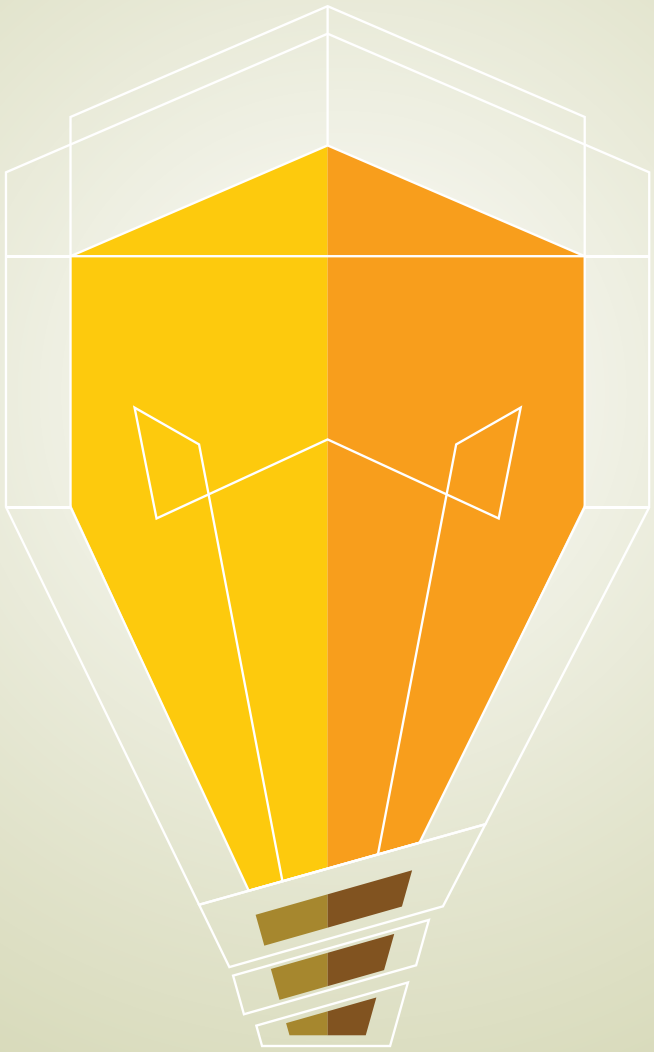
SEPTEMBER 2016

The US Education Innovation Index

Prototype and Report



Jason Weeby, Kelly Robson, and George Mu

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Introduction

Innovation is critical to the advancement of any sector. It increases the productivity of firms and provides stakeholders with new choices. Innovation-driven economies push the boundaries of the technological frontier and successfully exploit opportunities in new markets. This makes innovation a critical element to the competitiveness of advanced economies.[1]

Innovation is essential in the education sector too. To reverse the trend of widening achievement gaps, we'll need new and improved education opportunities—alternatives to the centuries-old model for delivering education that underperforms for millions of high-need students.

Fortunately, we're beginning to see some progress. The education landscapes in America's cities are evolving rapidly into ecosystems of school operators and support organizations. The influx of philanthropic funds, the growth of the charter school movement, advances in education technology, and growing talent pipelines have created opportunities for innovation not seen before.

Yet compared to other sectors that have relied on continuous invention and improvement as a survival mechanism for decades, the national conversation about innovation in the education sector is still in its nascent phases.

As venture philanthropists, angel investors, incubators, accelerators, hackathons, design thinking, and other aspects of innovation have made their way into the education sector, individuals and organizations have benefited. Yet it's also important that we import lessons from other sectors that shed light on innovation at the ecosystem level.

In a sector rich with data, tools—like indices—that aggregate, analyze, and organize data into user-friendly platforms are increasingly valuable. Indices are macro-economic tools that measure multidimensional concepts that cannot be captured by a single indicator. Industry leaders and policymakers use indices to identify trends, draw attention to particular issues, determine whether the current mix of activities is producing desired results, and identify areas for improvement.

In a sector rich with data, tools—like indices—that aggregate, analyze, and organize data into user-friendly platforms are increasingly valuable.

Bellwether Education Partners has created the US Education Innovation Index (USEII) to provide empirical grounding for the national conversation on innovation in our dynamic new education sector. The USEII is a city-level composite indicator tailor-made for the education sector that measures innovation conditions and activities to help education and civic leaders encourage smart innovation.

Though a considerable amount of resources went into this version of the USEII, it was built to be a prototype. Ultimately, we strive to make the USEII the field's go-to source for city-based innovation knowledge. Bellwether Education Partners is seeking supporters to refine the theoretical framework, evaluate 30-50 cities across the U.S. annually, and publish the results in an interactive online format.

PART ONE

A Measurement Tool for a Dynamic New Sector

Looking for Alternatives to a Beleaguered System

In too many American cities, low-income students don't have the opportunity to attend a school that can provide them with a high-quality education. The National Assessment of Educational Progress (NAEP) demonstrates that across the country, "the performance of black, Hispanic, low income, and ELL students is below the average for all students collectively and lags behind that of white peers as a group. Though some progress has been made in closing gaps based on ethnicity over time, much like overall progress in student achievement, it has been slow and inconsistent."[2] NAEP results for 2015 show that black and Hispanic students perform 32 and 22 percentage points below white students on the eighth-grade mathematics assessment, respectively. The problem is even more pronounced in our traditional urban district schools. For example, the 2015 Trial Urban District Assessment (TUDA) results show that black and Hispanic students perform 37 and 28 percentage points below white students respectively on the same tests.[3]

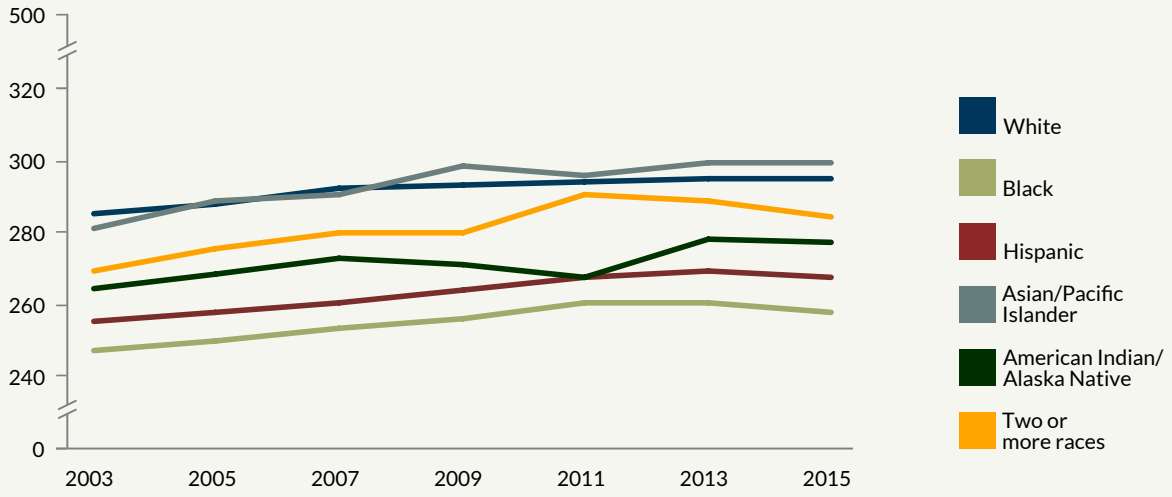
At the current rate of change, it would take 59 years to bring the average score for urban black eighth-grade students up to proficiency in mathematics.

At the current rate of change, it would take 59 years to bring the average score for urban black eighth-grade students up to proficiency in mathematics.[4]

Wide achievement gaps and the crawling pace of incremental improvement have motivated many school system leaders to implement new learning models that fundamentally challenge assumptions about teaching, learning, and how schools are organized. Personalized learning, blended learning, competency-based learning, problem-based/experiential learning, and other models are proliferating in district and charter schools with support from nonprofits like the Next Generation Learning Challenges and

Figure 1

National Assessment of Education Progress, Trial Urban District Assessment Average 8th Grade Math Score 2003-2015



Source: http://nces.ed.gov/nationsreportcard/naepdata/

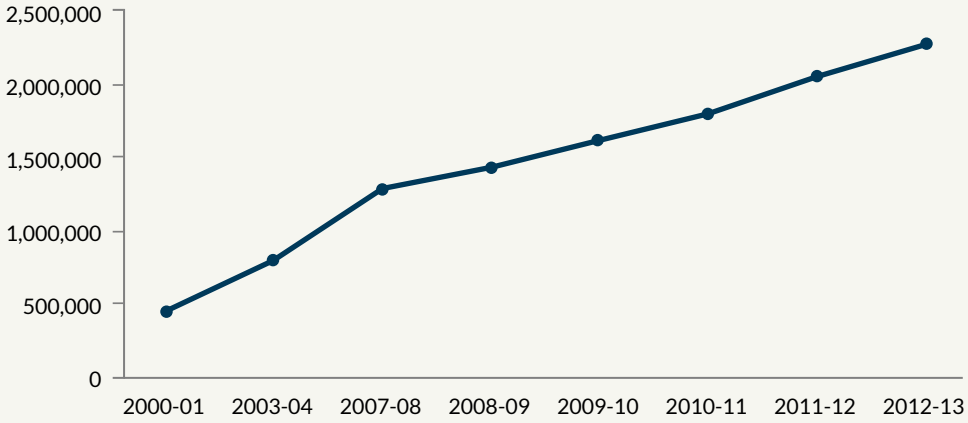
The Learning Accelerator. When operating in conventional school districts, flexible learning environments often run up against restrictive seat time requirements, procurement policies, collective bargaining agreements, and class size limits. In response, intrepid school and district leaders seek policy waivers and workarounds.[5, 6] These alternatives create pressure to improve schools and the bureaucracies in which they operate.

Families also look beyond programs and models for entirely new school types to provide new education opportunities. In the last two decades, many new alternatives have been implemented with the aim of improving academic outcomes for inner-city students. Collectively, they represent a challenge to long-standing models of governance and accountability.

- **Charter Schools.** According to the National Association of Public Charter Schools, "charter schools are the fastest-growing choice option in U.S. public education. Over the past five years, student enrollment in charter public schools has grown by 62 percent. In 43 states and the District of Columbia, more than 2.9 million students now attend charter schools—which is more than six percent of the total number of students enrolled in all public schools."[7] Importantly, 56 percent of the nation's 6,465 charter schools are located in a city. On the whole, charters serve a higher percentage of low-income and minority students compared to traditional public schools.[8]

Figure 2

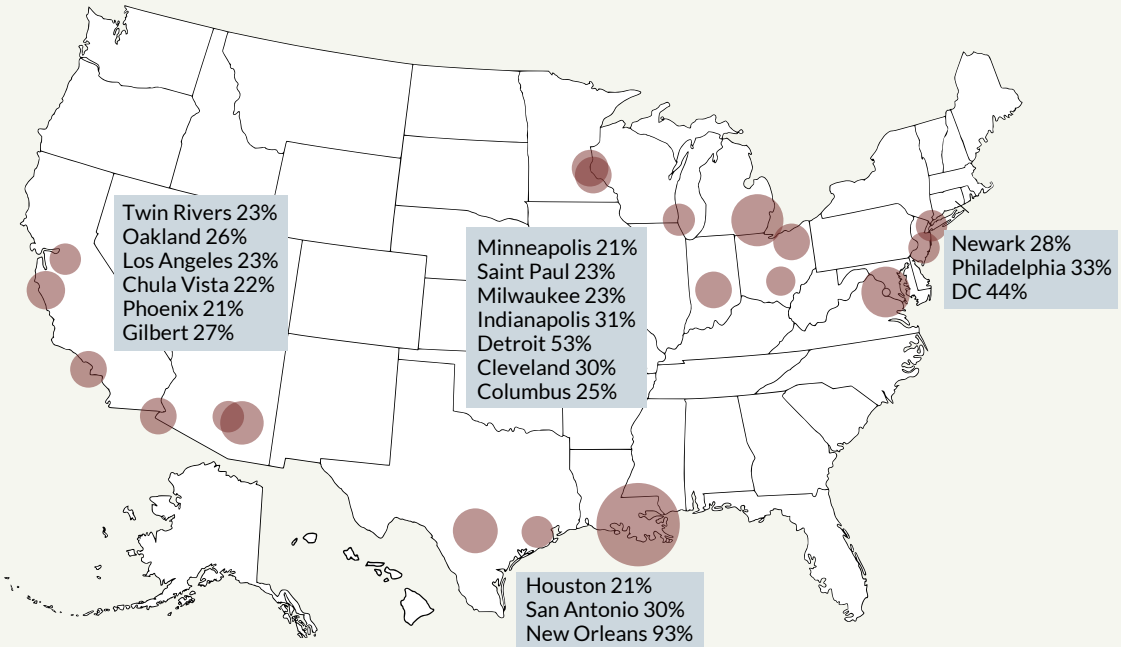
Growth in National Charter School Enrollment 2000-2013



Source: http://nces.ed.gov/programs/digest/d15/tables/dt15_216.20.asp

Figure 3

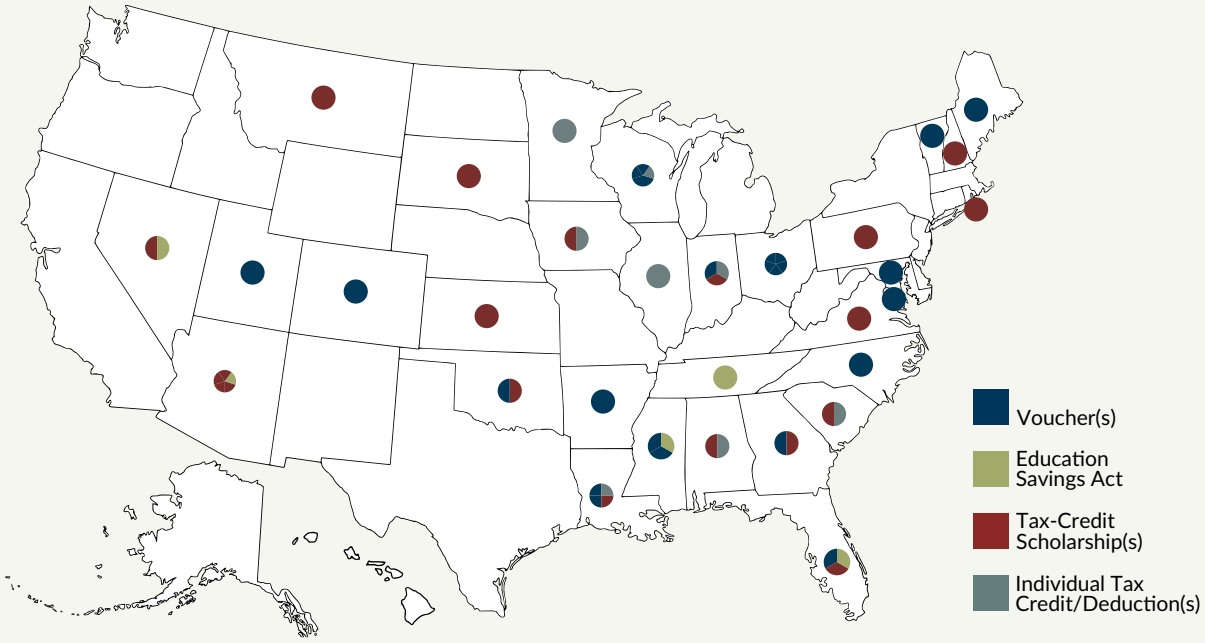
Cities With Over 30k Total Students and Above 20% Charter Market Share



Source: http://www.publiccharters.org/wp-content/uploads/2015/11/enrollmentshare_web.pdf

- **Private Schools.** Approximately 12 percent of U.S. K-12 students attend a private school.[9] Although private school enrollment has declined precipitously in the last two decades,[10] the many private school choice policies enacted since the landmark 2002 Supreme Court case Zelman v. Simmons-Harris may help arrest the trend. There are currently 61 private school choice programs in 30 states and the District of Columbia.[11] Vouchers, education savings accounts, tax-credit scholarships, and individual tax credits and deductions provide many low- and middle-income families with access to private schools that they wouldn't otherwise be able to afford.

Figure 4 Private School Choice Programs by State



Source: http://www.edchoice.org/school-choice/school-choice-in-america

- **Homeschooling.** The percentage of K-12 students homeschooled in the U.S. has increased from 2.2 percent in 2003 to 3.4 percent in 2012, the last year for which data are available.[12] Importantly, "91 percent of homeschooled students had parents who said that a concern about the environment of other schools was an important reason for homeschooling their child."[13] This disaffection demonstrates how families opt out of traditional schools in search of better solutions. African-American parents cite school-related racism as a chief reason for homeschooling.[14]
- **Virtual Schools and Online Charter Schools.** According to the National Center on Education Statistics, a virtual school is defined as, "A public school that offers only instruction in which students and teachers are separated by time and/or location, and interaction occurs via computers and/or telecommunications technologies. A virtual school generally does not have a physical facility that allows students to attend classes on site."[15] Since their inception in the early 1990s, virtual schools' enrollment has grown to over 250,000 students nationwide.[16] Although virtual schools constitute only 0.4 percent of U.S. K-12 student enrollment,[17] they have grown rapidly as technology has improved. Online charter schools are a subset of virtual schools and have a similarly rapid growth trajectory. They provide "the majority of classes (everything except PE, band, or a similar elective) to full-time students through a computer via the internet."[18] Despite their growth, virtual schools and online charter schools lag behind traditional brick-and-mortar schools in academic performance on the whole.[19] Three leading pro-charter education advocacy organizations recently published a report calling for improving the quality of full-time virtual charter schools.[20] While there are clear quality issues that must be addressed with virtual schools, the demand for new, flexible learning options shouldn't be ignored.
- **Micro Schools.** Micro schools "have no more than 150 students in grades K-12; multiple ages learn together in a single classroom; teachers act more as guides than lecturers; [and] there's a heavy emphasis on digital and project-based learning."[21] They can be district schools, charter schools, private schools, or nonprofits, or they can take place in more informal settings like maker spaces. The micro school movement is still in its infancy and reliable statistics are difficult to find, but startups like Alt School and Acton Academy and the Tiny School fellowships through 4.0 Schools have stoked interest in the idea from parents looking for a novel alternative to traditional schools.
- **New Governance Models.** Historically, traditional school districts educated the vast majority of students in any given U.S. city. However, since Minnesota passed the first charter school law in 1991 and Louisiana established the Recovery School District in 2004, the governance arrangements in city school systems have become much more complex.[22] Forty-three states and Washington, D.C. have charter school laws, 30 states and D.C. have private school choice programs, and seven states have

Achievement School Districts, which are statewide districts that take over failing schools in an effort to turn around their performance quickly. Even some enterprising urban school districts are beginning to explore new governance models. Denver Public Schools, Indianapolis Public Schools, and the Orleans Parish Public School Board, for instance, are autonomizing individual schools through charters or charter-like powers and taking on a portfolio management role. Additionally, sensing an opportunity to improve governance, a crop of organizations such as the Center for Reinventing Public Education, Empower Schools, the Donnell-Kay Foundation, and Level Up are researching, developing, and implementing new governance models.

As widening achievement gaps continue to sow discontent with traditional public schools and an influx of capital and talent focus their energies on new solutions, the growing adoption of new learning, school, and governance models will likely continue.

What Education Can Learn from Other Sectors

Innovation is prioritized in sectors like health care and technology to enable individual institutions and entire sectors to stay competitive locally and globally. Academic research on innovation stretches back decades and economic data offer empirical evidence on the effects of policies and practices. As a result, comprehensive policy, finance, supports, culture, human capital, and market structures have emerged to support innovation—all of which offer the education sector a tremendous body of knowledge from which to learn.

In our review of literature, we've approached the translation of findings from one sector to another with care to avoid misapplication. Even so, we've identified several salient lessons that will benefit education sector innovation.

1 **Cities matter.** The need for education innovation is greatest in our inner cities, where over half of Americans in poverty are concentrated.[23] Cities are also where most of our financial and intellectual capital resides. "Cities and urban areas … are magnets for highly skilled, entrepreneurial talent; they are dense hubs that fuse knowledge, financial resources, firms and markets, and they offer the thriving cultural environment that galvanizes creativity. Additionally, cities are more likely to produce start-ups, entrepreneurs and small businesses that turn ideas into new products and create new markets. Cities are the perfect breeding ground for innovation."[24] As Tom Vander Ark points out in his book, "Smart Cities That Work for Everyone," what happens at the city level has a direct impact on schools: "While state policy creates context, it is counties, cities, and school districts that determine the learning options available to families."[25]

2 **Change is good.** Dynamism is a central concept in modern economics grounded in the theory of creative destruction conceived by Joseph Schumpeter in 1942.[26] It explains how new, superior ideas replace obsolete ones to keep a sector competitive domestically and worldwide. The process happens through the entry and exit of firms and the expansion and contraction of jobs in a given market. As low-performing firms cease to operate, their human, financial, and physical capital are reallocated to new entrants or expanding incumbents offering better services or products. Healthy entry and exit rates differ between sectors, but tend to fall between five and 20 percent.[27] Too little dynamism, and underperformers continue to consume valuable resources that could be used by better organizations. Too much dynamism creates economic instability and effectively discourages entrepreneurs from launching new ventures and investors from funding them. What a healthy level of dynamism looks like for schools and education-focused nonprofits and companies is yet to be determined.

3 **Research and development is an engine of innovation.** The government and private sector have prioritized R&D to stay competitive domestically and globally for decades. Leading industries routinely spend between 10 and 30 percent of their sales revenue to create new products and services.[28] R&D funding has propelled the private sector to create comprehensive policy, finance, cultural, human capital, and market structures to support innovation. The same can't be said for the education sector. The U.S. invests 0.15 percent[29] of its federal education budget on R&D, versus other industries that spend 20 times[30] more on average.

4 **Policies can throttle or accelerate innovation.** Innovation activities and policy often seem unrelated, but the reality couldn't be further from the truth, especially in highly regulated sectors such as health care and education. Regulations play a vital role in making sure barriers to entry and exit are low, the playing field is level, information is accessible, opportunities are equitably distributed, and vulnerable populations aren't exploited or ignored. Bad policies can grind innovation to a halt. For instance, policies that favor existing organizations stymie innovation. Conversely, innovation-friendly policies such as reducing the time and energy necessary to launch a venture can make sure there's a constant flow of new, competing ideas in the sector.[31]

5 **Innovation doesn't always produce winners.** The rates of success and failure of new ventures vary by industry, but general trends tend to hold true. Roughly 50 percent of new companies in the U.S. survive to the five-year mark. Fewer still, roughly 30 percent, make it to the 10-year mark.[32] The proportion of venture-backed companies that fail to meet projected return on investments can be as high as 95 percent.[33] Failure is a necessity of the innovation process. The same infrastructure set up to encourage entrepreneurs to create ventures and test them in the market of ideas and competitors is also set up to weed out failures as quickly as possible so scarce resources can be reallocated to endeavors that are more promising. In sectors

where failure can have enormous downside risks, such as pharmaceuticals, trials are regulated and failure is highly controlled without slowing the pace of progress. More research is necessary to understand what controlled failure looks like in the education sector so students aren't harmed by the implementation of new or improved products, processes, school models, programs, or policies.

6 **Innovation is measurable.** Innovation and entrepreneurialism have been a focus of academic study since the late 1800s. Economists have made great strides in understanding the practices that influence innovation and the theories that undergird them. One such pursuit is to isolate the activities that lead to innovation and measure their effects on economies. While a healthy debate still exists, a core set of conditions and activities such as market dynamics, access to capital, access to talent, favorable policies, culture, and productivity can measure a sector's level of innovation.[34, 35] The nine pillars of the USEII are adapted from these conditions.

Education is a unique sector, to be sure. It is highly contextual, engrained in our cultural psyche, and rooted in our communities. Many lessons from other sectors simply won't translate and it would be imprudent and counterproductive to try to make them. However, the education sector isn't so unique that the scholarship, successes, and failures of those in other sectors shouldn't be explored.

Ultimately, we should be driving toward an education sector that prioritizes the development of new good ideas—wherever they originate—and systematic implementation and evaluation of them. Further, we must protect students from irresponsible innovation activities that have the potential to do more harm than good. To accomplish this, more research is necessary to identify the characteristics of the education sector's emerging public and private school markets and nonprofit ecosystems. New data specific to innovation will also be needed. The federal government regularly collects detailed data that are critical to measuring innovation such as industry market share; firm entry, exit, expansion, and contraction; and labor force expansion and contraction. Accessing and analyzing this data for the education sector currently requires a significant expenditure of time and energy. As our sector evolves, so too must the data that we collect.

Ultimately, we should be driving toward an education sector that prioritizes the development of new good ideas—wherever they originate—and systematic implementation and evaluation of them.

What Is an Index and Why Use One?

An index is a type of composite indicator commonly used to understand complex concepts such as innovation, competitiveness, or environmental quality. According to the Organisation for Economic Co-operation and Development (OECD), a composite indicator is formed when individual indicators are compiled into a single index, based on an underlying model of the multi-dimensional concept that is being measured. A composite indicator is constructed based on a theoretical framework that allows individual indicators to be selected, combined, and weighted in a manner that reflects the phenomena being measured.[36]

In a sector rich with data, tools—like indices—that aggregate, analyze, and organize data into user-friendly platforms are increasingly valuable. Education leaders need tools that can synthesize disparate sources of data into meaningful information so they can understand the real impact of reform strategies, highlight successes, identify investment decisions, and benchmark progress against others.

An index provides decision-makers with an easily accessible summary of a complex, multifactorial analysis while allowing for deep dives into individual pillars or indicators. Policymakers, funders, entrepreneurs, and system leaders use indices to:

- Understand the direction of developments
- Compare concepts across places, situations, and countries
- Assess states and trends in relation to goals and targets
- Detect early warnings

- Identify areas for action
- Anticipate future conditions and trends
- Communicate information to the general public or other decision-makers[37]

An index is an ideal tool for measuring innovation in the education sector because innovation is an increasingly important, multidimensional concept that cannot be measured by a single indicator. While policy, talent, culture, and collaboration are pillars of innovation, for instance, they are insufficient on their own to provide a complete picture. However, like any measurement tool, composite indicators have benefits and drawbacks that users must consider as they draw conclusions that inform their decisions.

Table 1 Pros and Cons of Composite Indicators[38]

PROS	CONS
• Can summarize complex, multi-dimensional realities with a view to supporting decision makers. • Are easier to interpret than a battery of many separate indicators. • Can assess progress of cities/countries over time. • Can reduce the visible size of a set of indicators without dropping the underlying information base. Thus, make it possible to include more information within the existing size limit. • Can place issues of city/country performance and progress at the center of the policy arena. • Can facilitate communication with general public (i.e. citizens, media, etc.) and promote accountability. • Can help to construct/underpin narratives for lay and literate audiences. • Can enable users to compare complex dimensions effectively.	• May send misleading policy messages if poorly constructed or misinterpreted. • May invite simplistic policy conclusions. • May be misused, e.g. to support a desired policy, if the construction process is not transparent and/or lacks sound statistical or conceptual principles. • May open up the selection of indicators and weights to political dispute. • May disguise serious failings in some dimensions and increase the difficulty of identifying proper remedial action, if the construction process is not transparent. • May lead to inappropriate policies if dimensions of performance that are difficult to measure are ignored.

US Education Innovation Index Framework

The US Education Innovation Index is a composite indicator comprising 42 indicators organized into nine pillars and two sub-indices.

It was constructed using the methodology and guidelines outlined in the OECD "Handbook on Constructing Composite Indicators," which is regarded as the gold standard for developing such macroeconomic tools. As a result, the USEII has a structure similar to widely used, high-quality indices such as the Global Innovation Index and Innovation Union Scoreboard.

The framework's pillars and indicators were selected and organized based on research-based evidence and input from experts from the education and private sectors as well as experts with experience in creating and consulting composite indicators. A more detailed explanation of the construction process, methodology, indicator selection rationales, and data sources can be found in the appendices.

Pillars of Innovation in the Education Sector

The USEII has two sub-indices, Innovation Conditions and Innovation Activities. Innovation Conditions determine the environment in which entrepreneurs, funders, and leaders work. They include barriers that slow or prevent innovation, such as talent shortages, as well as accelerators such as collaboration mechanisms. Each sub-index is made up of pillars, the major categories that influence education sector innovation at the city level. The Innovation Conditions sub-index consists of six pillars, described below.

Pillar 1a: Innovation Culture

Education systems can benefit from being embedded within a culture that prioritizes innovation generally, whether it is inside or outside education. Regular convenings, support for entrepreneurs, mentorship activities, and a high tolerance for risk are signs of cultural support for innovation and can affect a city's system of schools directly and indirectly.

Pillar 1b: Need for Academic Improvement

Poor or declining student achievement is likely to catalyze innovation. In cities where student achievement is perennially low, policymakers and education officials may feel pressure to try new tactics or adopt new policies or methodologies, and thus embrace innovative ideas. Conversely, in districts that are consistently performing at a high level or are improving steadily, officials may be hesitant or reluctant to change anything out of fear for reversing a positive academic trajectory. Note that the scoring on this pillar is counterintuitive; cities with high scores on this pillar have low student achievement and/or downward gap-closing trends. As the title suggests, a high score in this pillar signals need for improvement and opportunity to implement novel solutions.

Pillar 1c: Collaboration & Coordination Mechanisms

Collaboration and coordination mechanisms play a vital role in ensuring that information is accessible, all players are working in concert with one another rather than against one another, and opportunities are evenly distributed. Though collaboration and coordination can take place informally, formal mechanisms like coordinating intermediaries (sometimes called harbormasters), compacts, or common enrollment systems are signals that a city is taking seriously the need for coordination, especially across a diverse and decentralized system.

Pillar 1d: Talent Supply & Quality

A large, well-trained, and educated workforce is essential to enable schools and education organizations to grow and improve. Colleges and universities offering traditional teacher and administrator preparation programs, in addition to non-traditional pipelines, play a key role in ensuring a city has access to necessary human capital.

Pillar 1e: Innovation-Supporting Institutions

Institutions that directly support the work of education entrepreneurs are invaluable to innovative education organizations. Whether they bring together educators, startup leaders, policymakers, investors, and community groups to improve shared understanding of the city's needs or help school leaders network with one another, these institutions help make idea generation and implementation possible.

Pillar 1f: Innovation-Friendly Policy

Policies play a vital role in highly regulated industries like education. Bad policies can stagnate innovation and entrepreneurialism by creating barriers to entry for new ideas or by creating burdensome procedures for innovative organizations. On the other hand, good policies can help ensure a level playing field and equal access to information and opportunities. They can create a fair and transparent process for new ventures and provide support as ideas are incubated and launched.

The second sub-index, Innovation Activities, measures the actions that take place within a city's set of conditions. They denote the deliberate decisions people make to engage in an innovation activity. There are three pillars within the Innovation Activities sub-index, described below.

Pillar 2a: Innovation Investment

Financial investment in and support specifically for education innovation is a crucial factor for a thriving education ecosystem. Available state, city, and district-level funding can ensure a pool of funds for entrepreneurs interested in launching new education ventures or implementing new ideas. The allocation of precious financial capital to innovation activities also signals a value for and commitment to new solutions for schools and students. A steady stream of venture funding and philanthropic capital provides entrepreneurs access to flexible financial resources outside of the government or school district.

[Author's note: The current data on city-level philanthropic investment in education innovation activities is incomplete. The philanthropic investment indicator will be updated accordingly when we receive a new data set. Current results should be interpreted with caution.]

Pillar 2b: Deviation

The concept of deviation seeks to understand the ways in which a given district differs from its peers in terms of how it budgets its money. It is predicated on the idea that, because districts have some flexibility in how they direct their general funds to align with their strategic priorities, district budgets reflect the different choices and priorities of a district. If a district's strategic choices are reflected in how it allocates its budget, then deviation from peers should reflect the degree to which a district is breaking from the norm.

Pillar 2c: Dynamism

Business dynamics, in the form of entry and exit, is the mechanism by which outdated ideas and industry practices are replaced by new and potentially revolutionary ones at the firm level. Measuring the entry and exit of education-focused nonprofit organizations and the entry and exit of schools in the district, charter, and private school sectors provides a measure of how frequently low performers are exited from the system and of how frequently new ideas (in the form of organizations or schools) enter the system.

Favorable conditions and thriving activities are both important for innovation, but because entrepreneurs seeking solutions to problems can and often do operate in challenging or even hostile conditions, supportive conditions are not required for innovation activities to occur. As a result, the USEII calculates scores for conditions and activities separately and weights activities more heavily.

To measure the degree to which each pillar exists in a city, we designed a number of measurable indicators for each pillar. Each pillar's indicators are listed in the table below. The rationale for including each indicator, as well as an explanation of how each is scored and weighted, can be found in Appendix B.

Table 2

The US Education Innovation Index Framework

Sub-Index	Pillar	Indicator ID	Indicator
Innovation Conditions	Innovation Culture	1.a.1 1.a.2	Total number of startups per capita Presence of innovation-specific convenings
	Need for Academic Improvement	1.b.1 1.b.2 1.b.3 1.b.4	Five-year student achievement trend Past year achievement compared to state average Five-year FRL-Non-FRL achievement gap closing trend Past year FRL-Non-FRL achievement gap
	Collaboration & Coordination Mechanisms	1.c.1 1.c.2 1.c.3 1.c.4	Presence of Gates district-charter compact Presence of Strive partnerships Existence of common enrollment system Presence of coordinating intermediary
	Talent Supply & Quality	1.d.1 1.d.2 1.d.3 1.d.4	Participants and alumni of nationally renowned system-level talent pipeline organizations per student Number of education programs in region Presence of teacher residency program Percent of population 25 and over with a bachelor's degree or higher
	Innovation-Supporting Institutions	1.e.1 1.e.2 1.e.3 1.e.4 1.e.5 1.e.6	Presence of innovation-focused education foundations Presence of League of Innovative Schools Presence of DoE Education Innovation Cluster (EIC) Presence of senior district leader focused on innovation Education incubators and R&D orgs Percentage of households with a broadband internet subscription
	Innovation-Friendly Policy	1.f.1 1.f.2 1.f.3 1.f.4 1.f.5 1.f.6 1.f.7	School finance spending and equity Course choice Quality of charter school law Quality of authorizer Presence of independent (non-district) charter authorizer Presence of school choice programs (vouchers, education spending accounts, tax-credit scholarship, individual tax credit/deduction) Strength of accountability for tax credit and voucher programs
Innovation Activities	Innovation Investment	2.a.1 2.a.2 2.a.3 2.a.4 2.a.5 2.a.6 2.a.7 2.a.8	Presence of district funding committed to innovation Presence of state funding committed to innovation Presence of city funding committed to innovation Philanthropic capital—total Philanthropic capital—per capita Venture capital—total Venture capital—per capita Presence of federal innovation funding
	Deviation	2.b.1	District deviation (district model deviation from peer-group norm in state)
	Dynamism	2.c.1 2.c.2 2.c.3 2.c.4 2.c.5 2.c.6	Education nonprofit firm entry/exit Number of operating education startups Charter school exit (performance-based only) District school exit (performance-based only) Private school exit (any) School entry (any)

Constructing the US Education Innovation Index

Our goal for the USEII is for it to be a trusted and actionable decision-making tool for education sector leaders that is based on research and transparent, empirical data. To accomplish this, we followed the methodology and guidelines outlined in the OECD "Handbook on Constructing Composite Indicators," which economists regard as the gold standard for developing such macroeconomic tools, to the greatest degree of fidelity possible. As a result, the USEII has a structure similar to widely used, high-quality indices such as the Global Innovation Index and Innovation Union Scoreboard.

The one major exception we took to the guidelines outlined by the OECD was our decision not to perform a multivariate analysis on our prototype model. Conducting a multivariate analysis is a standard step in the OECD process in order to rule out collinearity (i.e. redundant indicators) and ensure that indicators are not correlated with one another and therefore overrepresented in the final score. In this case, because of funding limitations and the nascent state of this project—we measured just four cities to create this prototype—we do not currently have enough data to conduct this analysis.

When making decisions on what the index would measure, we selected and organized the framework's pillars and indicators based on findings in academic literature focused on innovation measurement and solicited input from education sector experts. To pressure test our framework for analytical soundness, we sought out experts with experience in creating and consulting composite indicators to advise us during the index construction process.

Throughout the construction process, we faced dozens of decisions that ultimately affected the final index design and results. What follows are the rationales for some of our more complex index design decisions.

A more detailed explanation of scoring, weighting, indicator selection rationales, and data sources can be found in the appendices.

Defining Innovation

A 2009 study striving for a multi-disciplinary definition of innovation found roughly 60 definitions of "innovation" in academic literature.

Innovation, as a concept, evades any singular definition. Scholars and practitioners define innovation in myriad ways and its ubiquitous use in popular culture has led to confusion about what the term actually means. A 2009 study striving for a multi-disciplinary definition of innovation found roughly 60 definitions of "innovation" in academic literature.[39] A number of closely related, but distinct concepts such as invention and entrepreneurship further compound this confusion.[40]

To actually measure a concept like innovation, however, a very specific definition is necessary. While numerous definitions from academic literature would have sufficed for our purposes, we turned to the most widely accepted authority for empirical research of private sector innovation, the OECD's "Oslo Manual."[41] We adapted their definition of what constitutes an innovation for use in the education sector:

> *An* **innovation** *is the implementation of a new or significantly improved product, process, policy, organization type, organization model, or organization practice.*

This definition of innovation provides us with a clear understanding of what a new product, process, policy, organization type, organization model, or organization practice is, but not how it came to be. To do this, the "Oslo Manual" also defines *innovation activities*. Most of the markers of innovation at the macroeconomic level will fall under this definition:

> **Innovation activities** *are all scientific, technological, organisational, financial and commercial steps which actually, or are intended to, lead to the implementation of innovations. Some innovation activities are themselves innovative, others are not novel activities but are necessary for the implementation of innovations. Innovation activities also include R&D that is not directly related to the development of a specific innovation.*[42]

These terms and their definitions are fundamentally important for the US Education Innovation Index. We adopted these definitions at the outset of the construction process and used them regularly to determine what qualifies as an innovation and innovation activity, and to decide what should be measured and how.

The definitions that we adopted capture concepts like entrepreneurship and invention, which are distinct, but contributing factors to the broader concept of innovation.

The definitions that we adopted capture concepts like entrepreneurship and invention, which are distinct, but contributing factors to the broader concept of innovation. In other words, innovation *may* occur because an entrepreneur starts a new business or nonprofit or an inventor creates something new to the world, but neither of these is necessary for innovation. For instance, a teacher may implement a radically new process for discipline referrals or a district may launch a new school model. These scenarios require neither an entrepreneur nor an inventor as they're currently defined to produce an innovation.

Our definition does have limitations, however. First, there's an element of subjectivity in how one interprets terms like "new" and "significantly improved." Our threshold for whether an innovation is new is if it hasn't existed anywhere else before, or if it existed in another field and an organization in the education sector adopts it. Venture philanthropy, modeled after venture capital, is a prime example. Our threshold for "significantly improved" is whether an innovation is fundamentally different in some way from existing policies or practices, and has resulted or is likely to result in better outcomes for students.

Second, we stop short of distinguishing between different types of innovation such as disruptive, incremental, or imitative innovation in favor of a more general definition that encompasses them all. Introducing sub-categories or typologies of innovation would make for an overcomplicated index and reduce comprehensibility and utility. However, future research examining innovation types and their impact on education would be a significant contribution to the field.

Selecting Cities and Defining Boundaries

The USEII is a tool developed to measure city-level innovation in the education sector. Ideally we would include data that applies to a certain radius from a city's center to calculate the index scores. However, this kind of data collection is impossible since most available data sets are fixed to human-made boundaries based on ZIP codes, Census tracts, metropolitan statistical areas (MSAs), or school districts. City boundaries would be the natural choice, but they vary widely from being totally aligned to their education ecosystem (San Francisco) to encompassing the entire surrounding county including many suburban and rural communities (Indianapolis). Further, some cities contain one unified school district (San Francisco) or 10 distinct school districts (Kansas City). Because of these differences within our sample, we were presented with a measurement challenge that required us to define what we meant by "city-level."

The boundaries used in USEII data collection and analysis are those defined by the school district that encompasses the city's center. Our results include charter and private schools within that district's boundaries.

The boundaries of large urban school districts tend to include students who are most likely to live in concentrated poverty and receive a subpar education, and would therefore benefit from education innovation. Additionally, large urban district boundaries typically include city centers where companies and nonprofits operate as well as where families live. However, this choice of boundary does not come without tradeoffs. The index score for cities with many non-unified school districts, such as Kansas City, may not accurately reflect the city's entire education ecosystem. While imperfect, central urban district boundaries provide us with the best option to collect data for measuring city-level education innovation.

Indicator Selection and Design

The indicators we selected had to meet these criteria from the "Handbook on Constructing Composite Indicators."

1. **Accuracy.** Does it measure what it says it measures? Direct or proxy? Will it vary by exact indicator?
2. **Availability.** Does this data exist or not? Is it provided by a public source or a private organization?
3. **Accessibility.** Is the data pre-collected, aggregated, and/or normalized?
4. **Analytical Soundness.** Is the indicator supported by a review of research literature and strong theoretical basis as determined by experts?
5. **Comparability.** Is the indicator either accompanied by a clear standard (e.g. 100 is max score for proficiency), or is there sufficient comparable data to form a normal distribution?
6. **Timeliness.** Does the elapsed time since collection distort the data's accuracy?

The criteria above set a very high standard for which indicators can be included in the USEII. On more than one occasion, the application of these criteria resulted in the omission of an indicator that would be illuminating but lacked robust supporting data. See Appendix D, "Indicator Wish List," for examples.

Designing for Scale

While the prototype presented here only measures four cities, we designed the USEII with the ultimate goal of measuring 30 or more cities annually. Creating an index for which data on a large number of cities can be collected, organized, and analyzed meant that accessibility was paramount. In practice, we were capable of collecting a large amount of primary data for our limited set of target cities. However, this method would have been too onerous if applied to dozens of cities. For instance, identifying collaboration and coordination mechanisms beyond Gates district-charter compacts and Strive partnerships and also evaluating them for quality was possible under the scope of this project, but the amount of research necessary to meet our standard for rigor (multiple stakeholder interviews, document reviews, impact evaluations, etc.) is not realistic for 30 or more cities. As a result, we made decisions about data collection for these and other similar indicators with scale in mind, while also ensuring the data we did collect accurately captures each indicator. In such cases, we selected indicators that both satisfied the above criteria and could scale. Striking this balance between accuracy and scalability was particularly challenging with indicators in the Coordination and Collaboration Mechanisms, Innovation-Supporting Institutions, and Innovation-Friendly Policy pillars.

Measuring Quality

Many of the indicators in the USEII include a quality measure. The Quality of Charter School Law indicator, for example, relies on the expert judgment of a trusted organization—the National Association of Public Charter Schools—to evaluate the quality of what we want to measure. When such an evaluation framework existed, we adopted it. In cases where no such quality measure currently exists, we opted to use a binary measure of that indicator; either a condition or activity is present or it's not. On some measures, like the presence of a district leader focused on innovation, a binary measure is sufficient. The presence of that condition provides adequate evidence to satisfy the accuracy criterion above. For other indicators with binary scores, like whether a city has a teacher residency program, a question of quality remains. Does the residency produce better teachers than local universities? Does the residency produce a sufficient number of teachers for the city? Does the residency distribute teachers equitably throughout the city? To answer these questions responsibly, we'd have to perform a program evaluation for every teacher residency program in every city and develop a scoring system to compare residencies across the country—an onerous endeavor unlikely to change the final index score for cities significantly. A similar issue exists with the other 14 indicators with binary scoring. To navigate this issue, we decided to include binary measures without quality dimensions because they 1) satisfy our selection criteria, 2) provide important information about innovation in a city's education ecosystem that would be missed if omitted, and 3) provide a starting place for further investigation. If and when accurate quality measures of these indicators are developed, we will incorporate them into the data collection and scoring process for the USEII.

Need for Academic Improvement

The Need for Academic Improvement pillar has four indicators: 1) five-year student achievement trend, 2) past year achievement compared to state average, 3) five-year gap closing trend between students who are eligible for government-subsidized meals (a proxy for poverty) and those who aren't, and 4) past year achievement gap between the same groups. All of the indicators use state test scores to calculate results. Together they assess the progress cities are making toward educational equity. In early versions of the USEII we adopted an input-output structure where this pillar was the only output measure. Our initial reasoning was that innovation done well should result in increased student achievement. However, after conversations with innovation experts, we determined that student achievement—especially persistently low or declining student achievement—can embolden entrepreneurs and catalyze innovation. In cities where student achievement is perennially low, policymakers and education officials may also feel pressure to try new tactics or adopt new policies or methodologies in an effort to improve student outcomes, and thus embrace innovative ideas. Therefore, innovation, especially disruptive innovation, is more likely to happen in cities where student achievement is low.

Increasing student achievement and equity are paramount goals and no actions, innovation oriented or otherwise, should be taken that may sacrifice them.

This rationale altered our Student Achievement measure in three ways. First, we changed it from an output to a condition. This shift is important because, for the purpose of the USEII, it redefines student achievement from an end goal to a circumstance to which people respond. While not mutually exclusive, the latter is more important when measuring innovation. Secondly, we inverted our scoring so that cities with low student achievement score higher on this indicator. The technical fix was simple, but it presents a counterintuitive measure for those who are accustomed to seeing high scores represent improving student achievement. Lastly, we changed the name of the category to "Need for Academic Improvement," which suggests that a high score in this area signals a high need for improvement rather than high achievement levels. Importantly, under no circumstances should low student performance be interpreted as a positive scenario. Increasing student achievement and equity are paramount goals and no actions, innovation oriented or otherwise, should be taken that may sacrifice them. More research is necessary to understand the relationship between academic achievement and innovation, especially around how student achievement does or does not affect the motivation for people to innovate.

District Deviation

Because traditional school districts educate the majority of students in U.S. cities, we created an indicator to compare school districts and determine whether a given district is acting in an innovative fashion compared to other similar districts. But because innovation rhetoric is commonplace in district communications and we designed the USEII for scale (see above), we could not realistically evaluate every initiative of every district for innovativeness. Instead, we devised what we call District Deviation, an original indicator that allows us to use uniformly reported financial data to identify whether districts are operating in unorthodox ways.

Budget-based deviation is predicated on the idea that district budgets reflect the allocation of measurable and limited resources (financial, capital, people) according to the different choices and priorities of district leaders. In almost all cases, districts are limited in how they allocate their budget (e.g., a district cannot simply choose to allocate 100 percent of its budget toward computers at the expense of teachers, either due to formal regulatory requirements or due to the political approval inherently required in most annual budgeting cycles). However, districts have some flexibility in how they direct their general fund resources to align with their strategic priorities. Some districts may choose to prioritize small class sizes, increasing their allocation to teacher salary expenditure. Others may choose to prioritize technology, increasing their capital expenditure relative to other categories. Each of these strategic choices is often reflected in the financial makeup of a district, especially when these choices require tradeoffs between different types of resources—spending more on teacher salaries requires either an increase in revenues or a decrease in expenditure somewhere else.

This way of thinking lays the groundwork for the concept of budget-based deviation. If a district's strategic choices are reflected in its over- or under-allocation of resources in its budget, then the deviation of these allocations from peers should reflect the degree to which a district is breaking from the norm.

Underpinning the District Deviation measure is the calculated assumption that districts allocating their funds in unorthodox ways are trying new things, but this may not always be the case. For instance, a district that is grossly mismanaged may spend an inordinate amount of money supporting central office activities at the expense of classroom necessities. While more research is needed on deviation, the indicator provides education leaders with an important signal about critical district functions and may point to novel approaches to operating large urban districts.

The Future of US Education Innovation Index

Although significant time and energy have gone into the USEII, it was built to be a prototype. Ultimately, we strive to make the USEII the field's go-to source for city-based innovation knowledge. Our hope is to continue to refine the theoretical framework and apply it to 30-50 cities across the U.S. Measuring more cities will accomplish the dual goals of strengthening the index results and contributing a huge amount of knowledge to the field.

Increasing the number of cities will also allow users to make comparisons across cities. Such comparisons are the first step in the dissemination of lessons across the country.

In addition to a larger data set, we envision a much more sophisticated and dynamic index tool. An interactive online index would allow users to create custom visualizations, drill deep into specific pillars and indicators, compare cities across multiple dimensions, and export data for their own analysis.

To be maximally useful, the USEII would be updated annually in the late fall when new state data are typically released. Each updated index would be accompanied by a report on the state of education innovation. Results would be disseminated online via blog posts, a newsletter, and social media as well as offline at convenings such as SXSWedu, the ASU GSV Summit, and the NewSchools Venture Fund Summit.

After multiple years of results, trends will begin to emerge, making sound policy and practice recommendations possible. Such recommendations will be aimed at policymakers, funders, and system-level leaders who can encourage innovation activities in their cities and nationwide.

PART TWO

Results and Analysis

Putting the Index Prototype to the Test

To test the integrity of the framework, we chose to apply it to four cities: Indianapolis, Kansas City, New Orleans, and San Francisco.

These cities were chosen for their differing geographic location; population size; student enrollment; district, charter, and private school market share; perceived innovativeness; governance arrangements; and state policy environments. Our goal was to choose cities that we thought would have distinct profiles based on the nine pillars of innovation.

The purpose of presenting these results is threefold. First, these results test the conceptual and technical framework of the index. Does the index meet international standards for composite indicators? Do the scores accurately reflect what we're trying to measure? How can we improve the index to make it simpler, more statistically robust, and understandable?

Secondly, the index will allow us to get real results into the hands of funders, policymakers, city leaders, and educators to test its utility. How does the USEII fit into their arsenal of decision-making resources? For which types of decisions will they consult it? Does it contain the information they need in an accessible format? How much education around macroeconomic innovation and composite indicators is necessary to make the index useful and avoid misinterpretation? What is the level of appetite for further development?

Finally, the index can provide leaders in Indianapolis, Kansas City, New Orleans, and San Francisco with a new, empirical way to view innovation in their education sectors. Do the results match what's happening on the ground? What new information is the index providing? Which hypotheses does it confirm or disconfirm? What new questions does it provoke? Are strengths and weaknesses reflected in current strategic plans? What lessons do other cities provide?

We hope these results serve as a foundation for future conversations about innovation in the education sector based on rigorously analyzed data.

How to Interpret USEII Results

In the following sections are the results of the first analyses using the USEII framework. Since the USEII is a new tool to the education sector and readers may be unfamiliar with using an index in general, this section provides guidance for how to interpret the results. The USEII is a quantitative tool. Its framework includes nine pillars, 42 indicators, and hundreds of data points that produce scores at each level. Depending on their aims, readers can compare cities on their total scores for a high-level survey, a single pillar to examine a more specific area, or individual indicators for a close-up look at a specific data point.

To compare cities fully, one must go deeper than the overall score and, at very least, examine the pillar scores.

The USEII results are represented in radar charts, a graphical method of displaying multivariate data in the form of a two-dimensional chart of three or more quantitative variables represented on axes starting from the same point.[43] Radar charts are particularly well suited for displaying USEII results because it provides a profile of a city's education innovation ecosystem in conjunction with its overall score. These profiles show at a glance where a city scores well and where it has challenges across the nine pillars. They also help highlight differences among cities that may have similar scores on the USEII. As you will see, Indianapolis and New Orleans have overall scores that differ by just one point, but their profiles differ tremendously. To compare cities fully then, one must go deeper than the overall score and, at very least, examine the pillar scores.

Usually, a perfect score on all dimensions of a radar chart would result in a fully filled-in plot area. However, because a lower score on the Need for Academic Improvement is desirable, all dimensions scoring 100 points and the Need for Academic Improvement

indicator scoring zero would represent a perfect score on the USEII. Figure 5 provides an illustration of a fictional city that improves incrementally over a 15-year period until it reaches a perfect USEII score.

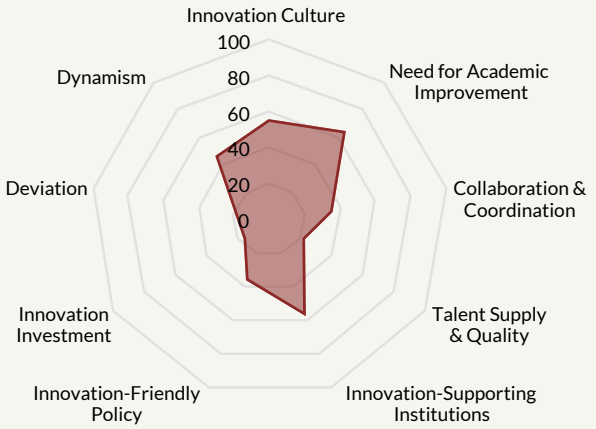
Although the USEII is a comprehensive composite indicator, no quantitative tool can fully describe a city's innovativeness. To provide readers with a more complete picture, each city's results are couched in a qualitative profile that includes an explanation of the city's score on the USEII indicators as well as descriptions of activities related to our definition of innovation that might not be fully captured in the city's numerical score.

Taken together, the index scores and city profiles provide the most robust analyses of city-level education innovation to date. Yet, as with any new measurement tool, the index results should be interpreted critically and in conjunction with alternative sources. Further, the limitations of composite indicators and methodological notes outlined in previous sections should be observed.

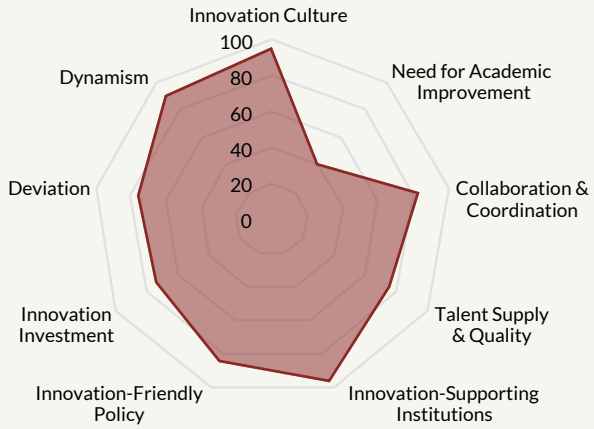
Figure 5

Illustrative Progression of a Fictional Education Ecosystem Steadily Improving its Innovation Activities

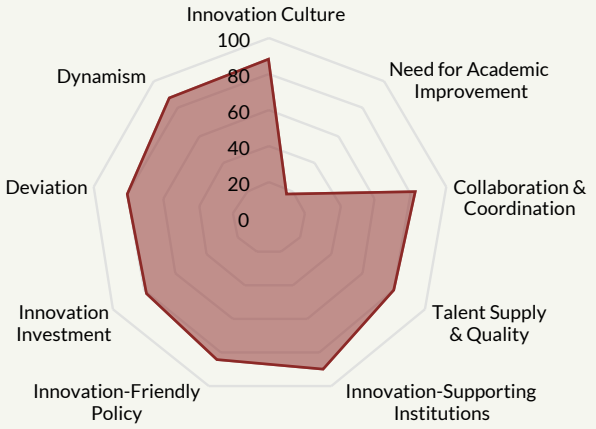
YEAR 1



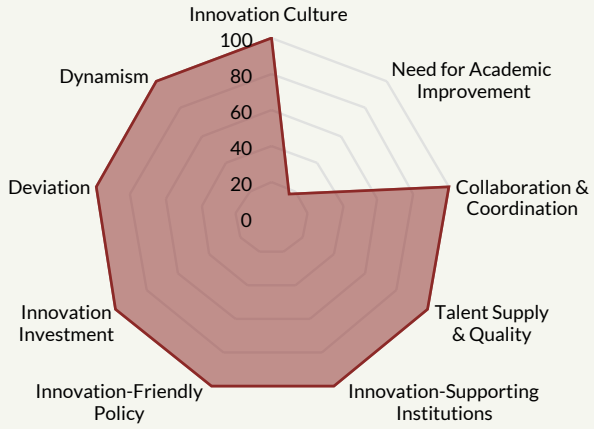
YEAR 5



YEAR 10



YEAR 15



Indianapolis: The Midwest Deviant

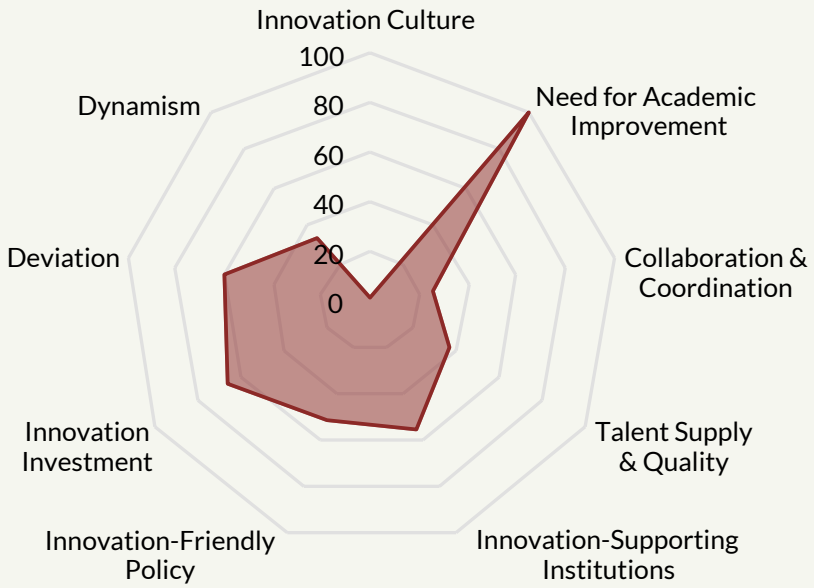
The relatively low cost of living coupled with access to investors and startup capital gives Indianapolis standout potential for innovation and entrepreneurialism. Kristian Anderson, founder of a local venture fund, explains, "Places where opportunity and access overlap are very difficult to find. It wasn't always this way, it won't always be this way, but I don't know of any other city in America where access and opportunity overlap as profoundly for startups as they do in Indy right now."[44]

With help from local nonprofit The Mind Trust, a forward-thinking district superintendent, and a supportive mayor, the creativity and entrepreneurialism emerging across the city have found their way into the education sector, which has earned Indianapolis a score of 51 on the USEII. A clear need for academic improvement coupled with an innovative district, friendly policy environment, and supporting institutions serve as a solid foundation for future investments. Efforts to create a robust innovation culture, increase talent pipelines, and replace failing schools with new ones would make Indianapolis the most well rounded city in our sample.

Figure 6 USEII Evaluation: Indianapolis

Total Score: 51

(Out of 100)



Sub-Index	Sub-Index Score	Pillar	Pillar Score
Innovation Conditions	29	Innovation Culture	2
		Need for Academic Improvement	100
		Collaboration & Coordination	25
		Talent Supply & Quality	37
		Innovation-Supporting Institutions	55
		Innovation-Friendly Policy	51
Innovation Activities	22	Innovation Investment	67
		Deviation	60
		Dynamism	34

Conditions

Innovation Culture

Indianapolis' vibrant private sector startup culture has helped bring thousands of entrepreneurs into the city. Events like The Innovation Showcase, where aspiring tech founders pitch their ideas to investors, happen regularly.[45] Local innovation think tank Centric hosts Day of Innovation, Indiana's only full-day innovation event.[46] Participants can partake in hands-on workshops, presentations, and networking. The culmination of the day is the Indiana Innovation Awards, which recognize innovative individuals and organizations.[47] The awards showcase innovators from across the state and from a variety of sectors. Past winners include large corporations, tech startups, school operators and leaders, and socially focused nonprofit organizations.[48]

Nearby universities play a critical role in supporting and expanding innovation in the city. Indiana University—Purdue University Indianapolis is home to the Lilly Family School of Philanthropy, a "hub" in the foundation world.[49] Butler University's Innovation Fund invests in ideas to enhance its offerings. And just an hour outside of Indianapolis is Indiana University (IU), home to the Innovate Indiana Fund, which helps companies originating from IU achieve commercial success.[50]

Unfortunately, this activity has yet to reach the education sector in particular. The city has just four percent of the for-profit education startup activity of New York City, which has the most in the country. Indianapolis lacks any discernible K-12 education innovation-specific summits or events,[51] as well as several of the collaboration and coordination mechanisms that the USEII measures like Gates district-charter compacts and Strive partnerships.

The city's coordinating intermediary, The Mind Trust, has played a critical role in catalyzing innovation in the education sector.

However, the city's coordinating intermediary, The Mind Trust, has played a critical role in catalyzing innovation in the education sector. Founded in 2006 by David Harris, former charter schools director under Mayor Bart Peterson, The Mind Trust is one of the nation's first coordinating intermediaries. The organization seeks to cultivate in Indianapolis a climate of talent and creativity focused on improving education.

The Mind Trust hosts education innovation events like the School Design Competition, which, in April 2016, brought together 12 teams "to identify truly break-the-mold school models."[52] The winner received $50,000 to support further development of their idea in order to submit it to The Mind Trust's Charter School Design Challenge, in which four winners can receive $250,000 to launch their school models.[53]

In addition, The Mind Trust has incubated 29 education-focused nonprofit organizations in its 10-year lifespan. The organization has also been instrumental in the current development of a common enrollment system for the city's schools. Once launched, this system will provide coordination across district and charter schools and increase the city's score.

Talent

The Mind Trust's work in cultivating talent pipelines for Indianapolis has been unmatched. In 2007 The Mind Trust recruited TNTP, which, through TNTP's Indianapolis Teaching Fellows Program, has trained 440 teachers and reached 56,000 students.[54] It brought Teach For America to the city in 2008, which has resulted in the influx of more than 438 teachers and 34 school leaders (through TFA's Indianapolis Principal Fellowship).[55]

The Mind Trust has also created its own talent pipelines. Through the Charter School Design Challenge noted above, The Mind Trust "seeks to create the next wave of charter schools by identifying the nation's most innovative social entrepreneurs and encouraging them to design transformational, new charter school models."[56] Four winners will receive $250,000 investments to help support the launch of their school models.

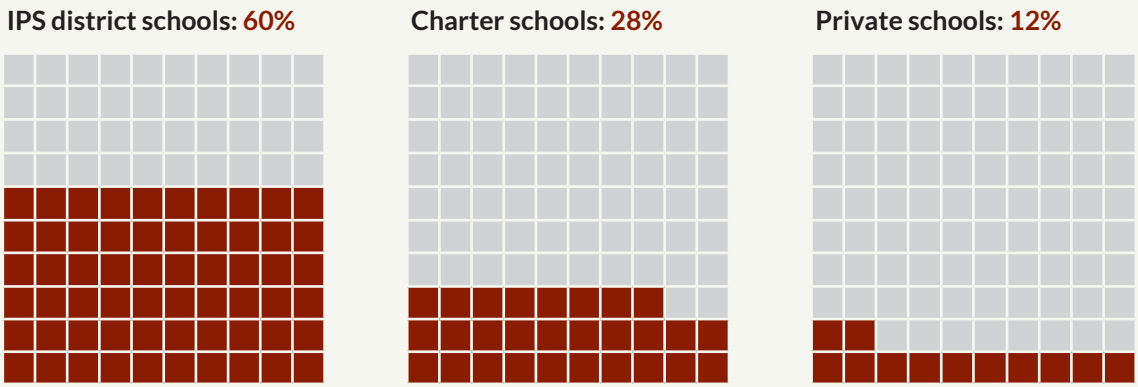
Similarly, The Mind Trust's Education Entrepreneur Fellowship provides top-notch leaders with two years' worth of salary, benefits, and development support as they launch new organizations to solve pressing education problems in Indianapolis and beyond.[57]

Thanks to these fellowship programs, Indianapolis is now home to a wide variety of new education-focused nonprofit organizations.[58]

Innovation in Public and Private School Choice

State and local policies in Indiana are particularly friendly to and supportive of education innovation. Unlike in most cities across the nation, Indianapolis' mayor has employed a hands-on approach to the growth and development of the charter sector. In 2001, then-Mayor Bart Peterson became the first mayor in the country to gain the authority to authorize charter schools. His charter schools office, now known as the Office of Education Innovation, developed high-quality authorizing processes and strong accountability for its schools. Its quality and inventiveness were recognized in 2006, when the mayor's charter schools office won Harvard University's Innovation in American Government award.[60]

Figure 7 Student Enrollment in Indianapolis by Sector, SY 2015–16[59]



Today, the mayor's office is the largest charter school authorizer in Indianapolis, authorizing nearly three-fourths of the city's charter schools.

Today, the mayor's office is the largest charter school authorizer in Indianapolis, authorizing nearly three-fourths of the city's charter schools. Local colleges and universities and a statewide, independent chartering board authorize the remaining charter schools. (Though local school districts have authorizing authority in Indiana, the Indianapolis Public Schools district does not currently authorize any charter schools.)

By and large, the work of Indiana's authorizers is strong. In 2015, the National Association of Charter School Authorizers (NACSA) ranked Indiana number one in its ranking of states based on their authorizing policies, with a perfect score of 33 out of 33 points.[61] The work of the state's authorizers is further buttressed by a strong state charter school law, which in 2015 was ranked first in the nation by the National Alliance for Public Charter Schools (NAPCS).[62] In 2016, NAPCS named Indiana the second-healthiest charter market in the nation.[63]

The Indianapolis Public Schools (IPS) district consistently ranks among the districts with the highest charter market shares in the nation. Thirty-one percent of the students living in IPS boundaries who attend a public school attend a charter school.[64] Even when students attending private schools are considered, the charter market share remains high, at 28 percent. Nearly 14,000 students were enrolled in charter schools during the 2015–16 school year.

What is perhaps most promising is that unlike many other cities, which rely on nationally recognized and proven charter school management organizations to operate high-quality schools, Indianapolis' charter sector is largely homegrown. Nine of the city's top-performing charter schools in 2014–15 were locally run. Local networks like Tindley Accelerated Schools or Christel House Academies run some of these schools, while others are unaffiliated neighborhood schools like the Paramount School of Excellence or Irvington Community School.[65]

Another local network, Goodwill Education Initiatives, was a 2015 recipient of an Indiana Innovation Award.[66] Its network of Excel Center schools, which focus on adult learners seeking to earn a high school diploma, has 11 campuses serving students across the state.[67]

At the district level, IPS is focusing significant time and money toward pursuing its Innovation Network Schools, which it developed in response to declining enrollment, a high number of low-performing schools, a surplus of school facilities, and competition from charters. State legislation passed in 2014 allows IPS greater flexibility to partner with outside organizations to overhaul poorly performing district schools.[68] These schools are granted greater flexibility and full operational autonomy over their budgets, staffing, and other key decisions. The first five Innovation Network Schools in IPS opened in fall 2015, and two additional Innovation Network Schools will open in fall 2016.

The Innovation Network Schools policy is an important step toward providing families with greater choices and schools with more flexibility to implement new and improved school and learning models; however, it makes for a complex policy environment with multiple governance models and convoluted accountability lines.

IPS has partnered with The Mind Trust to help develop and launch its Innovation Network Schools. The Mind Trust has developed two programs, the Innovation School Fellowship and the Educator Empowerment Grant, to help attract top talent, incubate new ideas, and support the conversion of existing district schools to Innovation Network Schools to allow for greater flexibility and innovation within schools.[69]

In addition to significant public school choice through the city's charter schools, Indiana is also home to two private school choice programs, the School Scholarship Tax Credit and the Choice Scholarship Program. Passed in 2009 and enacted in 2010, the state's tax credit program provides an average scholarship of $1,361 per child to eligible families to help them access private schools. During the 2014-15 school year, 9,127 tax credit scholarships were awarded statewide.[70]

The Indiana legislature passed the Choice Scholarship Program legislation in 2011[71] and amended it in 2013, making it the most expansive voucher law in the country. In 2015–16 the average voucher value was $4,520 for students in grades 1–8 and $5,496 for students in grades 9–12.[72] More than 3,400 students living within IPS boundaries used a voucher to attend a private school in the 2015–16 school year.[73]

Indiana is unique in the level of accountability it has in place for the private schools participating in the state's voucher program.

Indiana is unique in the level of accountability it has in place for the private schools participating in the state's voucher program. Participating schools must administer the state assessment, the ISTEP, to all students in the school, and report data to the state. The state annually ranks each participating private school and includes them in the state's annual school report card. If a participating private school earns a D or F for two or more consecutive years, it is not eligible to enroll additional voucher students until its scores improve.[74]

The diversity of options available to families in Indianapolis—many of which have been launched by local entrepreneurs—speaks clearly to the creativity, innovation, and talent in the city.

Need for Academic Improvement

Despite being the largest public school district in both the city of Indianapolis and in the state, Indianapolis Public Schools (IPS) has been struggling academically and financially for years. Its enrollment peaked at more than 100,000 students during the 1960s,[75] but today IPS educates fewer than 30,000.[76] The academic achievement of its primarily low-income and minority student population continues to lag the state average by significant margins.

In 2014–15, 66 percent of students statewide passed the English/language arts ISTEP assessment and 60 percent passed the math ISTEP assessment,[77] compared to just 43 and 38 percent of IPS students, respectively.[78] In 2015, nearly half (31 of 65) of the district schools receiving a score on the state report card earned a D or F.[79]

On the other hand, Indianapolis' charter school sector is one of the highest performing in the nation. The Center for Research on Education Outcomes (CREDO) at Stanford University found that overall, students attending Indianapolis' charter schools gained 48 more days of learning in math and 55 days of additional learning in reading compared to their peers attending traditional district schools.[80] Particular student subgroups also outperformed their peers in traditional district schools, including black students, students in poverty, English language learners, and special-education students.[81]

Activities

Innovation Investment

Indianapolis has significant investment in education innovation from all sectors—the local school district, the state, and philanthropists. Much venture capital is sowed into the private sector in Indianapolis. Between 2010 and 2015, the compound annual growth rate of venture capital funding in Indianapolis was 7.6 percent. In 2015, approximately $54.5 million in venture capital funding was invested in 13 Indianapolis companies—eight percent more funding than the previous year—ranking it 39th out of 135 cities nationwide for its level of venture funding.[82] Unfortunately, however, very little of this funding is reaching the education sector.

However, the Innovation Network Schools initiative has helped to attract some national venture funding to the city. In 2015, one Innovation Network School, PLA@103, won a $200,000 launch investment through the New Schools Venture Fund's Catapult: Launch competition.[83]

At a state level, while a broad pool of funds dedicated to innovation does not exist, the state does have Innovation Planning Grants available to districts interested in integrating technology into their classrooms.[84] At a city level, the mayor's office has an entire department dedicated to education innovation, called the Office of Education Innovation.[85]

[Please observe Author's Note on page 20.]

Deviation

District deviation is a measure of how IPS budgets its money across eight categories compared to other similar school districts in the state. Districts whose spending policies differ significantly from the norm are considered innovative districts, as their differential spending is an indication that they are taking a new or different approach to funding allocation and ultimately, to educating students.

IPS scores the highest by far of the four districts in our sample on the district deviation measure. It differs from peer-group districts in the state by 60 percent of a standard deviation. The way IPS budgets its funds differs by a full standard deviation or more from the norm in six of the eight categories we measured: Instruction; Support Services—Pupils; Support Services—Instructional Staff; Support Services—General Administration; Support Services—Operation and Maintenance of Plant; and Support Services—Student Transportation. The district's budgeting may reflect its response to a growing and competitive charter market and willingness to pursue Innovation Network Schools, but more research would be necessary to confirm this hypothesis.

Dynamism

Compared to many cities where the education system is static from year to year, Indianapolis' system of schools exhibits healthy dynamism. Though the city experienced a turnover in education-focused nonprofits that was lower than five percent (the minimum threshold for turnover in a healthy economy), between 2014 and 2015 the number of new education-focused nonprofits entering the marketplace did outpace the number that closed.

At the start of the 2015-16 school year, families had more than a dozen new schools to which they could send their children.

Like many cities, Indianapolis struggles to consistently close its low-performing schools. Just one of the 14 IPS district schools receiving an F on the state's grading scale was closed at the end of the 2014–15 school year—it was reopened in fall 2015 as an Innovation Network School—and just one of the five F–rated charter schools was closed. (Three additional D–rated charter schools also closed at the end of the 2014–15 school year.) No private schools closed in Indianapolis at the end of the 2014–15 school year.

On the other hand, the market for new schools in Indianapolis is thriving. At the start of the 2015–16 school year, families had more than a dozen new schools to which they could send their children: Nine new charter schools opened, five Innovation Network Schools opened (of which one was a new-start, one was a restart, and three were charter-to-Innovation school conversions), and five new private schools or programs opened across the city.

New Orleans: Education's Grand Experiment

If there are any silver linings for the devastation of Hurricane Katrina, one is that the boldness and creativity of those who were part of its rebuilding created a haven for entrepreneurs. A 2013 article in The Atlantic termed the city's generation of entrepreneurs as the "boomerang generation … a group of proud, young- to middle-aged reformers who came back to New Orleans in the wake of Katrina to find the city flattened. The city didn't have the jobs they wanted. So they built their own."[86]

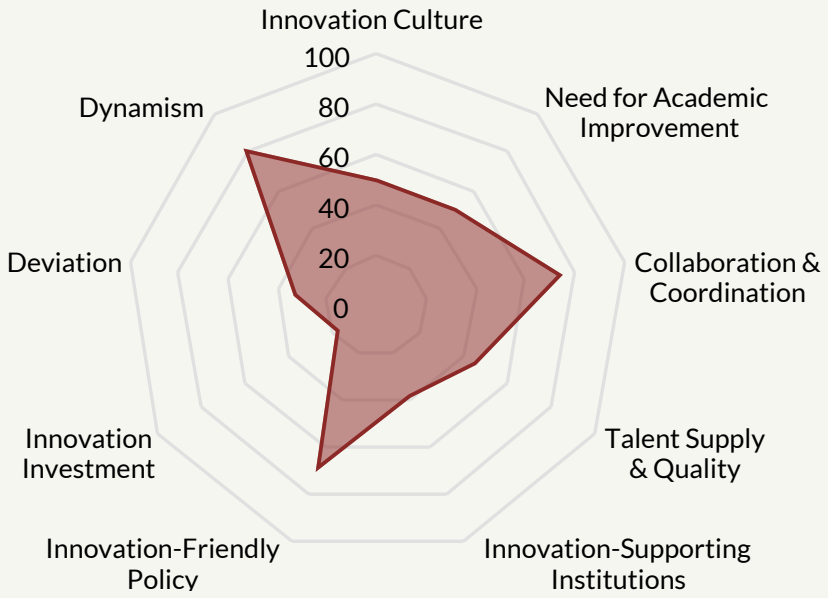
Overall, New Orleans earned a score of 52 on the Education Innovation Index. Most noteworthy are the strong collaboration and coordination mechanisms in place, the city- and state-wide policies that support innovation, and a healthy dynamism in its system of schools. On the other hand, the city's investment in innovation and its ecosystem of innovation-supporting institutions are lacking compared to other cities with significant levels of innovation in education.

The transfer of Recovery School District schools to the Orleans Parish School Board (OPSB) will have many ramifications, not least of which will be the impact on the innovativeness of New Orleans' unique education ecosystem.

Figure 8 USEII Evaluation: New Orleans

Total Score: 52

(Out of 100)



Sub-Index	Sub-Index Score	Pillar	Pillar Score
Innovation Conditions	31	Innovation Culture	51
		Need for Academic Improvement	50
		Collaboration & Coordination	75
		Talent Supply & Quality	45
		Innovation-Supporting Institutions	38
		Innovation-Friendly Policy	68
Innovation Activities	21	Innovation Investment	18
		Deviation	32
		Dynamism	81

Conditions

Innovation Culture

The culture of innovation in New Orleans has been influenced in large part by the influx of entrepreneurs in the last decade. In the three-year period from 2007 to 2009, 450 out of every 100,000 adults started a business in New Orleans, well above the national average of 320 and more than double the number of six years prior.[87] By the three-year period from 2011 to 2013, the entrepreneurship rate had grown to 471 startups per 100,000 adults—64 percent higher than the national average and 40 percent higher than other fast-growing Southern metro areas.[88] All of this activity is what led Inc. magazine in 2011 to name New Orleans the "Coolest Startup City in America."[89] That same year, Forbes magazine named the city the nation's "Biggest Brain Magnet."[90]

Nonprofit organizations like Idea Village, founded in 2000, have thrived in this environment. In 2006, Idea Village launched IDEAcorps to help businesses rebuild after Katrina. The program brings teams of students from top MBA programs from across the country to New Orleans and partners them with local entrepreneurs and small business owners. IDEAcorps has evolved into a four-day competition held during the annual New Orleans Entrepreneur Week (NOEW). Teams of MBA students from schools like University of California, Berkeley, University of Chicago Booth School of Business, Cornell University, and Stanford University are paired with local companies for a week of brainstorming, planning, and reinvention. The teams present plans for their respective companies to a panel of judges, which includes executives from TPG Capital, Goldman Sachs, McKinsey, and Tulane University.[91]

First held in 2010, NOEW is an annual, weeklong event for entrepreneurs offering events like IDEApitch, where local companies seeking venture capital pitch their idea to potential investors, host speakers, provide hands-on training workshops, and create networking opportunities. In 2016 NOEW hosted more than 2,000 attendees from 32 states.[92]

Since 2014, New Orleans has also hosted the Mini Maker Faire, which showcases local "invention, creativity, and resourcefulness. … Makers range from tech enthusiasts to crafters to homesteaders to scientists to garage tinkerers."[93] This year's Mini Maker Faire was hosted by one of the city's top-performing charter schools, Bricolage Academy.

However, there are relatively few education-focused for-profit startups in the city. The city has just two percent of the for-profit education startup activity of New York City, which has the most in the country.

Even so, local universities and nonprofit organizations have been major catalysts for driving innovation in the education sector in New Orleans.

New Schools for New Orleans' funding and support has helped to launch 31 new schools that currently serve more than 12,000 students.

Launched in 2007 in the aftermath of Katrina, the city's coordinating intermediary, New Schools for New Orleans (NSNO), has been at the forefront of the rebuilding efforts over the last decade. NSNO works to invest in public schools, help schools become more effective, and coordinate solutions to citywide challenges. The organization has invested in the launch or expansion of high-performing public schools. Their funding and support has helped to launch 31 new schools that currently serve more than 12,000 students.[94]

NSNO has also partnered with the Relay Graduate School of Education's National Principals Academy to provide fellowships to 48 New Orleans school leaders; has supported the pilot of a personalized learning program at 17 schools; has provided technical assistance to 61 schools as they transition to the Common Core Standards; and has provided training and coaching to 358 teachers. NSNO has also worked at the city level to advocate for schools to receive resources to meet the needs of students with disabilities.[95]

In 2010, former leader of NSNO Matt Candler launched 4.0 Schools, a nonprofit organization focused specifically on incubating innovative ideas and talent for the education sector. The work of 4.0 Schools has been vital to fostering the entrepreneurial spirit in New Orleans. The organization hosts Startup Weekend Education (SWEDU), which brings together entrepreneurs with ideas to form teams, build a prototype, and pitch their idea to a panel of judges. It provides workshops to support entrepreneurs as they pilot their ideas and innovations, and is home to both the Tiny Fellowship, which provides fellows with coaching, community, and equity-free capital to take entrepreneurs from piloting to securing paying customers, and the Community Catalyst Program, a year-long program that supports local leaders as they build and sustain education entrepreneurship communities in their hometowns.[96]

Since 2010, more than 55 teams have launched tools, services, and schools to benefit the education sector in New Orleans and beyond.[97] 4.0 Schools has also opened branches in cities across the nation, demonstrating the need for organizations focused solely on education innovation. 4.0 Schools illustrates how an organization dedicated to education innovation can retool thinking and redeploy resources to encourage radically different approaches to addressing education inequity.

In addition to NSNO and 4.0 Schools, the work of the Cowen Institute at Tulane University has been instrumental in research and data collection on New Orleans' schooling experiment. The institute publishes the annual State of Public Education in New Orleans (SPENO) report, which updates the community and the nation on all aspects of the city's system of schools—from school operators, to the student population, to academic achievement, to future areas of growth. This work has been a critical source of data and information for policymakers and education advocates as they traverse uncharted territory. The Cowen Institute's close relationship to the schools in its backyard shows how hugely beneficial a well-resourced and directed research institute can be to a city's schools.

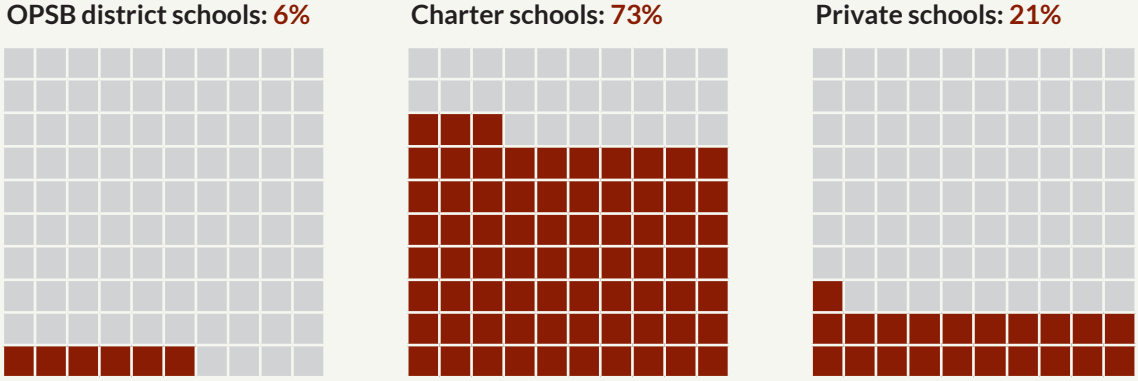
Camelback Ventures is another product of New Orleans' entrepreneurial culture. It supports local entrepreneurs who are investing in their community with access to social, financial, and intellectual capital. Its focus is mainly on underrepresented entrepreneurs. In the first two cohorts Camelback Ventures has supported 14 local social entrepreneurs, many of whom are first-generation college graduates, immigrants, and entrepreneurs.[98]

New Orleans has also launched important collaboration mechanisms to help families navigate the decentralized education system. In particular, the city's common enrollment system, EnrollNOLA, was created in response to challenges faced by students and families. Initially, individual charter schools established their own application processes and timelines, making school enrollment a time-consuming, confusing, and burdensome task for families. EnrollNOLA, originally called OneApp, was launched in 2012 to streamline the application process for charter schools.[99] Today, students and families can use EnrollNOLA to rank their top school choices among the vast majority of charter schools, OPSB-operated district schools, and private schools participating in the state's voucher program. EnrollNOLA's inclusion of participating private schools is a feature unique to New Orleans' common enrollment system.

Innovation-Friendly Policy

The city of New Orleans continues to build its reputation for embracing a bold approach to re-creating its education system. In the wake of Hurricane Katrina, the city has all but eliminated the traditional school district. It has more fully reimagined public education provision than any other city in the nation.

Figure 9 Student Enrollment in New Orleans by Sector, SY 2015–16[100]



Prior to Hurricane Katrina, New Orleans was considered one of the worst school districts in the country.[101] Only two out of ten New Orleans public school graduates enrolled in college.[102] Suspicious activity at district headquarters led the FBI to open an investigation and establish a physical office within the campus of the Orleans Parish School Board (OPSB).[103]

In 2003, the Louisiana legislature passed a law giving the Louisiana Board of Elementary and Secondary Education (BESE) the power to take over persistently failing schools. BESE created a statewide district, the Recovery School District (RSD), to take over these schools and manage their turnaround or conversion to charters.[104]

Following Hurricane Katrina and the destruction of the majority of the city's schools, in August 2005 the Louisiana legislature passed emergency legislation that allowed BESE to take over more than 100 public schools in New Orleans. These schools were transferred to the RSD, while the OPSB retained control of just 17 schools.[105]

The RSD is a policy innovation that, due in large part to the exceptional circumstances in the aftermath of Katrina, was implemented swiftly and with fidelity. At the end of the 2013–14 school year, the RSD closed its remaining direct-run schools, making it the nation's first all-charter district.[106] Currently, more than 90 percent of public school students living in New Orleans attend a charter school.[107]

The RSD is a policy innovation that, due in large part to the exceptional circumstances in the aftermath of Katrina, was implemented swiftly and with fidelity.

Though a top-down policy, the RSD—and the widespread choice it created—paved the way for a host of new innovations, organizations, and processes to spring up across the city.

Today, New Orleans' charter schools operate in an exceptionally charter-friendly policy environment. Louisiana's charter school law is one of the strongest in the nation, ranked fourth by the National Alliance of Public Charter Schools (NAPCS).[108]

The state's authorizing laws and policies are also well regarded by the National Association of Charter School Authorizers (NACSA). Both local school districts and the Board of Elementary and Secondary Education (BESE) have authorizing authority in Louisiana. BESE currently authorizes all of the RSD's charter schools, and thus the vast majority of charter schools in New Orleans. In 2015, Louisiana earned 24 out of 33 possible points on NACSA's state policy score, ranking tenth out of 44 states.[109]

Louisiana's school funding policies have also shifted dramatically to accommodate the new system of education. In 2015 the Louisiana legislature passed Act 467, which requires that charter schools receive the same per-pupil funding amount that would have been allocated to the school district in which that child resides.[110] The per-pupil funding amount will be weighted based on student need (special-education status, for example) and will follow the child to the charter or district school of his choice.

More significant changes are ahead for the school system in New Orleans, however. In May 2016, the Louisiana legislature decided that by 2019 at the latest, all of the RSD's charter schools will return to OPSB oversight, effectively dismantling the RSD and re-unifying the Orleans school district.[111] The effect that this shift will have on the city's system of schools and the degree of innovation and entrepreneurialism has yet to be seen.

In addition to widespread public school choice, families in New Orleans may also choose to send their children to private schools through the state's voucher program, the Louisiana Scholarship Program (LSP). To be eligible for a scholarship through the LSP, families must earn no more than 250 percent of the Federal Poverty Guidelines. In addition, students must have previously attended a public school receiving a letter grade of C, D, or F on the state's accountability ranking or be entering kindergarten for the first time. Approximately 2,700 students are enrolled in 30 New Orleans private schools participating in the Louisiana Scholarship Program.[112]

Unlike most voucher programs, the state of Louisiana has instituted accountability for participating private schools. Schools must administer the state assessment to students enrolled in the voucher program and report these scores to the state. Schools with 50 or more voucher students are given a score, known as a Scholarship Cohort Index (SCI). Schools with an SCI of 50 or below are prohibited from accepting additional voucher students until their scores improve.

Need for Academic Improvement

Over the last decade, New Orleans' schools have improved dramatically. On the 10-year anniversary of Hurricane Katrina, Douglas Harris, economics professor at Tulane University and founder and director of the Education Research Alliance for New Orleans, wrote that he is "not aware of any other districts that have made such large improvements in such a short time."[113]

Over the past five years, student achievement has improved more quickly in New Orleans compared to the statewide average, and the gap between students eligible for free and reduced-price lunch and those who are ineligible has been narrowing.

In 2003–04, the year before Hurricane Katrina, two-thirds of students in New Orleans attended a school performing in the bottom quintile statewide. By 2014–15, the number of students attending a school in the bottom quintile had dropped to 28 percent. Over that same time period the proficiency gap between schools in New Orleans and the rest of the state also decreased, from 25 percentage points in 2004 to six percentage points in 2015.[114]

Over the past five years, student achievement has improved more quickly in New Orleans compared to the statewide average, and the gap between students eligible for free and reduced-price lunch and those who are ineligible has been narrowing.

A 2013 report by the Center for Research on Education Outcomes (CREDO) at Stanford University found that students attending charter schools in New Orleans outperformed their peers attending traditional public schools. In particular, black students in poverty

show significantly better performance in both reading and math than their peers in traditional public schools, an advantage equal to approximately 72 more days of learning in reading and 94 more days of learning in math.[115]

Further, the CREDO report found that fully half of the city's charter schools were performing significantly better than traditional public schools; just six percent of charter schools fared worse than local traditional public schools in reading, and four percent in math.[116]

Despite these gains, there is still a ways to go. Moving the district from an "F" to a "C" hasn't been easy, and moving it from a "C" to an "A" will likely prove even more challenging.

Talent

Talent has been a perennial challenge for New Orleans. Thousands of the city's educators were scattered across the country in the wake of Hurricane Katrina, and the OPSB ultimately laid off its entire staff—more than 7,000 individuals.[117]

As student enrollment began to rebound—in some cases faster than expected—the city faced a shortage of teachers. The RSD, OPSB, and nonprofits like New Leaders for New Schools advertised in cities across the country to encourage veteran educators to return to New Orleans classrooms, and for educators nationwide to consider moving to New Orleans to teach. Federal funds supported a media campaign to attract more teachers to the city and offer relocation incentives and housing subsidies to educators.[118] Alternative teacher pipelines including Teach For America and TNTP's teachNOLA fellowship scaled quickly to fill the need.

The numbers of educators from alternative pipelines that were pumped into New Orleans are massive: TFA corps members and alumni compose 20 percent of the New Orleans teaching force.[119] Since launching in 2007, TNTP's teachNOLA fellowship has trained 760 fellows reaching 91,500 students.[120] New Leaders has trained more than 30 school leaders through its Aspiring Principals Program, impacting more than 10,000 students.[121] Since 2008, 74 schools across Greater New Orleans have partnered with Leading Educators to train teachers and school leaders. Ninety-seven teacher leaders have graduated from the Leading Educators Fellowship and lead approximately 1,376 teachers and impact nearly 40,000 students.[122] Since 2012, Education Pioneers has been working in New Orleans. It has partnered with 14 organizations, from charter management organizations to local nonprofits, to provide a critical influx of talent.[123]

One unintended consequence of the city's aggressive talent policies has been growing tension resulting from a much whiter and younger teaching force replacing the largely black and veteran teaching force fired by the OPSB. Despite there being nearly 2,000 fewer teachers system-wide between 2004 and 2014, today's teaching force is significantly whiter, less experienced, and more likely to be educated outside of Louisiana than in 2004.[124]

Activities

Innovation Investment

Of all the pillars in the USEII, New Orleans' lowest score—by far—is in the area of innovation investment. The city lacks any significant district, state, or venture capital funding focused specifically on education innovation. In 2015, the New Orleans metro area logged just a single venture capital investment worth $100,000, tying the city for last place among 135 cities nationwide. New Orleans' compound annual growth rate of venture funding between 2010 and 2015 was 0 percent.[125] On a per capita basis, venture capital funding doubled, from $16 per capita in 2010 to $32 per capita in 2014, though this remains significantly behind other competitive metro areas. Venture capital funding in Austin, for example, has consistently been over $100 per capita since 2006.[126]

[Please observe Author's Note on page 20.]

Deviation

District deviation is a measure of how the OPSB budgets its money across eight categories compared to other similar school districts in the state. Districts whose spending policies differ significantly from the norm are considered innovative districts, as their differential spending is an indication that they are taking a new or different approach to funding allocation and ultimately, to educating students.

OPSB differs from peer group districts in Louisiana by approximately one-third of a standard deviation. Compared to the other three districts in our sample, the OPSB's score is approximately half of the score of Indianapolis Public Schools, double the score of Kansas City Public Schools, and approximately the same as the San Francisco Unified School District. The way the OPSB budgets its funds differs by a full standard deviation or more from the norm in two of the eight categories we measured: Support Services—General Administration and Support Services—Business/Central/Other. Increased allocation to these areas may reflect OPSB's oversight of 18 charter schools, but more research would be necessary to confirm this.

Dynamism

The school system in New Orleans is nothing if not dynamic. Low-performing schools are routinely closed and new schools open on an annual basis.

The school system in New Orleans is nothing if not dynamic. Low-performing schools are routinely closed and new schools open on an annual basis. The vast majority of this turnover happens in the charter sector. At the end of the 2014–15 school year, three of the city's six F–rated charter schools were closed; four new charter schools opened at the beginning of the 2015–16 school year.[127] The set of traditional district schools, run by the OPSB, has remained steadily high performing. None of the OPSB's direct-run schools earned an F on the state report card, and subsequently, none was closed. Further, just a single private school in New Orleans closed at the end of the 2014–15 school year; no new private schools opened in the city at the beginning of the 2015–16 school year.

San Francisco: A Traditional District in an Innovation Hot Spot

It's difficult to find a list of most innovative regions without the San Francisco Bay Area occupying a top spot. As Richard Florida recently wrote in The Atlantic's City Lab, "Today, the region accounts for roughly 40 percent of all venture capital investment in high-tech startups in the U.S., and more than a quarter of it around the world."[128] In recent decades, the geographic locus of innovation has begun to shift from the suburbs of Silicon Valley in the '70s, '80s, and '90s to the urban districts of San Francisco.[129] As a result, the City by the Bay is blossoming with entrepreneurial energy.

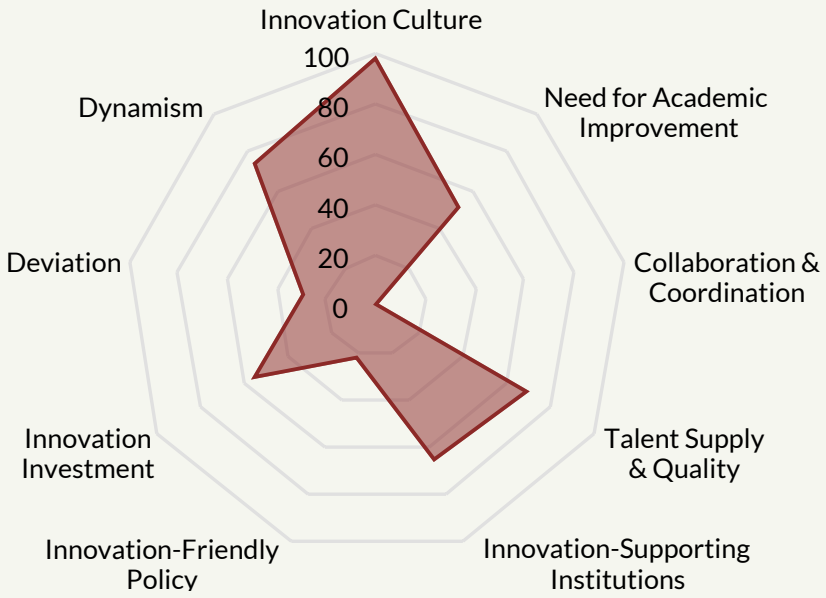
This energy, coupled with an endless talent supply and constant stream of new education companies and nonprofits, earned San Francisco a score of 54 on the USEII. San Francisco Unified School District (SFUSD), which enrolls 67 percent of the city's students, plays an outsized and central role in its education ecosystem. SFUSD has launched many innovation efforts to close its notable achievement gap. Even so, much of the innovation activity in the city happens around the district instead of within it. The district maintains a very conventional structure and a nearly unchanging stock of schools compared with peer districts pursuing portfolio models and collaborating with growing charter sectors.

Much of the innovation activity in San Francisco happens around the district instead of within it.

Figure 10 USEII Evaluation: San Francisco

Total Score: 54

(Out of 100)



Sub-Index	Sub-Index Score	Pillar	Pillar Score
Innovation Conditions	29	Innovation Culture	100
		Need for Academic Improvement	50
		Collaboration & Coordination	0
		Talent Supply & Quality	69
		Innovation-Supporting Institutions	65
		Innovation-Friendly Policy	21
Innovation Activities	25	Innovation Investment	55
		Deviation	29
		Dynamism	75

Conditions

Innovation Culture

San Francisco is recognized worldwide as a hub of innovation, particularly in the tech industry. The Kauffman Foundation ranks it sixth on the Index of Startup Activity and fourth on its Main Street Entrepreneurship Index, with more than 1,100 established small businesses per 100,000 residents.[130] PricewaterhouseCoopers' 2014 ranking of the world's 30 top global cities puts San Francisco in fifth place, behind London, New York, Singapore, and Toronto.[131] The San Francisco region ranks third overall in the number of patents secured between 2000 and 2013, with a total of more than 70,000.[132] AngelList, a platform that helps connect founders with investors, features nearly 13,000 San Francisco startups.[133] And at more than 18 percent, the Bay Area also leads the nation in the share of employment in innovation sectors.[134]

It's no wonder that a culture of innovation has infiltrated San Francisco's companies. A 2012 report by the Bay Area Council Economic Institute and Booz & Company found that San Francisco-area companies are almost twice as likely as those in metro areas to be "Need Seekers," meaning that they "tend to concentrate on gathering the deepest insights possible into both the articulated and unarticulated needs and desires of their customers."[135]

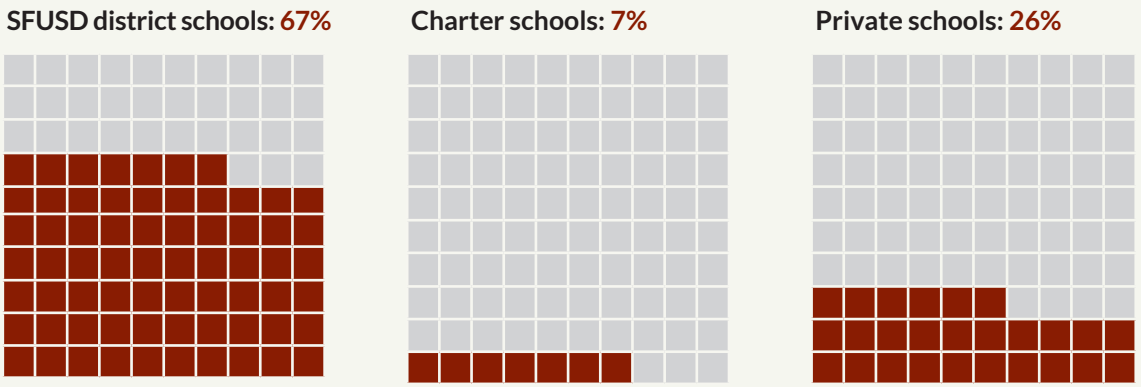
The city also boasts a huge scientific community focused on research and development, with five national laboratories in the region: Lawrence Livermore, Lawrence Berkeley, Sandia, NASA Ames, and the Stanford Linear Accelerator Center. The region is also home to five leading research universities: UC Berkeley, UC San Francisco, UC Davis, UC Santa Cruz, and Stanford. Private-sector research facilities, including Apple, Google, HP, IBM, Intel, and Lockheed Martin, also call the Bay Area home. Apple alone owns or leases more than eight million square feet of space in San Francisco and the surrounding area.[136]

The culture of innovation in the nonprofit and private sectors has found its way into San Francisco's government offices, as well. In particular, the Mayor's Office of Civic Innovation works with mayoral leadership, city departments, and city residents with these goals: "lower costs, increase revenue, save lives, or improve lives."[137]

This office also hosts the San Francisco Entrepreneurship in Residence program, a 16-week collaboration that brings together the private sector and city departments to "explore innovative solutions to civic challenges that can lower costs, increase revenue, and enhance productivity."[138]

The city has done things like partner with Waze to minimize congestion and maximize reliability for drivers and transit riders.[139] It has also created Living Innovation Zones, which seek to bring together the community and government to solve problems.[140]

Figure 11 Student Enrollment in San Francisco by Sector, SY 2015–16[141]



A District Looking to Innovate

Amid the buzz of innovation in the city, San Francisco's school system maintains a very traditional structure. The San Francisco Unified School District (SFUSD) dominates the city's K–12 education system, which in 2015–16 operated 104 schools serving approximately 53,000 students—67 percent of the school-aged children living in San Francisco.[142]

SFUSD boasts about being the highest-performing urban school district in California,[143] while acknowledging that it also has pernicious racial achievement gaps. Across the district, 52 percent of students met or exceeded the standard in English/language on the 2015 California Assessment of Academic Performance and Progress (CAAPP), and 48 percent did so in math.[144] In 2013–14, nearly 84 percent of entering freshmen graduated.[145] However, while 92 and 87 percent of Asian and white students graduated in four years, respectively, just 69 and 64 percent of Hispanic/Latino and black students graduated in four years, demonstrating a significant gap along racial and ethnic lines.[146]

Under the leadership of Superintendent Richard Carranza, SFUSD has embarked on many innovative initiatives. SFUSD is a member of the League of Innovative Schools, a national network of forward-thinking education leaders.[147] As part of this network, SFUSD has opened a new middle school complete with a "maker space" where students can develop and design prototypes;[148] has competency- or mastery-based progression in some of its schools; uses data to drive tech purchasing decisions; and is developing a preK–12 computer science curriculum.[149]

The district has also collaborated with both government and private companies to enhance the educational opportunities and experiences for its students. In partnership with the mayor's office and Salesforce.org, SFUSD launched the Mayor's Middle Grades Leadership Initiative in 2013.[150] This program provides middle school students with increased technology resources and STEM opportunities. Over the last three years, grants from the Salesforce.com Foundation, totaling nearly $14 million, have provided middle school students in the district with Wi-Fi-enabled classrooms, access to thousands of iPads, thousands of volunteer hours from Salesforce.com employees, and a full-time technology instructor to assist with implementation.[151]

In 2015–16, Salesforce.com adopted 30 SFUSD schools through the San Francisco Education Fund's Circle the Schools initiative. This initiative connects SFUSD schools with community and corporate volunteers for long-term partnerships. The corporations provide the school with additional resources and people power.[152]

SFUSD Vision 2025 Big Shift #9: SFUSD will be a center of innovation and a leader in creating an engaging new learning ecosystem in the Bay Area and beyond.

SFUSD's focus on creating a more innovative district was solidified in its Vision 2025, adopted in 2014. Included in this vision are ten "Big Shifts" the district wants to see over the next ten years. Number nine is an Innovative System: "SFUSD will be a center of innovation and a leader in creating an engaging new learning ecosystem in the Bay Area and beyond."[153]

In response to this goal, SFUSD created the iLab, which "is a space, a process, and a resource that promotes innovation across our organization."[154] iLab will work to bring to life new ideas, establish system-wide resources, empower employees to transform their environments, and enable educators to have a positive impact on their students.[155] The iLab sponsors "cross functional team design challenges" to bring together stakeholders to solve common problems. The budget for the iLab was just over $916,000 in 2014–15.[156]

Aside from SFUSD's intra-district choice process, families in San Francisco have relatively little school choice. Fewer than 6,000 kids attend charter schools—approximately nine percent of the city's public school enrollment and seven percent of the city's total K–12 enrollment—and California doesn't have any private school choice programs such as publicly funded vouchers or tax credit scholarships.

The charter schools that exist must strive to succeed in a mediocre policy environment. The National Alliance for Public Charter Schools (NAPCS) ranked California's charter school law 15th out of 43 nationwide.[157] The state's authorizing structure, which relies primarily on local school districts, fares even worse.[158] The National Association of Charter School Authorizers ranked California 31st in the nation for its authorizing practices.[159] The state lacks some important features of high-quality authorizing practices, including requiring regular and consistent reporting and data collection on authorizing activity; mechanisms for oversight of authorizers; a default non-renewal or closure for persistently failing schools; charter contracts and performance frameworks for schools; and alternative authorizers.

Despite this, two voluntary statewide initiatives have been launched to improve the quality of authorizing practices. The first is the California Authorizers Regional Support Network (CARSNet), which is a federally funded training and development network for small authorizers. The second is the California Charter Authorizing Professionals (CCAP), which is a network of support and resources for authorizing professionals.[160]

The quality of San Francisco's charter schools is unclear, as no rigorous analyses of its charter schools have been undertaken. However, data from the California Charter Schools Association suggests that San Francisco's charter schools score on par with SFUSD's traditional district schools. In 2012-13 the average Academic Performance Index (API) score in San Francisco's charter elementary schools was slightly higher than the average across SFUSD's elementary schools (820 vs. 818, respectively). At both the middle and high school level, charter schools' average API scores were slightly lower than SFUSD's (778 vs. 842 at the middle school level, and 658 vs. 668 at the high school level).[161]

Talent

Notoriously underfunded schools (and relatively low teacher salaries) coupled with competition from private sector companies and nonprofits makes recruiting and retaining teachers in SFUSD a uniquely challenging problem.

Though San Francisco is a magnet for top talent, recruiting this talent into the schools is no easy feat. Notoriously underfunded schools (and relatively low teacher salaries) coupled with competition from private sector companies and nonprofits makes recruiting and retaining teachers in SFUSD a uniquely challenging problem. The lack of affordable housing in the city is particularly problematic. According to a recent San Francisco Chronicle article, "To afford a one-bedroom unit in the city at the median monthly rate of $3,500, the average teacher would have to spend 64 percent of his or her salary on housing—by far the highest proportion of any large school district in California."[162]

What's worse, California is experiencing precipitous declines in teacher preparation enrollments and completions. According to a 2015 report from Bellwether Education Partners, "In the 2013–14 school year, the California Commission on Teacher Credentialing issued new credentials to some 14,810 teachers, a one-third decrease from the number issued five years earlier—and significantly fewer than the 21,000-some teachers the state's schools need."[163]

To help ensure a steady influx of top-tier talent, SFUSD has worked with a number of nontraditional programs. Teach For America, for example, has had a presence in the San Francisco Bay Area since 1991. The Bay Area's current corps size is 340 teachers, with more than 2,500 alums living in the region.[164] The future presence of TFA in SFUSD schools is questionable, however. Though SFUSD has a set of corps members returning for their second year, SFUSD did not hire any new corps members for the 2016–17 school year.[165]

In 2001, the San Francisco Bay Area became one of the first sites for New Leaders. Though the majority of fellows work in Oakland traditional and charter schools, New Leaders plays a critical role in bringing talented leaders into Bay Area schools.[166]

The San Francisco Bay Area was also Education Pioneers' founding site in 2004. Since launching, Education Pioneers has been the source of top-notch talent for a variety of education organizations across the Bay Area, including SFUSD, charter management organizations, education technology companies, and venture philanthropy firms.[167] Since 2004, Education Pioneers has connected more than 475 talented individuals to education organizations in the Bay Area.

Most recently, in 2010, SFUSD launched its Teacher Residency program, which provides residents with one year of an in-classroom residency under the leadership of a mentor teacher and three years of paid classroom teaching coupled with significant support and coaching.[168] Since 2010 the San Francisco Teacher Residency has prepared nearly 150 teachers, 89 percent of whom are still teaching in SFUSD.[169]

SFUSD and TNTP are also in the process of creating the San Francisco Pathway to Leadership in Urban Schools (PLUS) program, which will train school leaders to effectively lead schools and manage and mentor teachers.[170]

Activities

Innovation Investment

Not surprisingly, San Francisco is the epicenter for venture capital and venture philanthropy investment. Between 35 and 40 percent of all venture funding in the U.S. is routinely invested in the Bay Area.[171] In 2013, 41 percent of the $26.8 billion invested in California alone went to San Francisco startups like Uber, Airbnb, and Dropbox.[172] AngelList features more than 18,000 investors in the San Francisco area.[173]

The high-risk, high-reward ethos of venture capital investing persists in the education sector

The high-risk, high-reward ethos of venture capital investing persists in the education sector through firms like General Catalyst, Kapor Capital, Reach Capital, GSV Capital, Y Combinator/Imagine K12, the NewSchools Venture Fund, First Round Capital, Founders Fund, and more.[174] San Francisco scores well on the indicators related to investment in education innovation largely because it sets the bar for total venture capital spent on education in total and per student capita.

SFUSD enjoys support for education innovation from current city leaders and its taxpayers. Namely, one of the provisions of the 2008 San Francisco city ballot measure called the Quality Teacher and Education Act (QTEA) aims to "improve academic innovation, technology and other support resources to assure continuous growth of innovative teaching and learning opportunities and provide students, parents, and teachers with access to current technology and adequate resources to support student achievement." The QTEA provides SFUSD with a dedicated stream of funding specifically for its Impact & Innovation Awards program, as well as for research and development.[175] The district's new iLab is a product of this fund.

Although the city doesn't have a fund dedicated to education innovation, its Office of Education spends considerable staff time supporting the implementation of SFUSD's middle school transformation effort in partnership with Salesforce.org. The effort includes the Principal's Innovation Fund—granting $100,000 to middle grade principals at 21 SFUSD schools to invest directly into their schools.[176]

California doesn't have an education innovation fund or any other dedicated state-level funding for education innovation.

[Please observe Author's Note on page 20.]

Deviation

District deviation is a measure of how SFUSD budgets its money across eight categories compared to other similar school districts in the state. Districts whose spending policies differ significantly from the norm are considered innovative districts, as their differential spending is an indication that they are taking a new or different approach to funding allocation and ultimately, to educating students.

SFUSD differs from peer group districts in the state by nearly one-third of a standard deviation. Compared to the three other districts in our sample, SFUSD's deviation score is approximately half that of Indianapolis Public Schools' score, double that of Kansas City Public Schools, and approximately the same as the Orleans Parish School Board. The way SFUSD budgets its funds differs by more than a full standard deviation in the category of Support Services—Instructional Staff, and by nearly a full standard deviation in the category of Support Services—Pupils.

Dynamism

San Francisco scores very well on indicators of entry and exit of education nonprofit firms as well as on the number of existing education startups. However, dynamism within the schools themselves is much more limited. This is not surprising given SFUSD's traditional district structure and the city's small charter market.

While two new charter schools opened at the beginning of the 2015–16 school year, no charter or district schools closed at the end of the 2014–15 school year. Further, while the state publishes important school-level data in the form of report cards, there is currently no mechanism in place to allow for easy comparison across schools. (The state previously used API scores to assess school performance, and briefly had a 1–10 ranking system for schools. However, neither is currently in use.) As a result, it is difficult to know which schools are the lowest performing and thus should be shuttered.

Kansas City: Murmurs in the Heart of America

Kansas City is slowly but surely making a name for itself as a burgeoning entrepreneurial hotspot, but the thriving spirit of innovation in the private sector hasn't yet translated to the education sector.

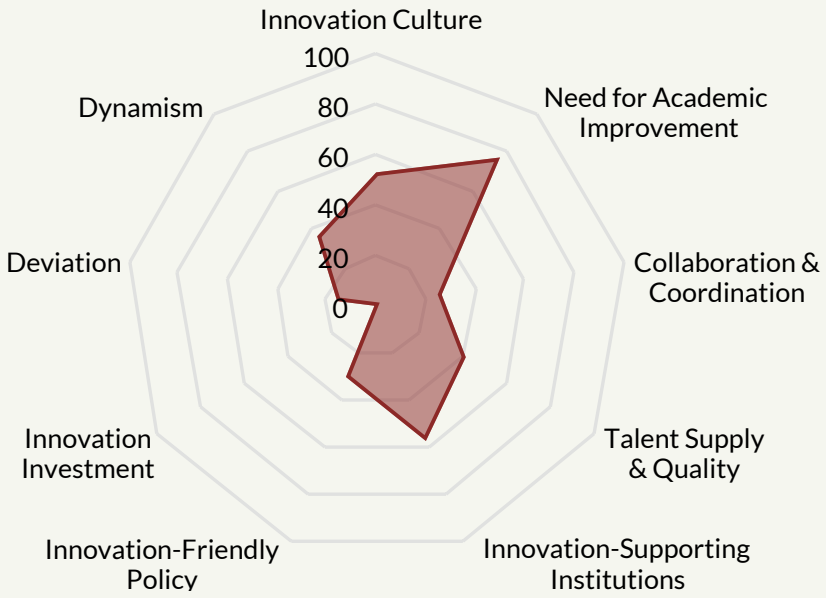
The The arrival of Google Fiber in 2011 drew entrepreneurs from across the country, who flocked to the city to take advantage of the new super-speed technology. The startup culture in Kansas City grew rapidly as a result.

This growth, coupled with purposeful investment in innovation and entrepreneurialism by the local government, nonprofit organizations, foundations, and the private sector in the form of public-private partnerships, helped Kansas City land a spot among the world's top five cities for an emerging entrepreneurial ecosystem by the Global Entrepreneurship Congress' Cities Challenge.[177]

Figure 12 USEII Evaluation: Kansas City

Total Score: 36

(Out of 100)



Sub-Index	Sub-Index Score	Pillar	Pillar Score
Innovation Conditions	28	Innovation Culture	52
		Need for Academic Improvement	75
		Collaboration & Coordination	25
		Talent Supply & Quality	41
		Innovation-Supporting Institutions	56
		Innovation-Friendly Policy	30
Innovation Activities	8	Innovation Investment	0
		Deviation	15
		Dynamism	35

Conditions

Innovation Culture

In 2011, Kansas City beat out more than 1,100 other applicants to become the first city in which Google would roll out its new low-cost, high-speed internet, Google Fiber.[178] The arrival of this technology has catalyzed growth in the city's startup sector and has helped draw entrepreneurs from all over the country.

As entrepreneurs flocked to the city they began to set up shop in the same neighborhood—the first neighborhood in the world to get Google Fiber. By 2012, thanks to the density of entrepreneurs in this area, the Kansas City Startup Village (KCSV) was settled.[179] The KCSV is a community of entrepreneurs who want to grow their startups in the Kansas City area, and is complete with the Hacker House, where Homes for Hackers attracts new startups to the city by offering three months of free rent and access to Google Fiber in the heart of the KCSV.[180] Since 2012, the KCSV has hosted more than 40 startups, which have collectively raised about $19 million in investment capital.[181]

Investment in innovation and entrepreneurialism in Kansas City isn't just coming from the grassroots, however. City officials and the private sector are also heavily involved.

In late 2015, the volunteer efforts of the KCSV translated into the Kansas City Startup Foundation (KCSF), a nonprofit designed to raise awareness about the city's entrepreneurial ecosystem and provide mentoring, coaching, problem-solving, and collaboration to help Kansas City's entrepreneurs reach their full potential.[182]

Investment in innovation and entrepreneurialism in Kansas City isn't just coming from the grassroots, however. City officials and the private sector are also heavily involved. In May 2014, together with Cisco Systems Inc., Sprint, local startup accelerator Think Big Partners, and other partners, Kansas City launched a $15.7 million public-private partnership to "deploy a Smart+Connected City framework to transform urban services and enhance the citizen experience."[183] Cisco's Smart+Connected Communities proposes to create a network of physical objects—the Internet of Things (IoT)—equipped with cameras and sensors to gather and analyze data in real time to help city leaders identify and solve problems and to make the city more livable. Cisco and Think Big Partners have also partnered to create a Living Lab to test emerging IoT technologies.[184]

Kansas City is also home to a number of industries and institutions that have supported the city's entrepreneurialism and innovation. A host of global tech companies like Sprint, Garmin, Cerner, VML, H&R Block, and DST call the city home,[185] and postsecondary institutions including the University of Missouri—Kansas City, Kansas City University of Medicine and Biosciences, and a campus of the University of Kansas have long histories in the city. Notably, in April 2015, nearby Kansas State University—Olathe launched Ingenuity Central as a hub to "connect the most inventive ideas, technologies, and processes across diverse industries in…the greater Kansas City metro area."[186]

Last year, nonprofit organization the Downtown Council, in partnership with the Economic Development Corporation of Kansas City, launched a new startup grants competition, LaunchKC.[187] Through the program, entrepreneurs can apply and compete for one of ten $50,000 grants to support the launch of their ideas, as well as one year of free workspace in downtown Kansas City and mentoring and networking opportunities.

Other organizations support entrepreneurs, including Digital Sandbox KC, which helps "provide proof-of-concept resources to support early-stage commercialization processes,"[188] and UP Kansas City, which "supports new ventures, provides resources for entrepreneurs, and connects the community."[189] They host programs and events like Startup Weekend and host local networking events.

Further, Techweek (founded in Chicago to help showcase and support Chicago's emerging tech ecosystem) will expand to Kansas City this year. The event will feature a festival that engages the tech and entrepreneur community, an entrepreneur expo, speakers, a startup competition, and awards.[190]

The Kauffman Foundation is a major source of financial investment and support for education entrepreneurs in the city.

The city's low cost of living—which is 2.5 percent below the national average[191]—and tax incentives fueled by a "border war"[192] between Kansas City, MO and Kansas City, KS to draw businesses to locate there, further make the city a desirable place to live and launch a business.

Despite the excitement and momentum in the city in general, this innovative spirit has yet to fully penetrate the school system. Compared to the number of for-profit education startups in the 50 largest cities in the U.S., Kansas City has three percent of the number that exist in New York City, which has the most education startups. The city also lacks important communication and collaboration mechanisms like a common enrollment system for its schools, a Gates district-charter compact, or a Strive partnership.

However, the presence of the Kauffman Foundation is a major source of financial investment and support for education entrepreneurs in the city.[193] The Kauffman Foundation's investments focus on entrepreneurship and education, and the foundation is incubating a coordinating intermediary for the city. The foundation also partners with the Hall Family Foundation, Greater Kansas City Community Foundation, and H&R Block Foundation on the Kansas City Education Funders Collaborative to leverage resources for local education projects of mutual interest. The Kauffman Foundation is widely recognized as "the nation's premier foundation working to foster entrepreneurship."[194]

Talent

In addition to local universities and traditional teacher education programs, Kansas City has embraced a number of alternative teacher and leader pipelines and the Kauffman Foundation has charted a talent strategy for the city that includes multiple pipeline organizations.[195] Together, they aim to provide a broad spectrum of existing and prospective educators with pathways to high-impact positions in Kansas City's education ecosystem.

Teach For America began its partnership with KCPS in 2008. TFA's Kansas City corps size has grown to 120 members, with more than 300 alumni living in the region.[196]

Leading Educators' Greater Kansas City Fellowship works with teams of teachers and individual teachers to provide leadership coaching and training.[197] Leading Educators launched its pilot program in New Orleans in 2008-09, and expanded to Kansas City in 2011–12. To date through all of its partnerships, Leading Educators has trained 814 teacher leaders impacting more than 187,000 students.[198]

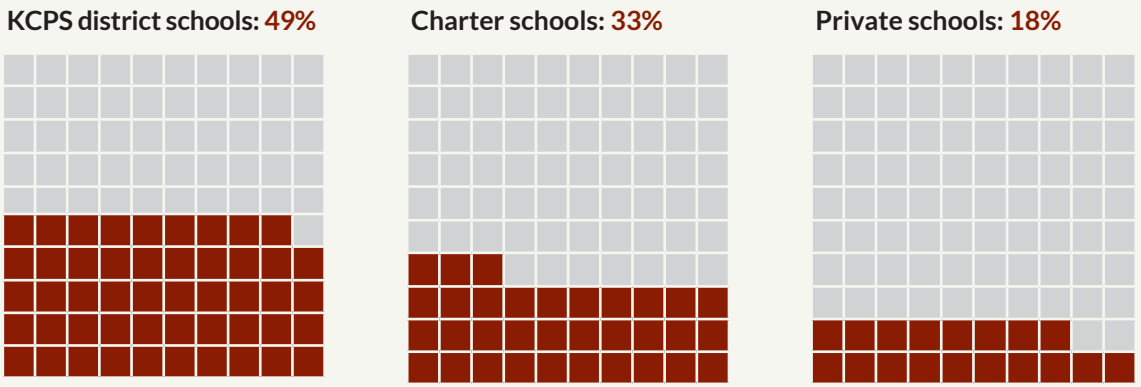
The Lean Lab is a huge boost to education innovation in Kansas City. It will help recruit talent and incubate ideas to promote fresh models for school delivery and new thinking about how to approach pressing education issues.

The Kansas City Teacher Residency program recruits and trains high-quality teachers to teach in Kansas City-area districts and schools. During the year-long residency, resident teachers train under the leadership of a mentor teacher in high-need classrooms.[199] Teacher residents have the opportunity to earn a master's degree and teacher certification through Kansas City's Park University.[200]

In addition to school-based talent pipelines, local nonprofit the Lean Lab works to incubate top talent in other education-focused settings. Lean Lab hosts regular community events and supports entrepreneurs as they incubate and launch ideas through the Incubator Fellowship. Through this month-long fellowship program, fellows are provided coaching, networking, and capital as they build concrete solutions to specific problems facing urban education. The fellowship culminates in LaunchED Day, where fellows pitch their ideas and present their solutions.[201]

Through a grant from the Kauffman Foundation, the Lean Lab will be partnering with New Orleans-based education innovation organization 4.0 Schools to build a local education startup community.[202] The addition of this organization to Kansas City's landscape is a huge boost to the future development of education innovation in the city. It will help recruit talent and incubate ideas to promote fresh models for school delivery and new thinking about how to approach pressing education issues in the city.

Figure 13 Student Enrollment in Kansas City by Sector, SY 2015–16[203]



School Choice

Kansas City is home to 10 traditional public school districts.[204] Of them, the Kansas City Public Schools (KCPS) district is the city's most central, yet second-largest district serving approximately 14,600 K–12 students during the 2015–16 school year.[205]

The share of students living within the KCPS district boundaries who attend charter schools is significant. In 2015 Kansas City ranked fifth in the nation of cities with the largest charter school enrollment share of public school students, at 42 percent.[206] Currently, 20 charter organizations operating 35 schools[207] serve nearly 11,000 students.[208]

Missouri is unique in that it differentiates between charter school "authorizers" and "sponsors." The Missouri State Board of Education is the sole legal charter school authorizer in Missouri. As the authorizer, the State Board has the authority to approve and oversee sponsors, which are the entities charged with approving charter school applications, overseeing schools, and holding charter schools accountable to the goals outlined in their contracts.[209] Currently, a variety of organization types can operate as charter school sponsors, including higher education institutions, local school boards, and the Missouri Charter Public School Commission, which is an independent chartering board. There are 12 active sponsors in Missouri, most of which are universities.[210] However, just five currently authorize charter schools located within KCPS boundaries.

Although the National Association of Charter School Authorizers ranked the state eighth out of 44 with a score of 25 out of 33 points,[211] the state charter law has room for improvement. In 2015, the National Alliance for Public Charter Schools ranked Missouri's charter law 30th out of 43.[212]

Missouri does not have any private school choice programs, limiting access to private schools for many families.

Need for Academic Improvement

Despite the growth of innovation and entrepreneurialism in many sectors in Kansas City, KCPS continues to struggle. In 2015, just 32 percent of KCPS' students scored proficient or advanced on the state assessment in English/language arts, and just 22 percent did so in math.[213] Just 65 percent of students graduated within four years from KCPS, compared to 88 percent statewide.[214] And at 10 percent, KCPS' dropout rate is five times that of the statewide dropout rate.[215]

Though CREDO has not updated its analysis or provided specific information on Kansas City's charter schools, as of 2015, roughly half of the city's charter schools outperformed KCPS in the percent of students testing proficient or higher on the state assessment in English/language arts, and nine schools did so in math.[216]

Activities

Innovation Investment

Kansas City lacks district and state-level funding for innovation. It also lacks the level of venture capital investment seen in other entrepreneurial hot spots. According to the National Venture Capital Association, in 2015 the Kansas City region landed just four venture capital deals worth approximately $53.2 million. This put the city in 60th place out of more than 130 regions.[217] The Compound Annual Growth Rate (CAGR) of venture capital investment in the KC region between 2010 and 2015 is -6.4 percent.[218] (In contrast, nearby St. Louis landed 41 venture capital deals worth nearly $254.4 million in 2015, putting it in 18th place nationwide. Its 2010-2015 CAGR is 47 percent.) None of these deals was for education-focused innovations.[219]

The Kauffman Foundation provides a critical influx of philanthropic capital to the city, however. A recent $2.3 million grant from the Kauffman Foundation is helping bring 4.0 Schools to the city, for example.[220] The foundation has also provided philanthropic support to local school districts (KCPS and others), Catholic schools, community engagement events, and local research initiatives.[221]

[Please observe Author's Note on page 20.]

In addition, a local nonprofit organization, the Catalyst Fund for KCPS Students, partners with KCPS to provide grants to school administrators, teachers, therapists, and counselors to support innovations designed to improve students' academic outcomes.[222]

Deviation

District deviation is a measure of how KCPS budgets its money across eight categories compared to other similar school districts in the state. Districts whose spending policies differ significantly from the norm are considered innovative districts, as their differential spending is an indication that they are taking a new or different approach to funding allocation and ultimately, to educating students.

KCPS' expenditure profile hews close to the norm. It differs from peer-group districts in the state by only 15 percent of a standard deviation overall. However, the way KCPS budgets its funds differs by more than a full standard deviation in the category of Support Services—Instructional Staff and by slightly less than a standard deviation (0.85) in both Support Services—Operation and Maintenance of Plant and Support Services—Business/Central/Other. Compared to the three other districts in our sample, KCPS' deviation score is the lowest, approximately half of the scores of the San Francisco Unified School District and the Orleans Parish School Board, and one-quarter the score of Indianapolis Public Schools.

Dynamism

Despite the high percentage of KCPS students attending charter schools, the marketplace of schools remains relatively stable from year to year, exhibiting very little dynamism.

Between 2013 and 2014, Kansas City experienced a firm replacement rate of zero for education-focused nonprofit organizations. Further, while the Missouri Department of Education publishes detailed report cards for each of the schools in KCPS, there is no common system to compare the schools, making interpretation of the data provided potentially confusing for families and stakeholders. It also means that it is impossible to know which schools are the lowest performing in the district and should be closed. Because this information is not available, Kansas City was not able to get credit for school closures, if and when they happen.

Just one private school closed in Kansas City at the end of the 2014–15 school year.[223] Not a single new school in any sector opened at the beginning of the 2015–16 school year.[224]

City Comparisons

Though each city receives an overall USEII score, it is important to consider these results as an innovation profile, paying close attention to pillars where the city scores particularly well or particularly poorly. The radar charts below communicate scores for each of the nine pillars in a uniform fashion, bringing strengths and weaknesses out in stark relief. For instance, Kansas City's high scores on need for academic improvement and innovation supporting institutions may indicate an urban environment where current schools are underperforming and new organizations are cropping up to explore alternatives. Indianapolis' profile also signals a need for academic improvement, but shows a district trying new strategies with money and organizations available to support it.

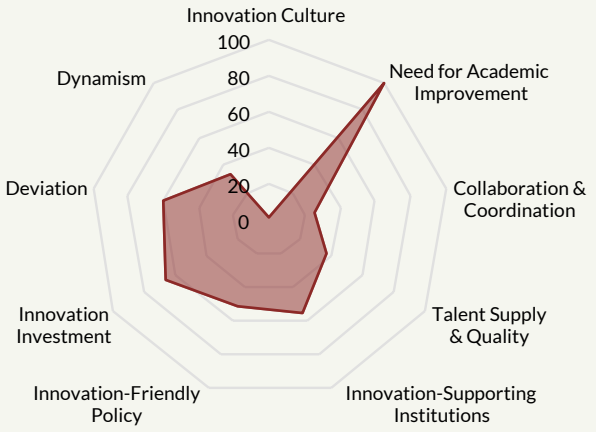
Both San Francisco and New Orleans score high on dynamism—75 and 81 respectively—but for very different reasons.

Even with a uniform scale, comparisons require an investigation of individual indicator scores. For instance, both San Francisco and New Orleans score high on dynamism—75 and 81 respectively—but for very different reasons. The USEII dynamism score measures the entry and exit of education nonprofits, startups, and schools. San Francisco's dynamism comes from the astronomical number of education nonprofit entries and exits and number of operating education startups while its stock of schools, which is dominated by the SFUSD, is left unchanged year after year. In contrast, New Orleans' dynamism comes from its system of charter schools. Strong policies close low performers and lower barriers for new entrants while organizations support a supply of new schools.

Figure 14 City Comparisons

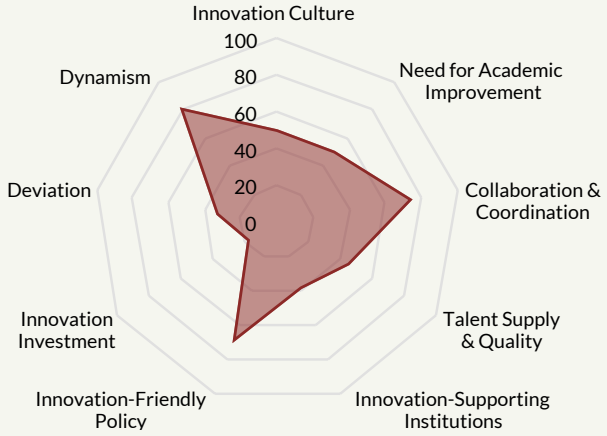
INDIANAPOLIS

Total Score: 51
(Out of 100)



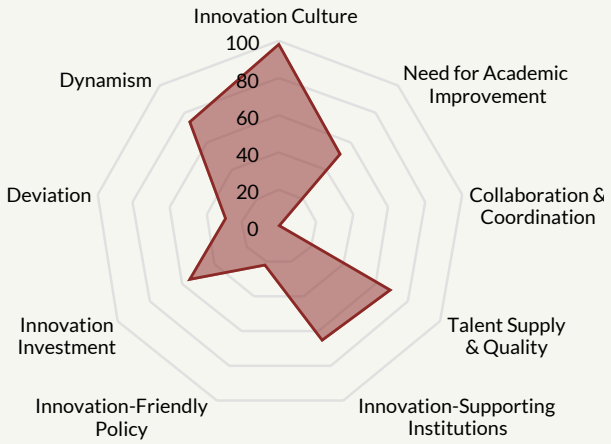
NEW ORLEANS

Total Score: 52
(Out of 100)



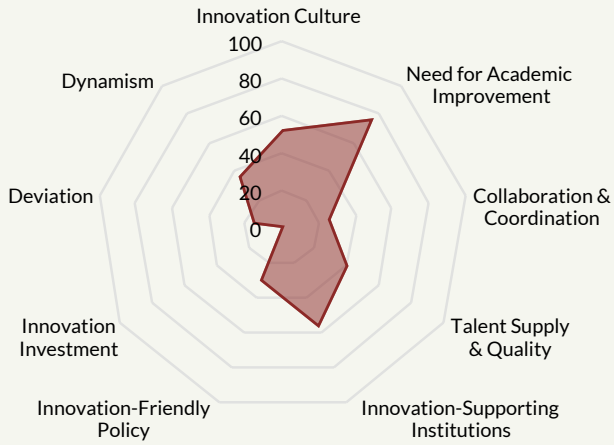
SAN FRANCISCO

Total Score: 54
(Out of 100)



KANSAS CITY

Total Score: 36
(Out of 100)



Though each city's landscape and ecosystem is unique, a number of commonalities emerged.

To begin with, all four cities struggle with student achievement outcomes compared to their state average, and with closing the achievement gap between students who are eligible for free or reduced-price lunch and those who are not. Because we believe that low achievement is an important condition for innovation—it encourages education leaders to seek out alternatives, take risks with potential achievement payoffs, and try new approaches to teaching and learning—the cities all received similarly (and counterintuitively) "high" scores for their student achievement struggles.

Closely related to the issue of student achievement is the quality of the schools in each city. A number of indicators in the index seek to capture accountability for school quality, and the four cities exhibit common struggles in holding low-performing schools accountable. At a city level, we measure the dynamism of schools by the percent of low-performing district and charter schools that are closed each year. While the states in which all four cities are located provide detailed school-level data including achievement test scores, graduation rates, dropout rates, and other pertinent data, only two of the four cities—Indianapolis and New Orleans—have in place a summative ranking of schools that facilitates interpretation of the school-level data and easy school-to-school comparisons. Both Indiana and Louisiana assign individual schools an A–F rating based on their data, making it easy to determine whether the school districts and charter authorizers in Indianapolis and New Orleans are closing the lowest-performing schools. In the charter sector, both cities close at least some of their lowest-performing schools. In the district sector, Indianapolis closed none of its lowest-performing schools (though a couple were converted to Innovation Network Schools). In New Orleans, none of the city's district-run schools were low performing, and thus none needed to be closed.

In both San Francisco and Kansas City, it is much more difficult to determine which schools are the lowest performing and thus should be closed.

All cities saw some level of turnover in the private schools sector, though because none of the cities or states in our sample has a performance rating system for all private schools, it is impossible to know whether the lowest-performing private schools are indeed the ones that closed.

Further, a majority of cities in our sample lack important collaboration and coordination mechanisms. Only New Orleans has a common enrollment system for its schools. Importantly, this system includes district schools, charter schools, *and* private schools participating in the state's voucher program. Leaders in Indianapolis are in the process of creating a common enrollment system, though it has not yet been implemented.

By and large the cities also lack formal collaboration structures like Gates charter-district compacts (only New Orleans has one in place), membership in the League of Innovative Schools (only San Francisco is a member), or a Strive partnership (no cities have one).

Three of the four cities have significant charter market shares, but only two cities have programs in place that enable students to use public dollars to attend private schools. Only New Orleans has a course choice program in place.

Three of the four cities also have a coordinating intermediary organization that helps identify and coordinate education at a city level.

On the other hand, the cities share a number of strengths. As noted above, three of the four cities have significant charter market shares, meaning that families living in these cities have a relatively high degree of choice over where they send their children.

Three of the four cities also have a coordinating intermediary organization that helps identify and coordinate education at a city level. The Mind Trust in Indianapolis and New Schools for New Orleans in New Orleans fulfill this critical role, and the Kauffman Foundation currently plays this role in Kansas City while it incubates an independent coordinating intermediary slated to launch in the near future. These organizations help recruit other organizations to the city; the Kauffman Foundation, for example, is helping forge a partnership between New Orleans-based 4.0 Schools and local nonprofit the Lean Lab, and The Mind Trust is singlehandedly responsible for bringing Teach For America to Indianapolis.

To varying degrees, the cities have all embraced alternative teacher pipelines like Teach For America, New Leaders, or TNTP, and all have their own local teacher residency programs to train high-quality teachers.

The inclusion of future cities in the USEII will provide even greater insights into the similarities and differences across cities; add to the discussion of promising policies, programs, and organizations that support education innovation; highlight challenges to innovation and potential solutions being embraced by different geographies; and add depth to our understanding of how the education sector is embracing innovation.

APPENDICES

Appendix A: Methodology

The US Education Innovation Index (USEII) is computed from the successive aggregation of scores starting at the indicator level (the most disaggregated level) all the way up to the overall USEII score. The overall structure of the USEII and the relationship of each successive layer to the reported score are illustrated in the table below.

Table A1: USEII Framework

Sub-Index	Pillar	Indicator ID	Indicator
Innovation Conditions	Innovation Culture	1.a.1	Total number of startups per capita
		1.a.2	Presence of innovation-specific convenings
	Need for Academic Improvement	1.b.1	Five-year student achievement trend
		1.b.2	Past year achievement compared to state average
		1.b.3	Five-year FRL-Non-FRL achievement gap closing trend
		1.b.4	Past year FRL-Non-FRL achievement gap
	Collaboration & Coordination Mechanisms	1.c.1	Presence of Gates district-charter compact
		1.c.2	Presence of Strive partnerships
		1.c.3	Existence of common enrollment system
		1.c.4	Presence of coordinating intermediary
	Talent Supply & Quality	1.d.1	Participants and alumni of nationally renowned system-level talent pipeline organizations per student
		1.d.2	Number of education programs in region
		1.d.3	Presence of teacher residency program
		1.d.4	Percent of population 25 and over with a bachelor's degree or higher
	Innovation-Supporting Institutions	1.e.1	Presence of innovation-focused education foundations
		1.e.2	Presence of League of Innovative Schools
		1.e.3	Presence of DoE Education Innovation Cluster (EIC)
		1.e.4	Presence of senior district leader focused on innovation
		1.e.5	Education incubators and R&D orgs
		1.e.6	Percentage of households with a broadband internet subscription
	Innovation-Friendly Policy	1.f.1	School finance spending and equity
		1.f.2	Course choice
		1.f.3	Quality of charter school law
		1.f.4	Quality of authorizer
		1.f.5	Presence of independent (non-district) charter authorizer
		1.f.6	Presence of school choice programs (vouchers, education spending accounts, tax-credit scholarship, individual tax credit/deduction)
		1.f.7	Strength of accountability for tax credit and voucher programs

Table A1: USEII Framework (Continued)

Sub-Index	Pillar	Indicator ID	Indicator
Innovation Activities	Innovation Investment	2.a.1 2.a.2 2.a.3 2.a.4 2.a.5 2.a.6 2.a.7 2.a.8	Presence of district funding committed to innovation Presence of state funding committed to innovation Presence of city funding committed to innovation Philanthropic capital—total Philanthropic capital—per capita Venture capital—total Venture capital—per capita Presence of federal innovation funding
	Deviation	2.b.1	District deviation (district model deviation from peer-group norm in state)
	Dynamism	2.c.1 2.c.2 2.c.3 2.c.4 2.c.5 2.c.6	Education nonprofit firm entry/exit Number of operating education startups Charter school exit (performance-based only) District school exit (performance-based only) Private school exit (any) School entry (any)

Scoring

Each indicator is scored using one of three scoring methodologies:

Binary: Cities earn either zero or one point, depending on the presence or absence of a condition. For example, Indicator 1.b.1: Five-year student achievement trend, is scored using this binary methodology. Cities earn one point if their five-year student achievement trend is declining (because poor student achievement is seen as a necessary condition to spark innovation), or zero points if their five-year student achievement trend is increasing.

Min-max transformation: In some cases, we know a city's absolute value on a given indicator but there is not a clear target or goal against which to measure the city's performance. In these cases, we conduct what is called a min-max transformation. To do this we collected the same data point for the 50 largest cities in the nation and put them on a scale from zero to one, where the city with the highest value earns a score of one and the city with the lowest value earns a score of zero. The rest of the cities fall between zero and one, preserving both the order of cities' values and the distance between them. For example, we calculate Indicator 1.d.4: Percent of population 25 and over with a bachelor's degree or higher, using this methodology. Using Census data we can know the absolute percent of a city's population with a bachelor's degree or higher, but we do not know what a "good" percentage of college degrees in a city is; it likely differs from city to city and depends on many factors, including the local economy and job market. So instead of giving each city a score out of 100, which would assume that the goal for cities would be to have 100 percent of their population earn a bachelor's degree or higher, we used a min-max transformation based on data from the 50 largest U.S. cities. The city with the highest percent of adults 25 and over with a bachelor's degree or higher, Seattle, earned a score of

one and the city with the lowest percentage of adults 25 and over with a bachelor's degree or higher, Detroit, earned a zero. All other cities were ranked against these benchmarks. San Francisco's score of 0.89 means that it has 89 percent of the number of people 25 and over with a bachelor's degree or higher relative to the gap between Seattle and Detroit (where Detroit is the lowest of the 50 cities).

Scale score: In some cases, we used data or scores from other sources. We kept the scores the same and translated them to a 0-1 scale. For example, the data for Indicator 1.f.3: Quality of charter school law was taken directly from the National Alliance for Public Charter Schools (NAPCS). The NAPCS has its own methodology for ranking states' charter school laws. Each state receives a score out of 228 points. Indiana, for example, earned 177 out of 228 points. We translated this numerical score into a percentage by dividing points earned by points possible, giving Indianapolis a score of 0.78.

Below is a complete list of the scoring method for each indicator.

Table A2: Indicator Scoring Method

ID	Indicator	Scoring Method
1.a.1	Total number of startups per capita	Total number of startups per capita, scored using a min-max transformation of the 50 largest cities
1.a.2	Presence of innovation-specific convenings	Binary
1.b.1	Five-year student achievement trend	Binary. 1 indicates a declining student achievement trend measured by the city student achievement level divided by state achievement level in each of last 5 available years
1.b.2	Past year achievement compared to state average	Binary. 1 indicates city achievement is lower than state achievement in last available year
1.b.3	Five-year FRL-Non-FRL achievement gap closing trend	Binary. 1 indicates a constant or growing achievement gap based on last 5 available years of achievement data
1.b.4	Past year FRL-Non-FRL achievement gap	Binary. 1 indicates presence of an achievement gap based on last available year of achievement data
1.c.1	Presence of Gates district-charter compact	Binary
1.c.2	Presence of Strive partnerships	Binary
1.c.3	Existence of common enrollment system	Binary
1.c.4	Presence of coordinating intermediary	Binary
1.d.1	Participants and alumni of nationally renowned system-level talent pipeline organizations per student	Total number of alumni, scored using a min-max transformation of the results for the 50 largest cities

Table A2: Indicator Scoring Method (Continued)

ID	Indicator	Scoring Method
1.d.2	Number of education programs in region	Total number of education programs, scored using a min-max transformation of the results for the 50 largest cities
1.d.3	Presence of teacher residency program	Binary
1.d.4	Percentage of population 25 and over with bachelor's degree or higher	Total percent of population 25 and over holding at least a bachelor's degree, scored using a min-max transformation of the results for the 50 largest cities
1.e.1	Presence of innovation-focused education foundations	Binary
1.e.2	Presence of League of Innovative Schools	Binary
1.e.3	Presence of DoE Education Innovation Cluster (EIC)	Binary
1.e.4	Presence of senior district leader focused on innovation	Binary
1.e.5	Education incubators and R&D orgs	Binary
1.e.6	Percentage of households with broadband internet subscription	Scored using min-max transformation of the broadband penetration of the 50 largest U.S. cities
1.f.1	School finance spending and equity	Scored using data source scoring method
1.f.2	Course choice	Binary
1.f.3	Quality of charter school law	Scored using data source scoring method
1.f.4	Quality of authorizer	Scored using data source scoring method
1.f.5	Presence of independent (non-district) charter authorizer	Binary
1.f.6	Presence of school choice programs (vouchers, education spending accounts, tax-credit scholarship, individual tax credit/deduction)	Scored in increments of 0.25 with presence of each type of program contributing 0.25 to the total score
1.f.7	Strength of accountability for tax credit and voucher programs	Binary
2.a.1	Presence of district funding committed to innovation	Binary
2.a.2	Presence of state funding committed to innovation	Binary
2.a.3	Presence of city funding committed to innovation	Binary
2.a.4	Philanthropic capital—total	Scored using min-max transformation of both education-specific philanthropic grant investment in aggregate and per school-aged capita for the 50 largest cities
2.a.5	Philanthropic capital—per capita	

Table A2: Indicator Scoring Method (Continued)

ID	Indicator	Scoring Method
2.a.6	Venture capital—total	Scored using min-max transformation of both education-specific venture capital investment in aggregate and per school-aged capita for the 50 largest cities
2.a.7	Venture capital—per capita	
2.a.8	Presence of federal innovation funding	Binary
2.b.1	District deviation (district model deviation from peer-group norm in state)	Scored using min-max transformation of the weighted average absolute deviation across DoE reported budget categories
2.c.1	Education nonprofit firm entry/exit	Binary, if the city has between 5-20 percent turnover of education-focused nonprofit organizations
2.c.2	Number of operating education startups	Scored using a min-max transformation of the total number of operating education startups for the 50 largest cities
2.c.3	Charter school exit (performance-based only)	The percent of "F"-rated or bottom-tier charter schools (using the district's or state's rating system) that were closed
2.c.4	District school exit (performance-based only)	The percent of "F"-rated or bottom-tier district schools (using the district's or state's rating system) that were closed
2.c.5	Private school exit (any)	Binary
2.c.6	School entry (any)	Binary

Weighting and Aggregation

Once each indicator is scored, a weight is applied. Indicators are weighted evenly based on the number of indicators in each pillar, so each indicator in a pillar with two indicators would receive a weight of 0.5, each indicator in a pillar with four indicators would receive a weight of 0.25, and so on. For example, Indicator 1.a.1: Total number of startups per capita is scored using data from CrunchBase. We acquired the total number of education startups in each city and then conducted a min-max transformation of the total number of startups in each of the 50 largest cities in the nation. Kansas City, for example, earns a score of 0.03. Indicator 1.a.2 is scored using a binary scoring method; either the city has innovation-specific convenings or it does not. Kansas City does, and therefore earns one point. Each of these scores is then multiplied by its weight, in this case, 0.5, and then the two scores are added together. Kansas City's score on Pillar 1.a is 0.515, or approximately 52 percent.

The only exception to this weighting methodology is for Indicators 2.c.3, 2.c.4, and 2.c.5. These indicators look at the rate of school exit in the charter, district, and private school sectors respectively. Instead of applying a flat weight to each indicator, we weight each based on the market share of each sector in a given city. So in New Orleans, Indicator 2.c.3, which measures school closures in the charter sector, is weighted 73 percent;

Indicator 2.c.4, which measures school closures in the district sector, is weighted six percent; and Indicator 2.c.5, which measures school closures in the private schools sector, is weighted 21 percent. This weighting is based on the rationale that a city scoring full points for a dynamic charter sector where charters represent 80 percent of the total market share should score higher than a city with an equally dynamic charter sector that only represents five percent of the total market.

Once we weight each indicator based on the methodology described above, we obtain an overall pillar score. We then weight each pillar. Pillar weights are outlined in the chart below.

Table A3: Indicator Weights

Sub-Index	Indicator ID	Indicator	Weight
Innovation Conditions	1.a	Innovation Culture	14%
	1.b	Need for Academic Improvement	22%
	1.c	Collaboration & Coordination Mechanisms	11%
	1.d	Talent Supply & Quality	16%
	1.e	Innovation-Supporting Institutions	17%
	1.f	Innovation-Friendly Policy	20%
Innovation Activities	2.a	Innovation Investment	36%
	2.b	Deviation	20%
	2.c	Dynamism	44%

Pillar weights are then rolled up into one of two sub-indices. We then weight each sub-index. Sub-index weights are outlined in the chart below.

Table A4: Sub-Index Weights

ID	Sub-Index	Weight
1	Innovation Conditions	57%
2	Innovation Activities	43%

Both the pillar weights and the sub-index weights were determined by soliciting input from a variety of experts in both the private sector and the education sector, rather than by weighting each equally according to the number of pillars. This is based on the rationale that individuals working in the sector have a greater understanding of how certain conditions or activities affect innovation than could be gauged by a straight mathematical formula.

Pillar weights are then combined to determine an overall score on the Education Innovation Index. The chart below lists the weights for each indicator by city.

Table A5: Indicator Weights by City

Sub-Index	Pillar	ID	Indicator	Weights			
				KC	I	NO	SF
Innovation Conditions	Innovation Culture	1.a.1	Total number of startups per capita	50%	50%	50%	50%
		1.a.2	Presence of innovation-specific convenings	50%	50%	50%	50%
	Need for Academic Improvement	1.b.1	Five-year student achievement trend	25%	25%	25%	25%
		1.b.2	Past year achievement compared to state average	25%	25%	25%	25%
		1.b.3	Five-year FRL-Non-FRL achievement gap closing trend	25%	25%	25%	25%
		1.b.4	Past year FRL-Non-FRL achievement gap	25%	25%	25%	25%
	Collaboration & Coordination Mechanisms	1.c.1	Presence of Gates district-charter compact	25%	25%	25%	25%
		1.c.2	Presence of Strive partnerships	25%	25%	25%	25%
		1.c.3	Existence of common enrollment system	25%	25%	25%	25%
		1.c.4	Presence of coordinating intermediary	25%	25%	25%	25%
	Talent Supply & Quality	1.d.1	Participants and alumni of nationally renowned system-level talent pipeline organizations per student	25%	25%	25%	25%
		1.d.2	Number of education programs in region	25%	25%	25%	25%
		1.d.3	Presence of teacher residency program	25%	25%	25%	25%
		1.d.4	Percent of population 25 and over with a bachelor's degree or higher	25%	25%	25%	25%
	Innovation-Supporting Institutions	1.e.1	Presence of innovation-focused education foundations	17%	17%	17%	17%
		1.e.2	Presence of League of Innovative Schools	17%	17%	17%	17%
		1.e.3	Presence of DoE Education Innovation Cluster (EIC)	17%	17%	17%	17%
		1.e.4	Presence of senior district leader focused on innovation	17%	17%	17%	17%
		1.e.5	Education incubators and R&D orgs	17%	17%	17%	17%
		1.e.6	Percentage of households with a broadband internet subscription	17%	17%	17%	17%

Table A5: Indicator Weights by City (Continued)

Sub-Index	Pillar	ID	Indicator	Weights			
				KC	I	NO	SF
Innovation Conditions	Innovation-Friendly Policy	1.f.1	School finance spending and equity	20%	20%	20%	20%
		1.f.2	Course choice	20%	20%	20%	20%
		1.f.3	Quality of charter school law	7%	7%	7%	7%
		1.f.4	Quality of authorizer	7%	7%	7%	7%
		1.f.5	Presence of independent (non-district) charter authorizer	7%	7%	7%	7%
		1.f.6	Presence of school choice programs (vouchers, education spending accounts, tax-credit scholarship, individual tax credit/deduction)	10%	10%	10%	10%
		1.f.7	Strength of accountability for tax credit and voucher programs	10%	10%	10%	10%
Innovation Activities	Innovation Investment	2.a.1	Presence of district funding committed to innovation	17%	17%	17%	17%
		2.a.2	Presence of state funding committed to innovation	17%	17%	17%	17%
		2.a.3	Presence of city funding committed to innovation	17%	17%	17%	17%
		2.a.4	Philanthropic capital - total	8%	8%	8%	8%
		2.a.5	Philanthropic capital - per capita	8%	8%	8%	8%
		2.a.6	Venture capital - total	8%	8%	8%	8%
		2.a.7	Venture capital - per capita	8%	8%	8%	8%
		2.a.8	Presence of federal innovation funding	17%	17%	17%	17%
	Deviation	2.b.1	District deviation (district model deviation from peer-group norm in state)	100%	100%	100%	100%
	Dynamism	2.c.1	Education nonprofit firm entry/exit	17%	17%	17%	17%
		2.c.2	Number of operating education startups	17%	17%	17%	17%
		2.c.3	Charter school exit (performance-based only)	33%	28%	73%	7%
		2.c.4	District school exit (performance-based only)	49%	60%	6%	67%
		2.c.5	Private school exit (any)	18%	12%	21%	26%
		2.c.6	School entry (any)	17%	17%	17%	17%

Appendix B: Indicator Rationales

Table B1: Indicator Rationales

Sub-Index	Pillar	ID	Indicator	Rationale
Innovation Conditions	Innovation Culture	1.a.1	Total number of startups per capita	An education system embedded in a larger culture of innovation will indirectly benefit from risk tolerance, venture funding mentality, entrepreneurship support, etc.
		1.a.2	Presence of innovation-specific convenings	Innovation-specific convenings bring together entrepreneurs, funders, and leaders; spread information; and help attendees learn innovation practices.
	Student Achievement	1.b.1	Five-year student achievement trend	This demonstrates a positive or negative trend (cities with a negative trend score highly on this indicator, because poor student achievement is a condition likely to catalyze innovation).
		1.b.2	Past year achievement compared to state average	This provides a snapshot of LEA achievement (cities with low achievement score highly on this indicator, because poor student achievement is a condition likely to catalyze innovation).
		1.b.3	Five-year FRL-Non-FRL achievement gap closing trend	This demonstrates a positive or negative trend (cities with a negative trend score highly on this indicator, because poor student achievement is a condition likely to catalyze innovation).
		1.b.4	Past year FRL-Non-FRL achievement gap	This provides a snapshot of the LEA achievement gap (cities with a large gap score highly on this indicator, because poor student achievement is a condition likely to catalyze innovation).
	Collaboration & Coordination Mechanisms	1.c.1	Presence of Gates district-charter compact	District-charter compacts increase the flow of information between the two sectors so effective practices are more likely to spread.
		1.c.2	Presence of Strive partnerships	Strive partnerships align multiple, diverse organizations around a unified goal and track progress against it over time. They provide focus and put leaders in closer proximity to each other.
		1.c.3	Existence of common enrollment system	Common enrollment systems reduce barriers to choice participation.
		1.c.4	Presence of coordinating intermediary	Coordinating intermediaries identify and align high-impact education efforts and funding.
	Talent Supply & Quality	1.d.1	Participants and alumni of nationally renowned system-level talent pipeline organizations per student	Talent pipeline organizations prioritize hiring and training local teachers, principals, and system leaders, combining best practices in the talent world with local knowledge and relationships of their participants.
		1.d.2	Number of education programs in region	Cities with education programs nearby will have a steady stream of talent in close proximity. They will also provide opportunities for partnerships and rigorous studies.
		1.d.3	Presence of teacher residency program	Teacher residency programs enable cities to recruit and train a high-quality teacher workforce.
		1.d.4	Percent of population 25 and over with a bachelor's degree or higher	The availability of an educated workforce is necessary to staff schools and organizations with high-quality talent.

Table B1: Indicator Rationales (Continued)

Sub-Index	Pillar	ID	Indicator	Rationale
Innovation Conditions	Innovation-Supporting Institutions	1.e.1	Presence of innovation-focused education foundations	Foundations, such as venture philanthropists, that focus solely on funding entrepreneurs and innovative programs provide much-needed capital that gives new ideas opportunities to become reality. They can also provide supports such as board building, office space, and connections to other entrepreneurs and funders.
		1.e.2	Presence of League of Innovative Schools	The League of Innovative Schools serves as a national network of district leaders pursuing innovation agendas.
		1.e.3	Presence of DoE Education Innovation Cluster (EIC)	EICs are local communities of practice that bring together educators, startups, policymakers, investors, researchers, and community groups across the usual boundaries that separate them. The goal is to improve the shared understanding of needs and opportunities so that more effective and more authentic tools and practices are developed to meet the challenges that face our schools.
		1.e.4	Presence of senior district leader focused on innovation	A cabinet-level leader solely focused on innovation is a signal that innovation is a priority and the district is willing to spend money on it.
		1.e.5	Education incubators and R&D orgs	Incubators and R&D orgs are uniquely focused on education innovation. They help turn ideas into reality and build the education sector's knowledge about innovation practices.
		1.e.6	Percentage of households with a broadband internet subscription	Internet access ensures access to information for families and entrepreneurs and supports entrepreneurs in bringing new technology and ideas into the city.
	Innovation-Friendly Policy	1.f.1	School finance spending and equity	Equitable school finance formulas ensure that all schools, regardless of sector, have access to the funding necessary to educate all students at high levels.
		1.f.2	Course choice	Allowing students to spend public funding on online courses provides an incredible amount of flexibility around time, space, and academics that can enable innovation.
		1.f.3	Quality of charter school law	Charter laws determine the quality of the state's charter school regulations, including authorizing. Under bad laws, charter schools can be created and kept open even if they're not performing well. Good charter laws ensure authorizer oversight with high standards for regulation.
		1.f.4	Quality of authorizer	The regulation that charter school authorizers provide is critical to a healthy charter market. When executed well, authorizing ensures that high-performing schools can grow to serve more students and poor-performing schools are closed.
		1.f.5	Presence of independent (non-district) charter authorizer	School districts are often authorizers of charter schools in their district boundaries. This arrangement can present a conflict of interest where the district is regulating its competition. An independent authorizer doesn't have the same potential conflict.
		1.f.6	Presence of school choice programs (vouchers, education spending accounts, tax-credit scholarship, individual tax credit/deduction)	An array of school choice mechanisms provides multiple access points to private schools that have more flexibility to innovate due to regulatory freedom.
		1.f.7	Strength of accountability for tax credit and voucher programs	Accountability laws ensure that there is a fair and transparent process for determining which schools are performing well and which are not. This is particularly important for innovation so leaders can determine whether specific activities are effective.

Table B1: Indicator Rationales (Continued)

Sub-Index	Pillar	ID	Indicator	Rationale
Innovation Activities	Innovation Investment	2.a.1	Presence of district funding committed to innovation	Districts that provide funding specifically for innovation activities demonstrate their commitment to innovation and provide resources for new ideas.
		2.a.2	Presence of state funding committed to innovation	States that provide funding specifically for innovation demonstrate their commitment to innovation and provide resources for new ideas.
		2.a.3	Presence of city funding committed to innovation	Cities that provide funding specifically for innovation activities demonstrate their commitment to innovation and provide resources for new ideas.
		2.a.4	Philanthropic capital—total	Philanthropic funding for education innovation activities provides flexible resources to try new ideas. *[Please observe Author's Note on page 20.]*
		2.a.5	Philanthropic capital—per capita	
		2.a.6	Venture capital—total	Venture capital funding provides flexible resources to try new ideas.
		2.a.7	Venture capital—per capita	
		2.a.8	Presence of federal innovation funding	Federal i3 grants are peer reviewed, sizable, and garner national attention.
	Deviation	2.b.1	District deviation (district model deviation from peer-group norm in state)	District budgets reflect the allocation of measurable and limited resources (financial, capital, people) according to the different choices and priorities of a district. Each of these strategic choices is often reflected in the financial makeup of a district, especially when these choices require tradeoffs between different types of resources — spending more on teacher salaries requires either an increase in revenues or a decrease in expenditure somewhere else. If a district's strategic choices are reflected in its over- or under-allocation of resources in its budget, then the deviation of these allocations from peers should reflect the degree to which a district is breaking from the norm.
	Dynamism	2.c.1	Education nonprofit firm entry/exit	Business dynamics in the form of entry and exit is the mechanism by which outdated ideas and industry practices are replaced by new and potentially revolutionary ones at the firm level.
		2.c.2	Number of operating education startups	
		2.c.3	Charter school exit (performance-based only)	
		2.c.4	District school exit (performance-based only)	
		2.c.5	Private school exit (any)	
		2.c.6	School entry (any)	

Appendix C: Data Sources

Table C1: Data Sources

ID	Indicator	Sources			
		Kansas City	Indianapolis	New Orleans	San Francisco
1.a.1	Total number of startups per capita	CrunchBase (subscription required): Accessed March 15, 2016			
1.a.2	Presence of innovation-specific convenings	EdSurge and Google search for "education innovation convenings + Kansas City"	EdSurge and Google search for "education innovation convenings + Indianapolis"	EdSurge and Google search for "education innovation convenings + New Orleans"	EdSurge and Google search for "education innovation convenings + San Francisco"
1.b.1	Five-year student achievement trend	Author's calculation based on 2010-2014 achievement data retrieved from the Missouri Department of Elementary and Secondary Education	Author's calculation based on 2010-2014 data from the Indiana Department of Education (see 'Corporation Results by Grade Level' Excel download)	Author's calculation based on 2010-2014 Louisiana Department of Education LEAP data provided by New Schools for New Orleans	Author's calculation based on 2010-2014 data retrieved from the California Department of Education
1.b.2	Past year achievement compared to state average				
1.b.3	Five-year FRL-Non-FRL achievement gap closing trend				
1.b.4	Past year FRL-Non-FRL achievement gap				
1.c.1	Presence of Gates district-charter compact	Center for Reinventing Public Education			
1.c.2	Presence of Strive partnerships	Strive Together network members			
1.c.3	Existence of common enrollment system	There is no unified enrollment system for all district and charter schools	The city is in the process of developing a unified system, but one does not currently exist	EnrollNOLA	There is no unified enrollment system for all district and charter schools
1.c.4	Presence of coordinating intermediary	Education Cities			
1.d.1	Participants and alumni of nationally renowned system-level talent pipeline organizations per student	Activate Ed Exchange (An online database of participants and alumni from Education Pioneers, Broad Center, and the Strategic Data Project. Network membership required to access.)			
1.d.2	Number of education programs in region	NCES College Navigator: Within 50 miles of city center, offering education major, bachelor's and advanced degrees ONLY, public and private nonprofit ONLY, 4-year and 2-year ONLY			
1.d.3	Presence of teacher residency program	Kansas City Teacher Residency	Indianapolis Teaching Fellows	TeachNOLA	San Francisco Teacher Residency
1.d.4	Percent of population 25 and over with a bachelor's degree or higher	Census Bureau Quick Facts: Bachelor's degree or higher, percent of persons age 25 years+			
1.e.1	Presence of innovation-focused education foundations	Foundation Center Online			
1.e.2	Presence of League of Innovative Schools	League of Innovative Schools: District Map and Profiles			
1.e.3	Presence of DoE Education Innovation Cluster (EIC)	Education Week: Tracking Education Innovation Partnerships			

Table C1: Data Sources (Continued)

ID	Indicator	Sources			
		Kansas City	Indianapolis	New Orleans	San Francisco
1.e.4	Presence of senior district leader focused on innovation	Kansas City Public Schools	Indianapolis Public Schools	Orleans Parish School Board	San Francisco Unified School District
1.e.5	Education incubators and R&D orgs	Lean Lab	The Mind Trust	4.0 Schools	Imagine K12
1.e.6	Percentage of households with a broadband internet subscription	American Fact Finder: Percent of Households with a Broadband Internet Subscription			
1.f.1	School finance spending and equity	EdWeek Quality Counts School Finance Index			
1.f.2	Course choice	International Association for Online K-12 Learning (iNACOL)			
1.f.3	Quality of charter school law	NAPCS Model Law Rankings: Missouri	NAPCS Model Law Rankings: Indiana	NAPCS Model Law Rankings: Louisiana	NAPCS Model Law Rankings: California
1.f.4 1.f.5	Quality of authorizer Presence of independent (non-district) charter authorizer	NACSA State of Charter Authorizing: Missouri	NACSA State of Charter Authorizing: Indiana	NACSA State of Charter Authorizing: Louisiana	NACSA State of Charter Authorizing: California
1.f.6	Presence of school choice programs (vouchers, education spending accounts, tax-credit scholarship, individual tax credit/deduction)	Ed Choice: School Choice in America			
1.f.7	Strength of accountability for tax credit and voucher programs	No public programs for private schools	Indiana Department of Education: Choice Scholarship Program Frequently Asked Questions	Louisiana Department of Education: Bulletin 133	No public programs for private schools
2.a.1	Presence of district funding committed to innovation	KCPS FY 2017 budget: No line item related to innovation (accessed 8/5/16)	Innovation Network Schools	OPSB FY 16 budget: No line item related to innovation (accessed 8/5/16)	Impact and Innovation Awards
2.a.2	Presence of state funding committed to innovation	Missouri Department of Elementary and Secondary Education	Indiana Department of Education	Louisiana Department of Education	California Department of Education
2.a.3	Presence of city funding committed to innovation	No funds from mayor's budget directed toward education innovation (accessed 8/5/16)	Mayor's Office of Education Innovation	No funds from mayor's budget directed toward education innovation (accessed 8/5/16)	Mayor's partnership with SFUSD and Salesforce
2.a.4 2.a.5	Philanthropic capital—total Philanthropic capital—per capita	Foundation Directory Online, Topic Area: "Elementary and secondary education" Keyword: Innovation (subscription required) *[Please observe Author's Note on page 20.]*			

Table C1: Data Sources (Continued)

ID	Indicator	Sources			
		Kansas City	Indianapolis	New Orleans	San Francisco
2.a.7	Venture capital—per capita	CrunchBase (subscription required): Accessed March 15, 2016			
2.a.8	Presence of federal innovation funding	Federal i3 grant recipients			
2.b.1	District deviation (district model deviation from peer-group norm in state)	Budget data from U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "Local Education Agency (School District) Universe Survey", 2012-13 v.1a. Average standard deviation from state-based peer districts calculated from eight budget categories most likely to reflect innovation activities: Instruction, Support Services – Pupils, Support Services—Instructional Staff, Support Services—General Administration, Support Services—School Administration, Support Services—Operation and Maintenance of Plan, Support Services—Student Transportation Services, and Support Services—Business/Central/Other.			
2.c.1	Education nonprofit firm entry/exit	IRS 990 filing data provided by Guidestar			
2.c.2	Number of operating education startups	CrunchBase (subscription required): Accessed March 15, 2016			
2.c.3 2.c.4	Charter school exit (performance-based only) District school exit (performance-based only)	There is no comprehensive system for assessing school performance (see Missouri Department of Education)	Indiana Department of Education Data and Public Records Request (data received 5/2/16)	Louisiana Department of Education School Report Cards	There is no comprehensive system for assessing school performance (see California Department of Education)
2.c.5	Private school exit (any)	Comparison of registered nonpublic schools in 2014-15 to 2015-16 from Missouri Department of Education	Indiana Department of Education Data and Public Records Request (data received 5/2/16)	Louisiana Department of Education School Performance Scores	Comparison of registered private schools in 2014-15 to 2015-16 from California Department of Education
2.c.6	School entry (any)	Search of Kansas City Public Schools website and Missouri Department of Elementary and Secondary Education (charter schools and nonpublic schools)	Indiana Department of Education Data and Public Records Request (data received 5/2/16)	Louisiana Department of Education	Search of California Department of Education (private schools and charter schools) and San Francisco Unified School District

Appendix D: Indicator Wish List

These are research-backed indicators that would provide a more accurate picture of education innovation but either failed to meet our rigorous selection criteria or simply don't exist.

Table D1: Indicator Wish List

Indicator	Discussion
Within firm innovation (district, private, nonprofit)	How innovative is each individual firm? This would require us to apply a clear benchmark for an "innovation" to all the activities within each firm, which would be difficult to measure without direct observation.
School-level autonomy/freedom to innovate	How much freedom do school leaders have to innovate? How much of their budget is dictated to them? How much flexibility do they have in changing the school model? We know that charters at the LEA level have more autonomy, but does that autonomy trickle down from the CMO to the school? It is possible that district principals can have more autonomy than those at charters or even private schools. Knowing for sure would require deep research.
Labor force quality & availability	Labor is a critical factor of production, yet we have no good, consistent way to measure the quality of an education sector's labor force. Different preparation models don't correlate to actual performance, and evaluation practices tend to classify teachers as high performing disproportionally. Some states have implemented value-added model evaluations but their implementations all differ and it is not widespread.
Public funding fungibility	While we have measures of funding adequacy and fairness, we lack a clear way of measuring the degree of flexibility school operators have with respect to public revenue. For example, even if a principal has lots of funding, and it's "fair," that doesn't mean she can spend it as she wishes. She may be mandated to spend all of her special-education revenue on prescribed SPED resources. What we would like to understand is the percentage of a school operator's revenue that is unrestricted. Given the overall climate and structure of public funding, it is unlikely that this would be a high percentage. A perhaps more reasonable metric would be what percentage within each given expenditure category is restricted.
Student mobility due to school performance	In education sectors with a high degree of parental choice, it would be useful to know if school performance actually translates into enrollment expansions and contractions. How responsive is demand to student performance? If student performance for a school drops by 5%, how much does their enrollment drop the next year?
Quality of technology infrastructure	This is a common private sector measure. As technology becomes an increasingly important factor, we would like to measure the quality and capacity of the technology infrastructure within schools and systems. Are networks secure? Can students get online easily? Are current hardware and software provided? Are teachers and principals trained on technology?
Knowledge transfer and sharing	Innovations only have limited impact if they're not shared. We'd like to know how innovation diffuses, where, and how quickly both within the education sector (e.g. teachers from different schools, school operators with nonprofits) and across sectors (e.g. industry collaborations with education operators).
Micro innovation activity	Most data sets for macroeconomic study are biased toward things we can measure at scale. This disadvantages important small innovations and efforts for which there is no standard process for data collection and reporting.
Other signs of market failure	Innovation, especially disruptive innovation, occurs when there is an acute need or problem. Poor academic performance provides us with a blunt instrument. Further research would have to be conducted to define what "market failure" looks like in the education sector.

Acknowledgments

The authors would like to thank the many education leaders and innovation experts for contributing their time and expertise to the development of the US Education Innovation Index prototype and report. We are particularly grateful to Matt Candler, Julia Freeland Fisher, Brian Greenberg, Michael Hansen, Steven Hodas, Arnobio Morelix, Leonard Nakamura, Awais Sufi, and Kaitlyn Walker, whose perspectives and feedback helped shape this report. The analysis, opinions, and recommendations in this report are those of the authors alone, and should not be attributed to the individuals named above.

About the Authors

Jason Weeby

Jason Weeby is a senior fellow on Bellwether Education Partners' Policy & Thought Leadership Team. His work focuses on city-level education reform initiatives, governance, innovation, and talent. He may be reached at jason.weeby@bellwethereducation.org.

Kelly Robson

Kelly Robson is a senior analyst with Bellwether Education Partners' Policy & Thought Leadership Team. She has worked on a number of policy analysis, research, writing, and implementation projects covering a range of issues. She may be reached at kelly.robson@bellwethereducation.org.

George Mu

George Mu is currently pursuing an MBA from Massachusetts Institute of Technology and was most recently a consultant with Bellwether Education Partners in the Strategic Advising practice. George has assisted districts, charter operators, and foundations to define competitive strategies, improve organizational effectiveness, and facilitate competitive grant proposals to federal and state funders.

About Bellwether Education Partners

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Bellwether Education Partners is a nonprofit dedicated to helping education organizations—in the public, private, and nonprofit sectors — become more effective in their work and achieve dramatic results, especially for high-need students. To do so, we provide a unique combination of exceptional thinking, talent, and hands-on strategic support.

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