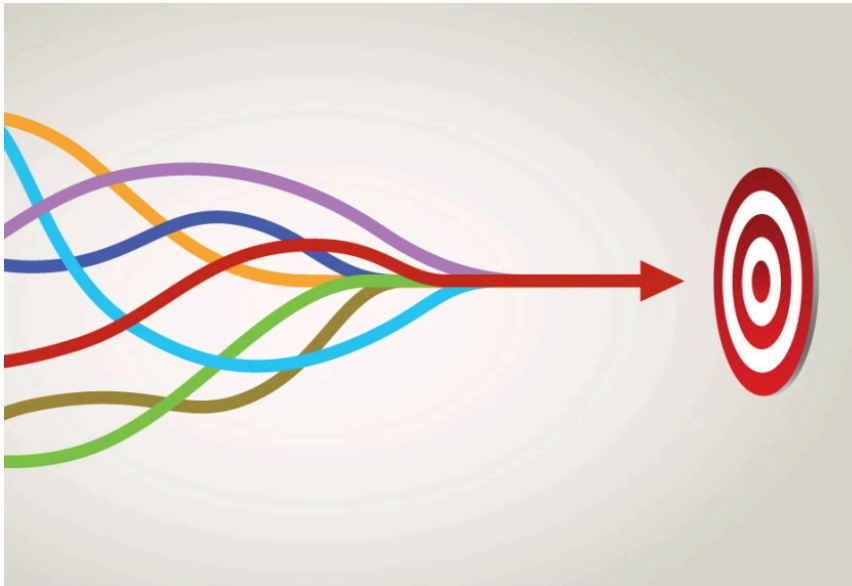
It May Be Time to Retire the Carnegie Unit. Are There Better Measures of Learning?

What would this mean for schools?



By Rick Hess — May 28, 2024

7 min read



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For more than a century, the American high school has been shaped by the Carnegie unit. Well, Tim Knowles, the 10th president of the Carnegie Foundation for the Advancement of Teaching, is intent on dethroning the measure of learning his organization made ubiquitous. Last April, Carnegie and the Educational Testing Service announced an effort to replace the Carnegie unit with a “new currency of education” that would substitute demonstrated “skills and accomplishments” for hours of study. Can they really do this? What would it mean in practice? Jal Mehta and I discussed this last fall in “Straight Talk,” but, now that the initiative’s a year old, I thought it worth checking in with Knowles himself. Before taking over Carnegie, Knowles’ roles included founding the University of Chicago’s Urban Education Institute, serving as deputy superintendent in Boston and as founding director of Teach For America in New York, and teaching African history in Botswana. Here’s Part 1 of our conversation, the second of which is scheduled to publish on Thursday.

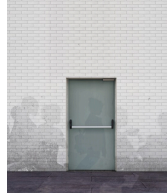
—Rick

Rick: So, let's do a bit of quick history. What is the Carnegie unit?

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Tim: The Carnegie unit, or what some call the credit hour, was developed to define the amount of time students needed to spend in a particular course to earn credit toward a high school diploma or college degree. Most of us are familiar with it from our high school transcripts. It still serves as the basis for calculating the credits needed for graduation in many states and school districts. When it was conceived in 1906, the Carnegie unit played an important role in standardizing a highly fragmented and still relatively new system of universal public education. Though imperfect, the Carnegie unit provided a time-based way to equate what happened in a Boston Latin School with what occurred in a one-room schoolhouse on the Western frontier. Time, after all, was a straightforward and reasonable constant in an era when we didn't have anywhere near the psychometric sophistication or technology to measure outcomes. But in the century since, the input-based way of quantifying education has become hardwired into both K–12 and postsecondary education in ways that go far beyond its initial purpose.

Rick: What prompted you to launch this rethink?

Tim: For decades, we've known that a time-based system of education is at odds with our educational aspirations. As a result, there has been no shortage of efforts to shift toward competency- and mastery-based frameworks that could erode the impacts of seat time. But the Carnegie unit has held up because, despite its imperfections, it is incredibly convenient. It served a purpose, and as appealing as it is to shift from inputs to outcomes, measuring outcomes is really, really hard. Many recognized that the Carnegie unit wasn't perfect, but there simply weren't great alternatives.

Rick: So, why now?

Tim: Today, just as advanced computing power enables us to decode the genome, it allows us to evaluate, at scale, the nuances of not just what people know but how they think. Rather than sticking to simplistic scenarios, we can now map terabytes of data that undergird the thinking of problem-solvers at organizations like Roblox and McKinsey & Company. We can analyze creativity among Disney's world-famous Imagineers and systems thinking among engineers at companies like SpaceX. So, the "why now" stems not only from past criticisms of the Carnegie unit and the fact that a time-based system has outlived its utility but also the promise of entirely new approaches. Advances in AI and computing efficiency now allow us to build new measurement models and create digital environments that mirror real-world scenarios. We can quantify and measure educational outcomes in ways that offer far greater precision into what a student has learned than time ever could. Such scenarios are essential to testing the sort of deep-thinking skills—like navigating ambiguity, adapting to changing information, and leveraging creativity—and the deep synthesis that the information age will demand of young people. This isn't about divorcing skills from content. It is about quantifying the enterprise of education in ways that are much more tightly aligned with the present and future realities that students will encounter.

Rick: What kind of reception have you gotten? And what kinds of concerns have been raised?

Tim: Change is always met with resistance, and this work has its share of critics. In some corners, we face concerns that efforts to measure and quantify skills are at odds with goals like content mastery and increasing student engagement with complex texts. That's simply not true. I can appreciate that it's hard for people to imagine what a new system, not grounded in time, might look like. It's hard for people to imagine how we can measure and quantify skills like critical thinking in ways that value principles of rigor and excellence. In some ways, those concerns are fair. To illustrate, consider what it would be like to ask people to conceptualize an electric car in an era when the innovations in batteries that make electric cars work hadn't yet been developed. Sure, the lithium-ion battery was invented in the late 1970s, but the variants that allow for electric vehicles that can be charged in minutes and run for hundreds of miles are all recent innovations. The shift to mastery-based is similarly dependent on new technology. Science is iterative, and this work will be no different. But it can be hard to conceptualize both a new system and the underlying innovation that enables such a system to exist in the first place.

Rick: Since you're out talking about all this, I suspect you've also had some more enthusiastic responses?

Tim: State and district leaders have been extraordinarily supportive of the goal of rethinking the Carnegie unit. And I think they appreciate the irony that Carnegie is the one pushing for it. They also recognize the complexity of the challenge ahead. A broad range of schools, systems, and states are working on implementing competency-based education. For example, we recently established innovative school systems—we call them “learning zones”—in Arizona, New Mexico, and Indiana. These learning zones are engaged in competency-based and community-connected learning that push beyond the Carnegie unit's focus on instructional minutes in classrooms. But these efforts face a certain terminal velocity unless and until there is a parallel investment in researching and building the tools needed to enable them. We acknowledge that we can't just remove the Carnegie unit without demonstrating that alternatives improve on our current model. At the same time, we can't allow concerns about the unknown to lead to inaction. Even detractors will acknowledge that our current system is failing far too many young people and that the incremental reforms of the past decades haven't had sufficient impact.

Rick: You've mentioned the need to think more about recognizing learning that happens outside of the schoolhouse. What does that look like?

Tim: We all know that learning isn't confined to the four walls of the classroom. Students learn at home and in extracurricular activities and enrichment programs. They learn in part-time jobs or through athletics and volunteer activities. We also know that skills developed outside the classroom—like leadership, teamwork, and persistence—are valued not just by parents and students but employers and the postsecondary sector. An education system grounded in seat time will consistently fail to give credit to students for nonschool-based learning experiences no matter how rigorous, rich, and relevant they may be.

Rick: Are there any current illustrations of what you have in mind when it comes to recognizing these types of experiences as learning?

Tim: Fortunately, a number of states do acknowledge the importance of learning beyond the walls of the classroom, either by giving students credit for learning that takes place outside the classroom or counting work-based learning experiences toward graduation requirements. New Hampshire's Learn Everywhere program is one example. Students can earn credit for outside-of-school learning experiences offered through state-authorized organizations, work-based learning programs, and community colleges. Other examples of promising work are the pilot programs taking place in Idaho, Illinois, and Kentucky in partnership with the XQ Institute to implement competency-based math badges. Badges provide mechanisms for schools and systems to establish personalized, flexible pathways toward mastery and can connect student learning to—and give students credit for—math

competencies they achieve in career and technical education programs or through work-based learning experiences.