Why Did “Payment-by-Results” Fail? Examining an Incentive Program in 19th-Century English Schools

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Abstract
This paper analyzes a 19th-century English experiment in paying schoolteachers by results. Using primary and secondary sources, this paper examines the explicit and embedded economic arguments that led to the 19th-century payment-by-results program, and uses concepts from behavioral economics, the field that explores the psychological foundations of economic behavior, to understand its unintended outcomes. Previous studies have considered this experiment, but have not couched their analysis in terms of incentives and information problems. Building on recent studies of analogous modern experiments in performance pay, this paper finds important parallels to current policy concerns. The lessons to be learned from the 19th-century English plan address the fundamental relationship between incentives and teacher motivation and the use of economic theory in education policy.

Keywords: Economics of Education, Teacher Evaluation, History

Performance pay for teachers is a recurring and controversial reform strategy in education. Supporters of performance pay agree that replacing the current salary schedule with financial incentives based on test scores will motivate teachers to improve instruction, while opponents argue that this plan will diminish teachers’ intrinsic motivation or lead to “perverse incentives.” The Obama Administration has made it a priority to tie teacher salary to student-achievement data. There are now debates about how best to evaluate and compensate the nation’s teachers and about whether we are even able to measure a teacher’s influence on student achievement (Baker et al., 2010; Rothstein, 2009; Rubin, Stuart, & Zanutto, 2004).

But these debates are not new. Though discussions of merit pay are often rather ahistorical, there have been waves of merit-pay legislation in the U.S. since at least the 1920s (Murnane & Cohen, 1986). In England, merit-pay programs for teachers even date back to the mid-19th century (Nelson, 1987). Almost every implementation of a merit-pay system has been controversial and short-lived. The longest running program, in mid-19th century England, lasted for nearly 30 years but it has been relatively understudied. This paper analyzes this payment-by-results program and its unintended outcomes, including goal narrowing and “gaming,” and how these adverse effects led to fixed-salary systems for teachers, which are viewed by many of today’s education reformers as a prime cause of the achievement gap. Because merit-pay proposals have recurred over time, despite thin evidence for their effectiveness, understanding how these programs originate, especially the economic arguments and assumptions embedded in the proposals, may teach us important lessons about the role of incentives in teachers’ work.
This paper examines the theories and assumptions that led to the “payment-by-results” program in England, which lasted from 1863 to 1890. The focus is on the policy’s origin, including what economic arguments and theories of action were used as support, and how recent advances in incentive theory might help to explain some of the plan’s unexpected outcomes.

While performance pay in 19th-century England was developed due to multiple historical factors—economic and noneconomic—including the rising costs of public education and the desire to improve the quality of instruction for the nation’s poor, this paper argues that the primary reasons for its decline were economic, including implementation failures linked to problems of information, worker motivation, and monitoring.

The literature contains conflicting interpretations of why payment-by-results came about and why it was abandoned, but scant attention has been paid to the economics of incentives. The English Education Commissioner Robert Lowe is often credited with the development of the payment-by-results program, and several biographers have explained the introduction of incentives by investigating Lowe’s own beliefs about political economy (Maloney, 2005; Sylvester, 1974; Winter, 1976). Some scholars have discussed the unintended outcomes of England’s payment-by-results program (Nelson, 1987; Rapple, 1992), but they have not drawn from economic theory. On the other hand, Murnane and Cohen (1986) applied the microeconomics of contracts to explain the failures of various U.S. performance-pay programs since the 1920s. This paper extends their analysis to 19th-century Britain and incorporates recent findings about incentives from the burgeoning field of behavioral economics, which uses psychological knowledge about human behavior to enhance mainstream economic models.

Mode of Inquiry and Data Sources

Using the “old economic history” approach of thick description and analytic narrative, I investigate the theoretical justifications and outcomes of payment-by-results in England. In addition to secondary sources, which include biographies of Education Commissioner Robert Lowe, general histories of 19th-century education, and recent papers on payment-by-results, I examine reports from the various commissions set up by the government to investigate public and private schools during that time. The two most important reports were the 1861 Newcastle Report, which recommended the incentive program, and the 1886 Cross Report, which evaluated payment-by-results. Other primary sources include Lowe’s correspondence, the Revised Code of 1862, and newspaper articles.

Economic Arguments in the Evolution and Decline of Payment-By-Results

In June of 1858, the Newcastle Commission was assembled by the British parliament “to inquire into the state of popular education in England.” In 1861, the Commission recommended that “distinct inducements” be awarded to teachers (Education Commission, 1861, p. 274), and that grants to every school be made conditional on government inspections. These recommendations sparked the educational reforms presented by Robert Lowe in the Revised Code of 1862. Under the Code, one-third of the total grants available to schools were based on examinations by an inspector for students’ performance in reading, writing, and arithmetic, and no grants were awarded for students who attended school for less than 100 days in an academic year (House of Commons, 1861). While payment-by-results originated because of many different concerns about education and society, including the lowly status of teachers, international competitiveness, and the increasing costs of education, the political economy of
Robert Lowe, who drafted the proposal, was central in its design and implementation.

“Selling Education Like a Grocer Sells Figs”: Lowe’s Political Economy

Because Lowe had no professional experience in education and no theory of how to educate, biographers have argued that his “philosophy of education” can best be understood by examining his broader views of economy and society (Sylvester, 1974). Before he became Education Commissioner, Lowe was the vice president of the Board of Trade, emphasizing free-trade principles. As his biographers have noted, Lowe was informed by “an economic perspective that he believed had been handed down to him from Adam Smith” (Maloney 2005, p.2). He believed that England should become more like Scotland in its approach to education, where “they sell education like a grocer sells figs” (p. 38). Like the advocates of market-based education reforms today, Lowe saw parents as consumers and, therefore, as the people best suited to make the decisions about their children’s schools. In line with his effort to bring the laws of political economy to education, Lowe also called for the elimination of teacher licensing, presumably to reduce barriers to entering the profession and to let parents and head-teachers determine what constitutes high-quality teaching.

Some have argued that Lowe’s hidden intention was to cut educational expenditures. But Lowe’s was concerned with efficiency as much as “cheapness”; if costs could not be decreased, the expenditures should be cost-effective. As Lowe himself described his payment-by-results plan:

If it is not cheap it shall be efficient; if it is not efficient it shall be cheap. The present is neither one nor the other. If the schools do not give instruction the public money will not be demanded, but if instruction is given the public money will be demanded... the public will get value for its money. (1862, quoted in Sylvester, 1974, p. 61)

Technical efficiency was one of Lowe’s primary aims, but features of principal-agent theory were also evident, especially in his idea that incentives would induce more work from teachers. Lowe’s reliance on incentives rather than mandates to motivate teachers suggests an approach to policy that arose out of his particular applications of economics to education rather than the general climate.

“Learning Without Understanding”: Goal Narrowing, Gaming, and Rote Learning

The adverse effects of payment-by-results have been discussed in the literature. But how can we understand these effects in terms of economic theory? Lowe’s writings and his design of the Revised Code reveal that he believed the problem with schools originated with teachers who were “shirking”—those who were not working to the best of their abilities. In such cases, incentives could motivate teachers to work harder or to seek out new training to improve their skills. But Lowe did not foresee that incentives could also lead to narrowing the curriculum and “gaming” for results.

Payment-by-results has been accused of narrowing the curriculum to an almost exclusive focus on the three R’s. Another unexpected outcome was “cram learning,” or learning by rote. While Lowe knew that examining students according to standards would have to be “mechanical,” he did not expect “that the teaching preparatory to the examination should be equally mechanical, or that children should learn without understanding” (emphasis added) (Sylvester 1974, p. 93). And teachers would “game” the system by manipulating the marks and grade levels of students to show greater achievement gains on paper for school funding. Recent work in economics helps us to understand the causes of these unintended outcomes.
Campbell’s “Law,” for instance, finds that “the more any quantitative social indicator is used for social decision-making...the more apt it will be to distort and corrupt the social processes it is intended to monitor” (1974, p. 49). Economists studying incentives during the past few decades have come to mixed conclusions about their effectiveness. But at least one consensus has emerged: for simple tasks, piece-rate incentives can be effective, but multi-task jobs require more complex incentive systems (Gibbons, 1998; Holmstrom & Milgrom, 1991; Ladd, 2007; Lazear, 1996). When teachers in 19th-century England were only rewarded for their students’ basic skills in reading, writing, and arithmetic, for the most part science, history, and critical thinking were no longer taught. Teachers also encouraged underperforming students to leave the school before inspection. Such perverse outcomes are less surprising given what is known today about how incentives work.

**Teacher Status and Motivation**

Another purpose of the Revised Code was to raise the status and productivity of teachers. To the extent that salary level indicates social status, the statistics in the Cross Report (1888), which show significant increases in teachers’ salaries, are important to the professionalization of teaching (p. 82). Interestingly, salaries did not rise in proportion to the grants that schools received. Rather, over the 20 years after the passage of payment-by-results, schools adopted fixed salaries for teachers, which did not depend on government grants. This trend evolved as a way of addressing the problems created under payment-by-results (Cross Report, 1888). Like the fixed-salary system that teachers’ unions developed in the U.S. in the mid-20th century, which was created to address issues of fairness and equity (Springer, 2009), 19th-century British schools also chose fixed salaries for teachers over performance-based pay as a way of addressing its shortcomings.

Concerns about teacher satisfaction were raised in the Cross Report, and intrinsic motivation and teacher morale were central to the abandonment of payment-by-results (Nelson, 1987). Recently, economists studying the psychology of incentives have reemphasized the role of intrinsic motivation, which was initially developed by psychologists in the 1970s (Deci, 1985; Deci, 1972). Studies have found that extrinsic rewards, such as salary based on performance, may crowd out workers’ intrinsic motivation (Frey, 1997; Kreps, 1997), unless these issues are explicitly considered in the incentive plan’s design (Muralidharan & Sundararaman, 2011).

**Conclusion & Implications**

Payment-by-results was instituted for many social, political, and economic reasons. The Cross Report exposed the shortcomings of payment-by-results, which was abolished in 1890. In addition to narrowing the curriculum, providing incentives to focus on what would result in increased funding rather than increased learning, and heightening the sense of uncertainty and risk in schools, the plan had caused the stratification of students across schools, ultimately hurting the poor children that it was in part intended to serve.

Understanding why this program failed may help to inform today’s proposals to reform teacher pay. Other relevant concerns are the extent to which teachers value “psychic” rewards as much as extrinsic ones (Lortie, 1975), and, in an era when many reformers are trying to dismantle the salary schedule, how schools came to prefer the fixed-salary schedule over alternative pay systems. Furthermore, education-policy researchers currently studying performance pay may benefit from situating their work in its long history. Despite our better understanding of incentives, many of the elements of the 19th-century payment-by-results plan...
are found in current policies. While the specific historical context and inadequate data systems of the time certainly limit the extent to which comparisons can be made, there are still important parallels and lessons to be learned about the fundamental relationship between incentives and teacher motivation and the use of economic theory in education policy.

References


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