Achieving Educational Productivity In The United States
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About ERP

Educational Results Partnership (ERP) is a non-profit organization that applies data science to help improve student outcomes and career readiness throughout the educational system. Our goal is to ensure that more students enter the workforce with the skills today’s global economy demands. In partnership with educators and employers, we are charting the pathways that lead to academic success and living-wage jobs. Our partners include hundreds of K-12 educational institutions across the country, the nation’s largest higher education system, employer-led organizations and the foundations of former U.S. Presidents. ERP has accumulated the nation’s largest database on student achievement from kindergarten into the labor market. We use data science and predictive analytics to identify successful public education systems, practices, programs and policies that are delivering the best results for students. We are committed to closing equity gaps in education and the labor market. Our research centers on improving academic and workforce outcomes for all, including students of color, foster youth and students in high-poverty regions.
Introduction

For over 23 years, Educational Results Partnership (ERP) has used data to help improve student outcomes and career readiness throughout the educational system. We founded the nation’s Honor Roll program for K12 schools as part of a national effort to identify higher-performing schools and districts that are improving student outcomes. It is the sole school recognition program developed in collaboration with business leaders using only student achievement outcomes as the criteria, with a focus on improvement sustained over time for historically disadvantaged populations.

Through our work and partnerships with educational institutions at all levels, ERP also catalyzed change in the higher education sector leading to significant education improvement and policy changes such as:

- Championing California’s first intersegmental data sharing partnerships through Cal-PASS Plus and Regional Learning Collaboratives.

- Co-championing and co-developing a predictive analytics model for “multiple measures” placement of students at 80 community colleges, which led to remedial education reform in California and the passage of AB 705.

- Inspiring the creation of the California Guided Pathways Project to better align education and workforce development.

Despite these data-driven improvements in the education sector, the fact remains that most learners in the United States will not graduate with bachelor’s degrees. There is also limited evidence of a person’s learning, on many dimensions (cognitive, social-emotional, occupational), being predictive of their earning potential in the labor market. These facts lead us to believe that to improve economic mobility for a wider range of people, the future must focus on directly measuring the relationship between learning and earning. In a nutshell, while many will continue to benefit tremendously from the traditional educational pathway, most young people’s financial limitations, life constraints and personal interests will restrict their choices. We believe people have more capabilities than what the current academic data indicate and their productive potential is being under-measured as a result. It is why more employers are starting to eliminate college degree requirements for many jobs.

For these reasons, ERP is evolving to doing more than just measuring academic performance outcomes data, we are now also beginning to design and measure economic and job outcomes data, and the relationship between the two.

Since 2021, ERP has been working on developing the most relevant educational metrics of the future, which align to job outcomes and economic mobility. To make progress on this front, ERP has been organizing leaders in a variety of sectors to develop ways to better measure the relationship between learning and earning. These efforts were inspired by the need to help the nation and its students recover the amount of educational and economic productivity lost during the pandemic, and to improve educational and economic opportunity more broadly over time. It is no secret that the learning loss experienced during the pandemic has had a negative impact on students and learners.
However, it also presents a common challenge in the future for more than educators, it also impacts employers, economists, workforce boards, policymakers, and others. If this challenge is not mitigated, learning loss will continue to result in even greater economic losses over time. It will also present a greater risk to national security if the United States becomes increasingly less competitive in the future with employers struggling to find talent that is prepared to succeed in the workforce.

This paper is a follow-up to our first publication and outlines the blueprint for designing and implementing a new architecture focused on educational productivity, as the long-term solution for addressing the common challenges facing all stakeholders affected by learning losses. Educational productivity focuses on what an individual has learned, their resultant productive potential in the workforce, and the economic value of what they know and how it can contribute to the economy. The goal of our “new architecture” is to improve the lives of all Americans by maximizing every person’s productive potential and economic mobility.

In presenting this blueprint, we want to emphasize our belief that the primary purpose of education is the integral development of a person and the betterment of society. Schooling, and its associated performance metrics determined by standardized tests and grades, are designed for measuring and tracking academic progress and achievement toward completion and award of a high school and/or a postsecondary degree, credential, certificate, or other award. These are valuable milestones and metrics for helping educators and others assess students’ academic performance and needed interventions as they work toward completion in an academic trajectory.

However, after two decades of experience working closely with these academic data, we know they are not designed to predict performance or productivity in the workforce, or one’s ability to be economically successful. Nor should they, as traditional educational institutions and their established metrics of success, are not designed to be training centers for employers. Their purpose is to help students develop as humans and learn fundamentals for the betterment of society. In the traditional American educational model, employers and their skills needs do not play a significant role in developing or shaping the academic curriculum. This curriculum is designed and implemented by educators and academic professionals in alignment with standards for measuring academic progress and human development.

The goal of the new architecture is not to disrupt or attempt to change traditional academic and educational institutions or create competing models. What we aim to do is apply ERP’s existing educational improvement framework and approach to a new framework focused on economic mobility. Using our framework, the goals of the new architecture are to:

1. Support existing education institutions and systems by using their data in new and different ways to match talent to jobs and directly measure the relationship between learning and earnings.

2. Develop “educational productivity metrics” that directly measure the relationship between learning and earnings.

3. Use these metrics as benchmarks for measuring improvement over time.

4. Based on educational productivity metric results, identify the most successful institutions and systems and build a best practices framework.
Defining Educational Productivity

Educational productivity is defined as linking education and career pathways to increase economic opportunity, strengthen the workforce and bolster U.S. competitiveness to protect national security. This concept advances an individuals’ productive potential based on what they have learned and the economic value of that learning. However, separate from an academic degree, diploma, certificate or credential, the main goal is to enable every American to reach their productive potential at every stage of life—by making sufficient and targeted public investments—with evidence-based practices and appropriate accountability that produce opportunity and upward mobility for all individuals while maximizing economic productivity for the U.S. overall.

We began developing the new architecture on educational productivity by convening a group of national thought leaders. The participating leaders represented a variety of stakeholders ranging from early childhood development, K12 and higher education, employers, economics, workforce systems and policy influencers. This group met in Sacramento, California in October 2021 to begin sharing information and to define and brainstorm the concept of educational productivity. The major themes that emerged from that meeting were:

- To measure educational productivity there must be a common language among learning, employment and economics.
- The current educational system design is not serving the best interest of most individuals. It does not reliably measure the productive potential of all individuals.
- Educational institutions at all levels are facing too many challenges and obstacles to change their models and help all learners succeed over time.
- There can be economic value in many forms of education (college, career technical education and skills-based training, etc.). Many forms should be included and valued in the new architecture.
- The urgent need for long-term solutions to the consequences of the pandemic, and to the historical and pervasive economic inequality preceding it, presents an opportunity for educators, employers and economists to come together and unite around the development of common outcomes metrics aligned to an economic north star, which is pervasive in the minds of most students.

Moreover, this architecture is focused on translating learning into earnings, as learning at all stages in life determines productive potential and earnings for individuals — and productivity of the U.S. economy. Meanwhile, missed opportunity and learning losses at all stages of life reduce an individual’s earnings and subsequent regional and aggregate economic productivity and output.

To help the highest needs populations first, the new architecture must:

- Focus on the “opportunity loss” population of learners who have not completed the traditional educational pathway model. Opportunity loss is defined as individuals who have not completed a college degree, credential, certificate or enrolled in a postsecondary education.
- More clearly define the measurable outcomes of this alternative “educational productivity” model and the data needed to implement it. This model should not compete with the traditional pathway model but rather collaborate with existing institutions and infrastructure to maximize the potential of those in the “opportunity loss” population.
Measuring Educational Productivity

To advance and measure the concept, a second Institute was held in September 2022 to begin taking steps toward the development of metrics for an educational productivity model. Participants in the second institute collectively brainstormed the steps leading toward development of a more equitable, credible, practical, and useful predictive model for improving educational productivity, particularly for the opportunity loss population and to begin the process of identifying:

- The most valid and reliable data and research collected to date on the economic value of learning at each point in an individual’s life for both the individual and their contribution to the economy.

- To what extent interventions have been evaluated by their impacts on economic outcomes for both individuals and society.

- The steps needed to develop a more credible, practical, and useful predictive model for improving educational productivity.

- Credible = Valid & reliable information to both employers and individuals.

- Practical = Easy to access and understand.

- Useful = Utilized by both employers and individuals.

ERP brought together another diverse representation of stakeholders including leading economists, early childhood experts, employers, academic experts, etc. who have studied the relationship between education and economics. We sought to find out if there is evidence to support a link between learning and economic prosperity. While there is some research linking educational attainment and a range of skills to earnings, we believe there needs to be more evidence, particularly causal, that directly links learning and what an individual has learned, with their earnings and earning potential in a variety of occupations and industries. In other words, measurements of “learning” in K12 systems as defined by educational attainment proxy metrics such as seat time/diplomas/degrees/credentials or standardized tests, mostly measure content mastery as defined by academic experts and policy experts.

There is a need to study the relationship between actual learning and earnings/ability to earn and the common language between these metrics. The relevant learning can exist on many dimensions including cognitive, social-emotional, and occupational skills. It can include complex analytical skills, ability to communicate and work in a team, as well as the ability to perform very diverse occupational tasks—everything from machine-tooling to care-providing to financial analysis or customer communication.
Key takeaways from the second Institute:

- There is a need for more data related to the mastery of competencies that are valuable to employers and the labor market, or to view existing data sets through this lens if we aim to measure the relationship between learning and earnings.

- The traditional educational pathway model is linear and does not work for all learners. Flexible sequencing in educational programs, and measuring the economic value of learning down to the course level, would be of value to the model being developed for the new architecture.

- When developing a common language in the new architecture, we should re-frame the narrative around deficiency-based language such as “dropout” or “non-completer”. In an educational productivity model, these terms should be replaced with language that demonstrates what the individual can do in the labor market with the learning they have achieved to date, and what opportunities they can work toward over time. The use of terms to describe learning and earning progress must be carefully constructed since learning is a lifelong endeavor.

- Collecting better data in areas where there are large gaps in meaningful data collection such as work permits approved by school districts, paid apprenticeships, work-based learning etc., on-the-job performance as reported by employers, was seen as an opportunity critical to understanding the relationship between learning and workforce preparation. We also need much more data on the learning taking place in the early childhood and K-12 years, and the extent to which such learning predicts the later development of a range of skills that different employers seek.

- The opportunity for employers to benefit from the knowledge ERP has gained in working with large amounts of student data over the past decade was viewed as a potential incentive for employers to participate in pilot programs to test and prove the concept of educational productivity. There are existing data sets which can be utilized to begin formulating new metrics of success that are established by employers and their needs, independent of educational attainment.

Of course, we recognize that different employers in different industries seek a very wide range of skills across occupations, so that any one employer’s skills needs (or even those of a specific group) should not be too heavily weighted in our analysis. Furthermore, as workers move across jobs in their careers, different skills will be valued as well. Still, learning more about how these employers view skills and how they affect performance would add substantially to our understanding of the economic value of learning over a lifetime.

We also note that any group of workers—including the “opportunity loss” population—is very diverse in terms of the learning that they have gained as they enter the job market.

For instance, those who have completed some post-secondary education (but without a credential) might be more attractive to employers than those with less evidence of formal education. With better data on what each group knows, employers can make more informed choices about whom to employ in which jobs. They might be more comfortable in investing in on-the-job training that enhances worker productivity and their future earnings. And the workers themselves, with better data on their skills and potential, would likely be more willing to invest in themselves, when they can more clearly ascertain their productive potential in a range of possible jobs.
Developing and Implementing a Blueprint

Under the status quo, American employers often face a shrinking talent pool, especially as the nation’s population ages. However, this does not have to be the case - especially since, in the labor market, there is undervalued and unrecognized talent without college degrees. Employers must adopt new and different ways to connect with this talent by partnering with educational institutions and others, to identify and hire the unrecognized and undervalued talent they are currently missing. Higher education institutions must also be open to taking in more “non-traditional students” and adopting more flexible course content and delivery to meet the needs of these learners. Learners need more information, self-agency, and the tools to self-navigate this new environment. The blueprint below outlines what needs to happen among employers, higher education institutions and learners to successfully implement the educational productivity concept in practice.

The focus of our blueprint is matching talent from the opportunity loss population to in-demand, living-wage jobs. Using academic outcomes data for this population, we can translate what individuals know and have learned so far in their academic trajectory, and match that knowledge to an in-demand job in the labor market. There is also a need to measure the economic impact on local communities and geographic regions working together as employers, community colleges and universities to connect these learners to employment. A parallel goal is to promote a lifelong learning culture among individuals and their employers.

The learner must also know for themselves in simple terms, the relationship between their learning and earning ability. Using their student records to connect to employment is part of this, but not the end. It is critical to promote the idea of the individual continuing to take courses in college or other higher education (courses that have actual labor market value) over time to advance in the workplace.
Conclusion

To better measure the capabilities and productive potential of individuals beyond what current academic data indicates, we plan to conduct a pilot study to match more workers with employers who cannot now meet their demands for skilled workers. We will elicit more information on the learning and potential productivity of students with low earnings who have not completed a college credential and match them to employers who are in position to make better use of their unrecognized talent and invest even more in their skills. We will do so based on other indicators of their current skills and labor market experience. Once we have matched them to employers, we will follow them over time to measure:

- The percentage of learners who will not complete degrees and are moved from a non-living wage job to a living wage job; and/or
- The percentage of these learners who increase their education or work-based learning.

Over time, we will seek to make more data available on what students learn at each stage of education, and how early skills affect later skill development, of the type that translate into productivity in various kinds of workplaces. All of this will hopefully lead to a “new architecture” where many kinds of learning over a lifetime are measured and valued for their contributions to productivity and earnings.