



*Appendix to:*

# The Power and Pitfalls of Education Incentives

Additional Details for Implementing  
an Education Incentives Program

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BROOKINGS

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# Appendix

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The structure of an incentive program can and will vary from district to district and from school to school; each district or school can pick and choose which tasks and behaviors to provide incentives for, the amount of incentives to be paid, and the payment structure. If a particular district struggles with reading scores or a particular school suffers from low attendance rates, the opportunity for a tailored yet properly implemented incentive program could be especially fruitful. One advantage that incentive programs have over other educational interventions is that a school or district can implement an incentive program on its own with relative ease. This appendix to “The Power and Pitfalls of Education Incentives” provides a guide to implementing incentive programs along these lines based on our experience with the experiments that inform the paper.

Incentive programs were implemented in a coordinated effort to ensure that students, parents, teachers, and key school staff understood the particulars of each program, that each program was implemented with high fidelity to the original research design, and that payments were distributed on time and accurately.

The successful implementation of each incentive program depends on five guidelines: (1) Students and their families are provided with extensive information about the programs, with additional mechanisms to check understanding; (2) Explicit structures of communication and responsibility are created between districts and third-party vendors, including procedures to govern the flow of data, information, and reporting; (3) A payment algorithm is created to generate reward amounts from student performance data, and procedures are established to both run the algorithm and to distribute rewards on a predetermined schedule; (4) Regular reporting is done on subject (student or parent) performance, including metrics such as participation, average earnings, and refined budget projections; and (5) A culture of success is built by recognizing student performance with assemblies,

certificates, and bonuses. A detailed section on each guideline is included below. These examples are based on our work through EdLabs and should be replicable, whether a school district works independently or with another outside implementation and evaluation partner.

All programs had a similar roadmap to launch. First, we garnered support from the district superintendent. Second, a letter was sent to principals of schools that served the desired grade levels. Third, we met with principals to discuss the details of the programs. In New York, these meetings largely took place one school at a time; in the other cities large meetings were assembled at central locations. After principals were given information about the experiment, there was a sign-up period. After the sign-up period was over, each school was asked to identify a school coordinator to act as the point of contact and to act as an on-site manager.

Although these incentive programs were operated on a district level, the programs described herein are eminently scalable either within school districts or individual schools. This claim is based on our reliance on district-based teams to help manage the day-to-day operations in our own experiments. The descriptions below correspond to EdLabs’ specific experience, but smaller-scale programs can be built using many of the same tools.

## (1) INFORMING SUBJECTS

One of the truly distinguishing features of our incentive experiments was the concentrated effort made to fully inform students and their families of not only the particulars of each city program (i.e., incentive structure, reward schedule, etc.), but also the potential risks involved in participating.<sup>1</sup> Information is essential not only to ensuring that subjects understand what they are participating in but also to increasing participation rates through wider awareness.

During the time leading up to and including the first weeks of school, community forums were held to inform parents of the details of the various programs. In some cities, district representatives were also present at Back to School Night to answer any questions from parents. At the start of each school year, eligible students at participating schools were given information packets containing several documents, typically a letter from the superintendent with basic program details, a parental consent or withdrawal form, a list of frequently asked questions about the program, an overview of the incentive scheme, and a program calendar with details about reward distribution.

Efforts to increase program visibility also play an important role in delivering information and may also help boost participation. In New York City, T-shirts, pencils and various other items with the program logo were distributed to generate excitement about the new program. Dallas schools held mid-session celebrations in addition to the customary end-of-session celebrations to encourage non-participating students to take quizzes and return permission slips.

Once program rosters were solidified, participating students were typically given a welcome packet that reinforced program basics and provided additional copies of program calendars. After the first six to eight weeks of each program, students were given knowledge quizzes to gauge their understanding of the basic elements of the program: incentive structure, reward calendar, who to go to with questions, and so on. Knowledge quizzes were typically ten questions long; schools were responsible for administering them during the school day. Answers were compiled and coded as quickly as possible to ascertain areas of concern and develop strategies for addressing those concerns.

The importance of ensuring subject understanding of an incentive program through digestible materials and persistent assessment of subject knowledge cannot be overstated. Simply put, the effect of an incentive program is dampened if subjects do not fully comprehend the incentive scheme; in that case it is as if the subjects did not participate at all, and that is precisely why informing subjects is a foundational piece of proper implementation.

## (2) STRUCTURES OF COMMUNICATION AND RESPONSIBILITY

The second major guideline for successfully implementing an education incentive program requires building district capacity by hiring and empowering a district-based program management team. This team served as the primary liaison with both schools and other partners, where relevant. Responsibilities included maintaining fidelity to the original design by ensuring that students, parents, teachers, and key school staff understood the particulars of the program; ensuring that programmatic data were reported to vital district stakeholders and used to drive instruction; correctly calculating rewards and distributing payments on time and accurately; and (where relevant) ensuring that external partners performed their duties and provided timely assistance.

Given the temporary nature of their employment, district program teams were often subsumed under and reported directly to district leadership (such as the superintendent, chancellor, or CEO; chief academic officer; or even ad hoc “innovation” departments), but this was not always the case. In New York City, where the program was part of the citywide Opportunity NYC initiative, the program management team was part of the Office of Inequality; in Washington, DC, the program managers were a part of the Transformation Management Office; and in Houston, the program managers reported to the district head of elementary math curricula. Their exact location in the organizational structure was never important as long as program teams were given the flexibility to work with dozens of schools and maintain close contact with third-party vendors.

## (3) PAYMENT CALCULATION AND DISTRIBUTION

While payment calculation and distribution are the heart of an incentive program, they also represent the largest knowledge gap for in-school or –district implementation. We hope the protocol we developed is helpful to close this gap.

In each city, students received their first payments in or before the third week of October. Their last payments were distributed either in May or June, or disseminated over the summer, depending on the school calendar. Protocol for receiving student performance data from district

program managers, rendering it into reward amounts, and performing subsequent audits was fairly standardized across all five incentive experiments: for the most part, district-based program members were responsible for collecting and synthesizing student performance data and securely sending them to EdLabs for audits and eventual upload to a payroll vendor. There are two exceptions to this protocol: first, in Chicago, grades were uploaded from Gradebook, software into which teachers entered grades everyday, to Chicago's system of record. At this point, Chicago IT pulled the grades from IMPACT and uploaded them to an FTP site from which they could be retrieved. Second, during the first year in Washington, DC, teachers were responsible for filling out hard-copy spreadsheets every two weeks with student performance data. The spreadsheets were shipped to a company that scanned them and sent the images to a data entry company. The data entry company entered all student performance data into electronic spreadsheets that project managers accessed via an FTP site.

In New York City, Chicago, and Washington, DC, EdLabs calculated and audited payment data before uploading a final "pay file" to a third-party payroll vendor, Netchex. Netchex would match data from the pay file with preexisting student records (also created by EdLabs) on their server and, depending on whether or not the student had signed up for an automatic clearinghouse (ACH) bank account, Netchex either initiated a direct deposit or printed and shipped a personal check. Checks arrived at district headquarters and were collected and audited by district program management before distribution to school-based coordinators and, eventually, to students. Students also were given instructions on how to cash checks.

In both Dallas and Houston, where Accelerated Reader and Accelerated Math were utilized, respectively, program managers downloaded student performance data from those platforms. In Houston, after the team collected and synthesized both student and parent performance data for a given pay period and sent them to EdLabs, payment amounts were calculated and audited for accuracy; the final pay file was then sent back to Houston because, rather than use an outside vendor, Houston ran student and parent checks through their payroll system. Checks were printed by a bank partner (JP Morgan Chase) and were delivered to each treatment school the day before payday. In some cases where checks were used, students were required to sign upon receipt of their checks and certificates (see Figure A.2 in Section 5 below for an example of the Houston earnings certificate); this was done in order to track checks from beginning to end and to account for checks lost by students.

The frequency of the payments varied widely by city, ranging from once every two weeks to three times a year. Determining the ideal reward period requires balancing the administrative difficulties of frequent distribution and the possibility that students will lose motivation if rewards are too rare.

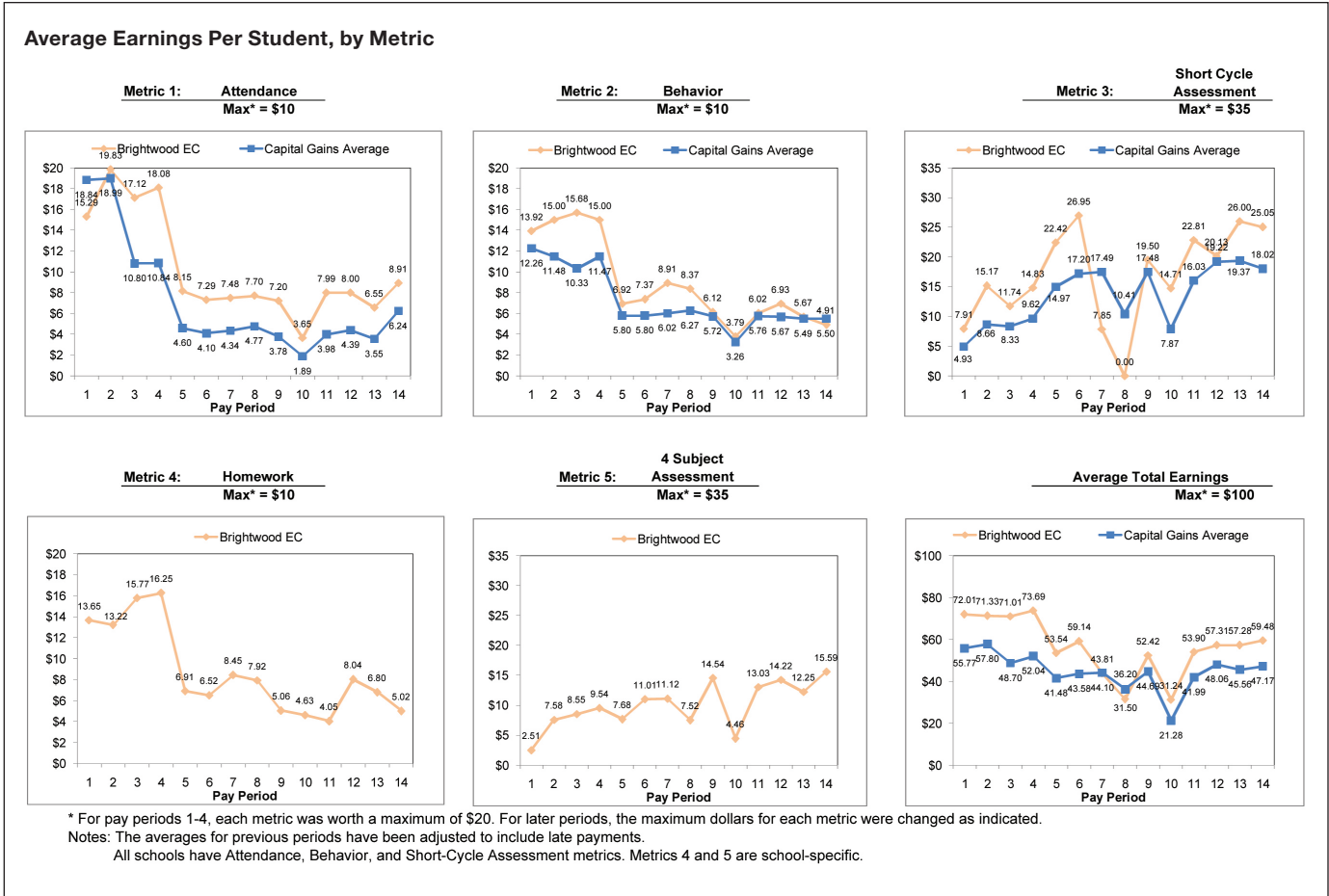
In all cities, incentives were coupled with financial literacy lessons, which came in different forms. In Washington, DC, for instance, the program partnered with a local nonprofit organization that held mandatory courses and administered quizzes to students. In Houston, during monthly payment celebrations at each participating campus, bank representatives would often attend and help both students and parents create savings accounts. In all cities, students were encouraged to open bank accounts to increase financial literacy, mitigate safety concerns, and ease distribution logistics. To this end, many of the programs partnered with banks to set up and deposit funds into student savings accounts. The accounts were interest-earning and child-owned.

#### (4) DATA REPORTING AND MONITORING

Careful and regular reporting is another critical component of running an incentive program, as the amount of programmatic performance data generated provides a unique opportunity to monitor student progress and use data to drive instruction outside the program.

During the second year in Washington, DC, five-page dashboards were created to help schools monitor their students' progress. Dashboards were sent to coordinators for distribution to principals and teachers at the end of each pay period. They reported school- and grade-level averages and school- and program-level performance on individual metrics, and listed the top-earning and most-improved earners at each school. Feedback about the dashboards was extremely positive: some commented that they were user-friendly and provided a good snapshot of the program. School-based coordinators also reported that the student-level data on the dashboard allowed teachers to encourage progress from low-achieving students. An example page from the Washington, DC dashboard is found in Figure A.1.

FIGURE A.1  
Washington, DC Performance Dashboard



Technology and performance software augmented the programs by providing up-to-date data in a variety of formats. The Accelerated Math program used in Houston was critical for monitoring in real time both the objectives teachers were assigning and those that students were mastering, as well as for keeping track of the student participation rate and flagging technological difficulties for attention. In this instance, rather than having any part of the management team produce dashboards on a regular schedule, participating teachers were trained to download classroom and school reports directly from AM to monitor student progress.

Our incentive experiments were unlike so many preceding educational initiatives due in large part to our accumulation of programmatic data and the resulting mechanisms of enforcement that the data provided. Incorporating program data into larger school-level contexts can both supplement strategic intervention plans and mitigate any perceived burdens of implementation. In sum, designing customized

data-reporting tools and using preexisting tools are critical components of monitoring fidelity of implementation (or tinkering with the research design), addressing challenges or shortcomings on an ongoing basis, projecting program costs, and targeting students, classrooms, and schools for specific interventions.

(5) BUILDING A CULTURE OF SUCCESS

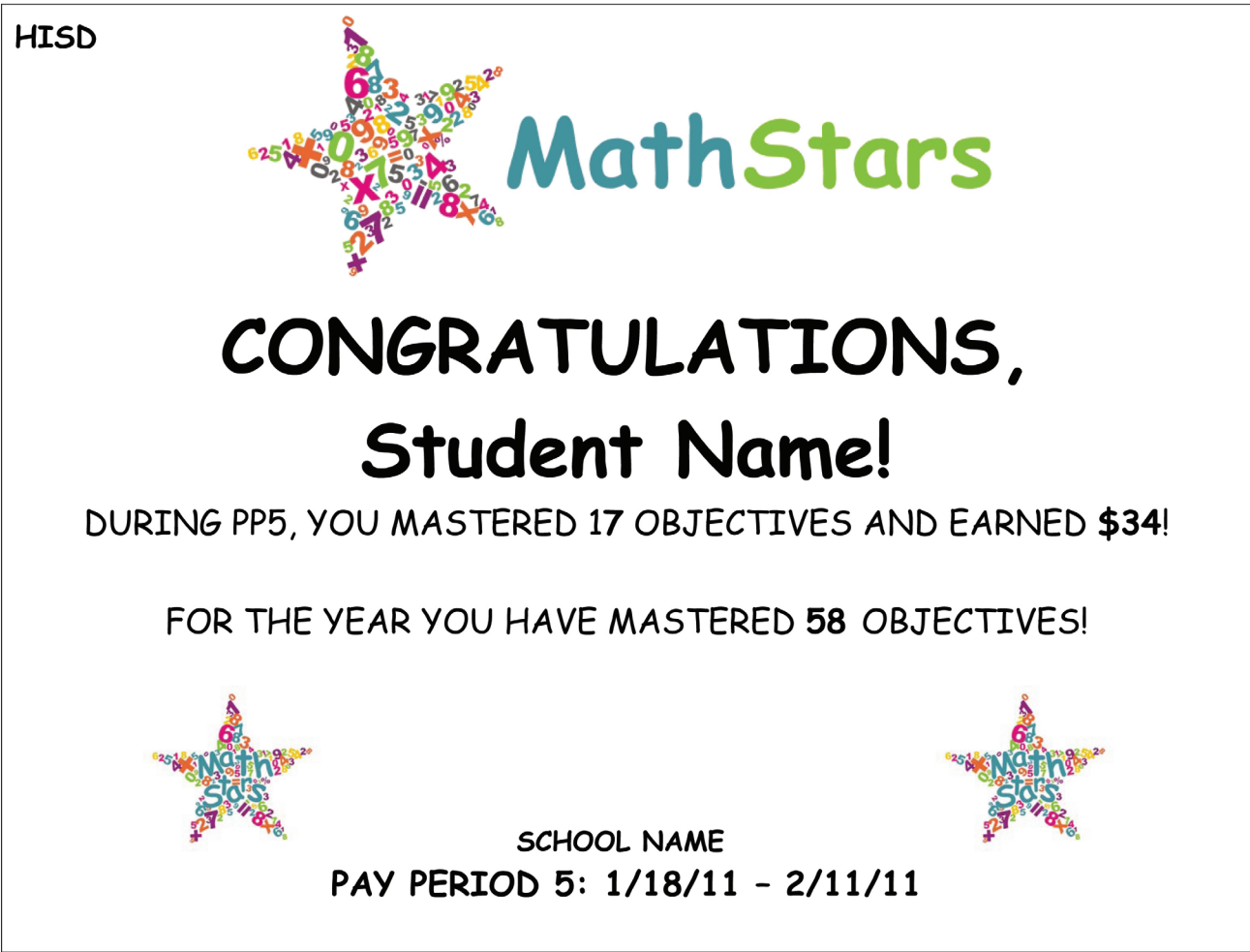
The final critical component of running a successful incentive program is building and maintaining an underlying culture of success and recognition for student performance. To this end, program management teams, often in concert with teachers, principals, and district leadership, provided several forms of student support and encouragement, including certificates and assemblies.

Certificates were the primary vehicles for reporting student performance to students. At the end of every pay period, certificates were created (in conjunction with creation of the final pay file) and distributed to school-based coordinators. In every student incentive program, certificates included program insignia, pay period dates, and details of student earnings. Certificates in Houston, as shown in Figure A.2, reported both current and cumulative math objectives mastered and earnings. In New York City, certificates reported student performance on the most recent assessment and corresponding earnings. Students received certificates alongside their checks; for students that received payment via direct deposit, certificates also functioned as a paystub. Students who did not receive rewards for a given pay period were given modified certificates as a way of encouraging them towards future rewards.<sup>2</sup>

Assemblies were another important way of distinguishing incentive programs within campuses and recognizing student achievement. Typically, there were two types of assemblies: first, schools held assemblies or pep rallies to introduce and generate excitement about the program at the start of the school year. These events typically were announced by hanging posters with program insignia and basic details that answered anticipated questions from students. The second type of assembly occurred throughout the school years on payday: participating students (i.e., students receiving rewards and certificates) would gather in the cafeteria or auditorium and publicly receive their check or certificate, or both.

Because the culture in which an incentive program operates can unify all the other implementation guidelines, it is perhaps the most important of the bunch. Student certificates reinforce

FIGURE A.2  
Houston MathStars Certificate





program basics in the same way as information packets while also using data to encourage students and inform teachers of their progress. Payday celebrations are conducive to orderly reward distribution and often bring together school leaders, district managers, and third-party partners.

In sum, our experience has showcased the power and importance of supplementing incentives with other forms of recognition for two principal reasons: first, certificates and assemblies reinforce student work and serve as a regular reminder to students of their role and status within the program (and their school generally); and second, public distribution of reward amounts and certificates creates an atmosphere of transparency among peers and might productively contribute to increased competition in terms of rewards and, as an extension of those rewards, achievement generally.

### COST

Not surprisingly, the current that courses through and ultimately unifies all five guidelines is cost and the various constraints it imposes. In this section we provide some guidance on attaining an optimal cost structure to successfully execute an education incentive program. Our prescription for constructing a workable incentive structure follows from our two central claims about incentive programs: First, unlike other major education initiatives of the past few decades, a large proportion (approximately 70–80 percent) of expenditures should be directed to students, parents, or teachers in the form of incentive payments.

Past education initiatives—from reducing school and classroom sizes and providing mandatory after-school programs, to providing renovated and more technologically savvy classrooms and professional development for teachers and other key staff—spend a far higher percentage of total expenditures on indirect costs such as building renovation, training, and computers than our incentive programs. In contrast, about 80% of program expenditures across the five cities was spent directly on incentives. Table A.1 presents incentives costs, administrative costs, and total costs for the incentive experiments implemented by EdLabs.

TABLE A.1  
Incentive Program Costs

| City                 | Incentives distributed | Administrative costs <sup>3</sup> | Total costs         | % Incentives |
|----------------------|------------------------|-----------------------------------|---------------------|--------------|
| Chicago <sup>4</sup> | \$3,000,000            | \$85,000                          | \$3,085,000         | 97%          |
| Dallas               | \$40,000               | \$86,000                          | \$126,000           | 32%          |
| Houston              | \$870,000              | \$367,000                         | \$1,237,000         | 70%          |
| NYC                  | \$1,600,000            | \$1,400,000                       | \$3,000,000         | 53%          |
| Washington DC        | \$3,800,000            | \$231,000                         | \$4,031,000         | 94%          |
| <b>TOTAL</b>         | <b>\$9,310,000</b>     | <b>\$2,169,000</b>                | <b>\$11,479,000</b> | <b>81%</b>   |

The scale of the program has a direct impact on cost. At a district level, program implementation can be driven entirely within a district department, with incentive payments offered either along the employee payroll cycle or through a third-party payroll vendor. Consider a district-wide incentive program in which students earn money for doing homework and are able to gain a maximum of \$100 during the school year. Two thousand students from twenty schools participate, and the average student receives \$50 total. Students are paid by check every three weeks, ten times total. Incentives payments for the year would total approximately \$100,000. In this hypothetical example, the most significant marginal costs for an internally driven incentive program are a full-time program manager and covering payment-processing fees. The program manager would be responsible for all payment calculation, auditing, and reward distribution. Where payments could be tied to the employee payroll cycle, the cost of payment processing may be minimized; where a bank partnership is necessary to process and print checks, the cost will be similar to contracting with an external payroll vendor (usually a per check or per deposit rate between \$0.30 and \$0.50).

Now consider a single school incentive program in which students can earn up to \$180 for wearing their uniform to school every day. Five hundred students participate and the average student receives \$120 during the school year. Students are paid in cash at the end of every month by their assistant principal, using Title I funds. Although the incentives payments total is \$60,000, in this instance there is no need for a dedicated program manager and no cost associated with processing the payments.

Each district or school should carefully consider cost when designing incentive programs and deciding whether or not to collaborate with other schools. Incentive programs can be run on many different levels and in many different ways; these guidelines provide a general framework for successful implementation.



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# Authors

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Roland Fryer, Jr. is the Robert M. Beren Professor of Economics at Harvard University, a Research Associate at the National Bureau of Economic Research, and a former Junior Fellow in the Harvard Society of Fellows — one of academia's most prestigious research posts. In January 2008, at the age of 30, he became the youngest African-American to receive tenure from Harvard. He has been awarded a Sloan Research Fellowship, a Faculty Early Career Development Award from the National Science Foundation, and the inaugural Alphonse Fletcher Award (Guggenheims for race issues).

In addition to his teaching and research responsibilities, Fryer served as the Chief Equality Officer at the New York City Department of Education during the 2007–2008 school year. In this role, he developed and implemented several innovative ideas on student motivation and teacher pay-for-performance concepts. He won a Titanium Lion at the Cannes Lions International Advertising Festival (Breakthrough Idea of the Year in 2008) for the Million Motivation Campaign.

Fryer has published papers on topics such as the racial achievement gap, the causes and consequences of distinctively black names, affirmative action, the impact of the crack cocaine epidemic, historically black colleges and universities, and acting white. He is an unapologetic analyst of American inequality who uses theoretical, empirical, and experimental tools to squeeze truths from data — wherever that may lead.

Fryer is a 2009 recipient of a Presidential Early Career Award for Scientists and Engineers, the highest award bestowed by the government on scientists beginning their independent careers. He is also part of the “2009 Time 100,” Time Magazine's annual list of the world's most influential people. Fryer's work has been profiled in almost every major U.S. newspaper, *TIME* Magazine, and *CNN*'s breakthrough documentary *Black in America*.

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# Endnotes

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1. Consent forms and other informational documents contained language about the potential risks of participation. Given the exchange of monetary incentives, the two primary potential risks were that those students who earn rewards could be targeted for theft or crime by their peers or others; and those low-income students and their parents receiving regular payments from the program could become dependent on the payments and could suffer financial harm after the payments stopped.
2. These modified certificates were given in all cities except Houston, where students were given encouraging letters written by the district program manager.
3. Includes program management salaries, data collection, branding materials and supplies, bank fees, and check processing and shipping costs. Variation in administrative costs is due to program differences such as number of pay periods, number of checks distributed, software needs, program team, etc. Excludes EdLabs costs.
4. Incentives figures include payments made both before and after graduation; administrative costs include only one year of program implementation.