

Women and Quality in American Public Education

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I would like to sincerely thank Dr. Helen Ladd for patiently advising me throughout this research project. I would also like to acknowledge the contribution of Dr. Lee Craig for his assistance in helping me locate various historical data. I would also like to thank Ms. Jennifer Socey for providing support throughout this endeavor. Finally, I would like to acknowledge my mother, Pamela C. Kamody, whose long and tireless service as a public school teacher inspired this project.

I: Introduction

Public schools are one of America's greatest assets and they are one of the key components of a successful democracy. High quality public schools ensure that every child, regardless of race, gender, location, or social class can receive a good education that will prepare him or her to become successful in the world outside of the classroom.

In recent years, there has been a growing concern about the decline of America's public school system. Parents, teachers, and government officials bemoan America's falling test scores and relative lack of knowledge compared to students from other countries. There have been broad calls for dramatic reforms from both sides of the political aisle, and from concerned parents and tax payers all across the country. Although many are concerned about the perceived deterioration in quality of the public schools, this is an extremely difficult area to study quantitatively. It is challenging to measure the degree of this decline in school quality and it is especially difficult to ascertain the source of the problem. For example, even if a study can show that children have learned less by the tenth grade than their counterparts thirty years ago, it is extremely challenging to determine if this is the result of the schools and teachers or the result of the students' environment and parents. Furthermore, even if researchers can isolate the schools as the culprit for weaker student performance, what aspect of the schools is causing this decline? Is it the teachers, the administrators, the lack of spending, the attitudes within the schools, or is it the students themselves? While this is a very complicated issue, it is an important one to study so that we can ascertain how to best preserve our democratic tradition of providing every child with a high quality public education and the corresponding chance to succeed.

One of the essential, yet often overlooked reasons for the decline in public school quality is the expanding job opportunities for women. A generation ago, many talented female college graduates became teachers because there were very few other career options available to them. Since that time, the quantity and quality of opportunities for women in other professions has dramatically increased. These new opportunities for women have resulted in a decline in the overall quality of women entering the public education profession. Many women who might have become teachers a generation ago, now enjoy higher paying professions in the law, finance, medicine, and a wide variety of other fields. Women who are intelligent and highly motivated can make much more money while enjoying greater prestige and respect in professions other than teaching.

This presents a challenge for America's public schools. Since they are now deprived of a captive labor source in the form of women, they must now compete with other, higher paying occupations for the most qualified college graduates. Although women have been moving away from traditional occupations like teaching and nursing for thirty years, America's public schools have not yet devised a strategy to effectively compete in this new environment. Schools continue to offer relatively low salaries without the opportunity to advance based upon merit. Instead of providing financial rewards to the highest performing teachers, these antiquated policies tie teachers' compensation to variables such as experience and graduate work, which are not positively correlated to teacher performance. Therefore, the best teachers have little financial incentive to remain in teaching, while the most highly qualified college graduates frequently pursue higher paying and more prestigious professions. Until the public schools adjust to the new labor market by offering merit pay and higher salaries, the public schools, and the students they serve, will not reach their potential.

II: Expanding Opportunities for Women

Teaching is not nearly as financially lucrative or professionally prestigious for women as it was a generation ago, because American women now have the freedom to pursue any career imaginable. This was not the case, however, even thirty years ago, when many women, who represent half of the nation's potential labor force, were coerced by a gender-biased social and educational system into becoming teachers, nurses, library assistants, and other pursuing other jobs that were considered appropriate for women. While some women did break through this gender barrier by entering other professions, most women simply pursued careers in the aforementioned fields. Consequently, a number of highly competent women who, today, might choose to become financial analysts, lawyers, or PhD's, became teachers. As education economist Helen Ladd explains, “. . . there has been a profound shift in the overall labor market for women in the last half-century that has resulted in a lessening of the barriers to women in the general labor market and a decrease in the attractiveness of teaching.”¹

This trend of expanding employment opportunities for women can be exemplified by the number of female students enrolled in law school, a field that was traditionally closed to women. In 1970, 3542 women started law school as first year students, comprising 10% of the national first year law class.² Over time, both the percentage of women and the total enrollment in law schools increased, resulting in a dramatic increase in the presence of women in the legal profession. By 1980, women made up 36% of America's first year law students, and the total number of first year students had increased by 8000 students from 1970.³ In 1990, women

¹ Helen Ladd and Janet Hansen, eds. *Making Money Matter*, (National Academy Press, 1999), 41.

² “First Year Enrollment in ABA Approved Law Schools 1947-2001.”

<<http://www.abanet.org/scripts/printview.jsp?Ref=http://www.abanet.org/legaled/statistics>>.

³ “First Year Enrollment in ABA Approved Law Schools 1947-2001.”

represented 42% of 44,104 first year law students, which had increased from 42,296 in 1970.⁴ Finally, by the year 2000, women made up 49% of the 43,518 first year JD students in the United States.⁵ Therefore, as the percentage of women entering the teaching profession was declining, women were making up an increasing percentage of America's legal students. As women were leaving relatively low-paying fields, like teaching, they were entering relatively high-paying fields, such as the law.

As women broke down pre-existing career barriers and entered more highly paying professions, the relative economic attractiveness of teaching declined. As Flyer and Rosen point out in "The New Economics of Teachers and Education," ". . . the real wage rate for a unit of teaching capital has actually declined relative to the effective wage rate for college graduates."⁶ Even though salaries for teachers have increased over the past 30 years, they have fallen relative to the salaries that college educated women could receive in other occupations.⁷ As Eric Hanushek and Steven Rivkin explain,

" . . . an extremely important factor has been the change in the overall labor market for women, the dominant component of the teaching force. Particularly over the post-World War II period, teaching has moved from one of the most attractive occupations for women to a much lower position in terms of pecuniary rewards and, perhaps, status. This movement, which includes the lessening or elimination of a variety of barriers to women in the general labor market, implies dramatic shifts in the market for teachers. . . ."⁸

⁴ "First Year Enrollment in ABA Approved Law Schools 1947-2001."

⁵ "First Year Enrollment in ABA Approved Law Schools 1947-2001."

⁶ Fredrick Flyer and Sherwin Rosen, "The New Economics of Teachers and Education.," *Journal of Labor Economics* 15, no. 1 (1997): 119.

⁷ Eric A Hanushek. and Steven G. Rivkin, "Understanding the Twentieth-Century Growth in U.S. School Spending," *The Journal of Human Resources* 22, no. 1: 35.

⁸ Hanushek and Rivkin, 38.

Therefore, as women have had greater freedom to pursue other career options, the relative economic attractiveness of teaching has declined.

As the relative economic attractiveness of teaching has eroded, the percentage of female college graduate who enter the teaching profession by the age of 29 has also decreased, indicating that fewer of today's female college graduates, who can choose from a plethora of attractive career options, are entering the teaching profession.⁹ In 1970, over 40 percent of female college graduates entered the teaching profession.¹⁰ Twenty years later, in 1990, fewer than ten percent of female college graduates were choosing to become teachers.¹¹ Furthermore, this reduction in the percentage of college-educated females entering education was not set off by an increase in the amount of men pursuing careers as teachers, as teachers continue to be predominantly female.¹² In 1974, approximately 25% of all male and female college graduates completed a teacher training program.¹³ By 1985, this percentage had fallen to 12%. Clearly, the teaching profession was simply not as attractive of an option for college graduates as it had been a generation ago.

As the twenty-first century begins, these trends do not seem to be reversing themselves. In fact, teachers' salaries continue to be low relative to other professions. The Chart "Female Teacher vs. Female Lawyer Weekly Median Income," indicates that the gap between teaching and the legal profession, a career that more and more young women are choosing to pursue, is not narrowing. If anything, the difference between the median weekly income earned by teachers and the weekly median income earned by lawyers is increasing. This indicates that we

⁹ Hanushek and Rivkin, 38

¹⁰ Flyer and Rosen, 122.

¹¹ Flyer and Rosen, 122.

¹² Flyer and Rosen, 122.

¹³ Dale Ballou, "Do Public Schools Hire the Best Applicants?," *The Quarterly Journal of Economics* 111, no. 1 (Feb. 1996): 100.

cannot expect the trend of fewer highly qualified women choosing to pursue a career in teaching to improve without policy intervention, as the economic incentive remains for young women to choose careers other than teaching.

III: Declining Quality of Teachers

It is important to think about the quality of the female college graduates who are now choosing to enter more highly paying professions instead of becoming teachers. Because there are rigorous entrance exams for admittance into the legal profession, for example, one could expect that many of the women who are pursuing such careers are highly academically competent. There is a great deal of evidence that the current educational system is not attracting highly qualified men or women, as measured by their academic ability, into the teaching profession. A recent study by *Education Week* found that of the top quartile of 1992-3 college graduates, only 14% entered teacher training programs, 12% actually taught, and 11% stayed in teaching through 1997¹⁴ Furthermore, only 14% of America's education majors had SAT or

¹⁴ "Meeting the Highly Qualified Teaching Challenge," *The Secretary's Annual Report on Teacher Quality*, 2002.

ACT scores in the top 25%.¹⁵ Not only does the America's education system do a poor job of attracting the brightest teachers, it also does a very poor job of retaining them. Research has demonstrated that the more academically capable teachers have a shorter teaching career than those teachers who show less academic potential.¹⁶ Also, those teachers who have greater academic promise also have a greater opportunity cost because their skills and competency could be rewarded highly in professions that took such indicators of potential into account. Studies have also demonstrated that those teachers with higher opportunity costs stay in teaching for a shorter duration of time.¹⁷

It wouldn't matter if the most academically gifted college graduates chose to spend little or no time teaching if academic ability was not a good predictor of teacher effectiveness. However, several studies document a positive correlation between teachers' academic abilities, as measured by standardized tests, and teacher quality. It would seem to make sense that, on the aggregate, 10,000 people with SAT scores of 1500 would be better teachers than 10,000 teachers who scored 900 on the SAT, as the higher scoring students, on average, would be expected to have a superior comprehension of the material and be able to explain it better to their students. However, some people who are academically gifted are not good teachers, and this paper is not asserting that every individual with a higher SAT score will be a better teacher than every individual with a lower one. Rather, on the average, one would expect people with higher SAT scores to perform better as teachers. As Ballou points out, "While SAT scores do not directly measure teaching effectiveness, it seems reasonable to believe that scores on this test are

¹⁵ "Meeting the Highly Qualified Teaching Challenge."

¹⁶ Mark R. Gritz and Neil D Theobald, "The Effect of School District Direct Spending Priorities on Length of Stay in Teaching," *The Journal of Human Resources* 31, no. 3 (Summer, 1996): 486.

¹⁷ Richard J. Murnane and Randall J Olsen, "The Effects of Salaries and Opportunity Costs on Length of Stay in Teaching: Evidence from North Carolina," *The Journal of Human Resources* 25, no. 1: 106.

correlated with teaching effectiveness.”¹⁸ Indeed, the academic research on this topic supports this hypothesis. For example, in a 1986 study, Strauss and Sawyer demonstrated that the students of teachers with higher NTE scores were able to develop greater reading and writing skills.¹⁹ Furthermore, Ayers and Qualls have established a positive correlation between NTE scores and SAT scores.²⁰ Therefore, it seems reasonable to conclude that higher SAT scores would make teachers more effective as measured by gains in their students’ academic performances.

However, while there seems to be credible evidence on the correlation between teacher academic ability and teacher performance, there have been relatively few studies indicating what has happened to this measure of teacher ability over time. In fact, when I initially embarked upon this project, I had hoped to obtain national or state-wide SAT or ACT data for teachers. I was planning to use this data to demonstrate that teacher quality, as measured by standardized tests, had declined over the past few decades, as more highly qualified women started careers in more lucrative professions. However, during the course of this research project, I discovered how challenging it is to obtain SAT data. Much of this data is highly confidential and the organizations that keep track of such things as SAT scores are very unwilling to release this data to undergraduate students. After discussing these research problems with Dr. James Wycoff, I realized that, as an undergraduate student, I simply did not have the leverage to convince these organizations to allow me to see the data. A glance at the footnotes of the few papers where SAT or ACT data was analyzed reveal the unique circumstances that permitted the researcher to obtain it. For example, in Ronald Ferguson and Helen Ladd’s article, “How and Why Money

¹⁸ Ballou, 199

¹⁹ Todd R. Stinebrickner, “A Dynamic Model of Teacher Labor Supply,” *Journal of Labor Economics*, 19, no. 1 (Jan. 2001): 205

²⁰ Stinebrickner, 205

Matters: An Analysis of Alabama Schools,” there is some discussion of teacher standardized test scores. The footnote documenting the source of this data says that, “Access to these data was arranged by state officials during the summer of 1992 to facilitate Ferguson’s participation in a court challenge to the constitutionality of Alabama’s system of public schooling.”²¹ Therefore, although I have no data to present on SAT scores declining, I am simply asserting that as more financially rewarding careers opened up to women, many of those females who might have entered the teaching profession a generation ago would now pursue careers in more prestigious, higher paying occupations. As this process occurred, to some extent, the academic ability of college graduates entering the teaching profession must have declined.

There are various ways that teacher quality can be measured. While teachers perform a variety of functions, such as grading, counseling, coaching, and dealing with parents, the most important element of a teacher’s job is, simply, teaching. Therefore, it would make sense to measure teacher quality by looking at the increase in the academic performance of a teacher’s students over the course of the academic year. Eric Hanushek’s simple definition of teacher quality seems sufficient and reasonable for the purposes of this paper: “. . . good teachers are the ones who get large gains in student achievement for their classes; bad teachers are just the opposite.”²² Therefore, all forthcoming references to teacher quality will refer to the gain in student performance over the academic year that are attributable to the teacher.

Unfortunately, measuring teacher quality by looking at student performance is not quite as easy as Hanushek’s quote might make it out to be. The largest problem with this method of measuring teacher quality is separating the role of the teacher from the role of the student’s

²¹ Ronald F. Ferguson and Helen Ladd, “How and Why Money Matters: An Analysis of Alabama Schools,” in *Holding Schools Accountable*, ed. Helen Ladd (Brookings Institute Press, 1996), 274.

²² Eric A. Hanushek, “Teacher Quality,” in *Teacher Quality* Lance T. Izumi and Williamson M. Evers, eds. (Stanford: Hoover Institution Press, 2002): 3.

inherent academic ability and socio-economic situation in producing gains in the student's knowledge. The first measurement technique that is used to try to distinguish the role of teacher quality is looking at year-to-year improvements in students' academic abilities.²³ As Hanushek explains,

“ . . . it is common sense that nobody should be held responsible for bad performance by others. For example, if a teacher starts with low-performing students but does a terrific job of improving their performance, she should not be penalized if the resulting performance level is still lower than, say, the national average. Similarly, a teacher starting with a high-performing group should get credit for her job in improving them but not for their initial performance. The implication is that any measurement of teacher quality should focus on the teacher's addition, or value added, to student learning. . . .”²⁴

However, looking at gains in student academic performance rather than absolute levels still cannot completely separate the confounding influence of teachers versus the student's environment. For example, students with low levels of academic ability might not be able to gain as much knowledge in one year as those with a higher initial level of academic achievement.²⁵ Therefore, another technique for measuring gains in student achievement is to use regression analysis to compare the actual growth in student academic performance to the expected rate of growth, given each student's socio-economic background and previous

²³ Charles T. Clotfelter and Helen Ladd, “Recognizing and Rewarding Success in Public Schools,” in *Holding Schools Accountable*, ed. Helen Ladd (Brookings Institute Press, 1996): 26.

²⁴ Eric A. Hanushek and Margaret E. Raymond, “Sorting Out Accountability Systems,” in *School Accountability*, Williamson M. Evers and Herbert J. Walberg, eds., (Hoover Press, 2002), 87.

²⁵ Clotfelter and Ladd, 26.

academic performance.²⁶ This seems as though it would be the most effective way to capture improvements in student performance that can be attributed solely to the teacher.

Another problem with measuring teacher quality with student performance is the issue over how students' learning should be tested. There are many arguments against standardized testing. Even those who accept that standardized testing is simply a necessary component of any standards-based educational program admit that it is difficult to know what to test, how well the test actually measures what is being tested, and how the results from standardized tests should be interpreted. Another concern surrounding the standardized testing debate is whether teachers would have an incentive to teach to the test in order to improve student performance (and, consequently, their own performance), or if teachers might even be willing to help students cheat on the test.²⁷ While these are real concerns, it seems as though measuring student performance through standardized testing is the best way to measure student achievement because of its relative objectivity and ease of administering. It is also prudent to measure teacher quality through gains in student performance because improving the academic knowledge of students is the most important objective of teachers.

IV: The Importance of Teacher Quality

Of course, this discussion would be a moot point if the quality of teachers was unrelated to student outcomes. In 1966, the Coleman report, a large and highly influential study of public education in America, concluded that teacher and school factors were almost completely irrelevant to student outcomes, and that the familial and socio-economic background of the

²⁶ Clotfelter and Ladd, 26.

²⁷ Clotfelter and Ladd, 25.

students was the crucial variable.²⁸ The conclusions of this paper were accepted by many in the educational policy community. However, in later decades new studies showed that school and teacher qualities were very important variables in the production of education.

First of all, the new studies make it clear that teachers are a crucial variable to a student's academic success. Although the differences between teachers may be hard to measure, there are clearly some teachers who are more effective than others.

One of the more important studies on this issue is Eric Hanushek's meta-analysis of ninety separate papers on the importance of various inputs into the education production process²⁹. This paper is often interpreted as concluding that school resources are not important in determining student outcomes. However, a more sophisticated analysis of this work would indicate that Hanushek is stating that the current way that schools utilize resources is not conducive towards improving student achievement. Hanushek finds that paying teachers more for greater years of experience is an inefficient use of resources, as only nine percent of the studies he analyzes show a statistically significant, positive correlation between years of experience and student performance³⁰. While Hanushek points out that simply enhancing a school's finances is unlikely to provide drastic improvements in student performance, he does find one specific input measure that is positively correlated with student performance: teacher quality as measured by teacher test scores³¹. As Hanushek explains, "Of all the explicit measures that lend themselves to tabulation, stronger teacher test scores are more consistently related to higher student achievement. . . ."³² Therefore, Hanushek does indeed claim that

²⁸ Clotfelter and Ladd, 25-6.

²⁹ Eric A. Hanushek, "Assessing the Effects of School Resources on Student Performance: An Update," *Educational Evaluation and Policy Analysis*, 19, no. 2 (Summer 1997): 132.

³⁰ Hanushek, "Assessing," 143.

³¹ Hanushek, "Assessing," 144.

³² Hanushek, "Assessing," 144.

resources cannot do much to improve school quality if they continue to be spent on increasing various inputs that are not highly correlated with student performance. However, he also finds that teacher quality, as measured by teacher test scores is more highly correlated with enhanced student performance than many other measurable school inputs.

A sampling of the recent research further illustrates the great importance of teacher quality on student learning. In their study on Alabama schools, Ferguson and Ladd find that “The skills of teachers as measured by their test scores exert consistently strong and positive effects on student learning despite the fact that the data are limited and test scores are an imperfect measure of teachers’ skill, which suggests that teacher skills are extremely important.”³³ Additionally, Hamilton Lankford and James Wyckoff in their study “The Changing Structure of Teacher Compensation, 1970-1994” find that “The importance of high quality teachers is clear from the research finding that the quality of teachers is one of the few classroom characteristics that is consistently associated with increased learning by students. High quality, effective teachers do matter in the determination of educational outcomes.”³⁴ Finally, Hanushek, Rivkin, and Kain argue in their study, “Teachers, Schools and Academic Achievement” that, “[There are] large differences among teachers in their impacts on achievement. Our estimates, which are based on just the within school variations in teacher quality, reveal the effects of teacher quality to be substantial even ignoring any variations across schools. They indicate that having a high quality teacher throughout elementary school can substantially offset or even eliminate the disadvantage of low socio-economic background.”³⁵ Hanushek, Rivkin, and Kain conclude that, “Teacher quality is a very important determinant of

³³ Ferguson and Ladd, 289.

³⁴ Hamilton Lankford and James Wyckoff, “The Changing Structure of Teacher Compensation, 1970-1994,” *Economics of Education Review* 16, no. 4 (1997): 378.

³⁵ Steven G. Rivkin, Eric A. Hanushek, and John F. Kain, “Teachers, Schools, and Academic Achievement,” (Unpublished paper: July 2002), 3.

achievement. Systematic teacher differences drive substantial differences in student achievement.”³⁶ These studies refute the conclusions of the Coleman report, finding that the quality of teachers exerts an enormous influence over students’ academic achievement. In fact, these studies indicate that teaching is not only more important than a student’s background, but that high quality teachers can actually help a student overcome socio-economic disadvantages.³⁷

In addition to this evidence supporting the significance of teacher quality are the findings that show that teacher quality is not only important, but is the most significant educational input that matters for student performance. This finding is especially important because educational policy-makers are constrained by financial budgets and must figure out the most cost-efficient ways to improve school quality. According to these studies, the most important thing that policy-makers can do to improve the quality of America’s public education is to improve the quality of the teachers. This is highly significant, because in the past, policy solutions have focused more on other variables, such as lowering class sizes. However, in light of the importance of teachers, it seems as though these scarce educational resources have been spent inefficiently and would be better allocated so as to attract and retain high quality, academically gifted teachers.

Studies have found that teacher quality, as measured by teacher test scores, has more of an effect on educational outcomes than the percent of teachers with master’s degrees,³⁸ the average amount of teacher experience within a school,³⁹ class size,⁴⁰ and spending on instructional materials.⁴¹ The differences between the contribution to student achievement

³⁶ Rivkin, Hanushek, and Kain, 31.

³⁷ Hanushek, “Teacher Quality,” 3.

³⁸ Ferguson and Ladd, 278.

³⁹ Rivkin, Hanushek, and Kain, 21.

⁴⁰ Rivkin, Hanushek, and Kain, 28-9.

⁴¹ “Meeting the Highly Qualified Teachers Challenge,” 6

between teacher quality and these other inputs were oftentimes found to be large. For example, Ferguson and Ladd found that a one-standard deviation increase in teacher test scores would improve student test results by four times as much as a one-standard deviation increase in the percentage of teachers holding a master's degree.⁴² These results are crucial for directing the resource allocation of America's public schools. As we will see, despite the evidence for the importance of teacher quality, money has generally not been allocated towards attracting and retaining academically bright, high performing teachers.

V: Problems with the Current Incentive System

In the current American public educational system, teachers can typically receive a salary increase in one of two ways: by gaining years of experience within the system or by attaining a master's degree. The problem with this incentive system is that teachers are encouraged to either stay in the system or attain a master's degree, even though these attributes are not conclusively associated with improved student performance.⁴³ The teacher qualities that receive high pay are not the ones associated with high student outcomes. Not only does the system fail to reward and encourage high-quality teachers, it may actually exacerbate the situation by encouraging complacency and inducing low-performing teachers to remain in the profession in order to collect the increased financial rewards associated with longevity.⁴⁴ The uniform salary scale gives teachers no incentive to improve their performance; it only encourages them to gain more experience and education, even though this will not necessarily make them more effective teachers.

⁴² Ferguson and Ladd, 278

⁴³ Ladd and Hansen, 9.

⁴⁴ Rivkin, Hanushek, and Kain, 32.

The second major problem with current education system is the barrier to entry caused by the overly rigid teacher certification process. Although the process varies on a state-by-state basis, oftentimes attaining certification requires taking a minimum number of education classes, passing tests, and pursuing additional coursework requirements.⁴⁵ Many education-policy developers believe that these certification requirements help to improve the quality of the teaching profession. However, they actually act as a barrier to entry into the teacher profession, restricting the supply of new teachers. Significantly, the teachers who would be most deterred by intense certification requirements would be those teachers with the highest academic abilities. College graduates who are the most academically gifted have the highest opportunity cost because there are many high-paying professions that they could pursue. Therefore, onerous certification requirements will prevent the most capable potential teachers from seeking certification because college graduates with the highest opportunity costs would not want to invest the time, money, or effort to complete these rigorous requirements, particularly when the profession they are considering entering pays relatively low wages.

Unfortunately, two of the recently proposed reforms to the teacher compensation system would exacerbate the problems that already exists and further deter highly qualified individuals from entering the teaching profession. One of these reform proposals is to mandate that all teachers earn a master's degree.⁴⁶ This seems like an odd policy recommendation giving the largely ambiguous evidence about the efficacy of master's degrees. Much of the evidence reports that master's degrees have, at best, only a small effect on teacher quality. Furthermore, requiring all teachers to obtain a master's degree would reduce the entry of highly-qualified

⁴⁵ "Meeting the Highly Qualified Teachers Challenge," 15.

⁴⁶ Dale Ballou and Michael Podgursky, "Reforming Teacher Preparation and Licensing: What Is the Evidence?," *Teachers College Record* 102, no. 1 (Feb 2000): 6.

individuals into the education system, as their high opportunity costs would make it impractical for them to invest in further education to enter a low paying profession.

A second proposed reform is to increase the requirements for teacher certification. This is the policy recommended by President Bush's "No Child Left Behind" educational plan.⁴⁷ Bush's proposal includes increasing the barriers to entering the education system by strengthening the educational requirements for teachers, particularly by augmenting the amount of coursework required in teachers' areas of instruction. While it might initially seem meritorious to have teachers learn about the area that they will teach, this has not been linked positively to teacher effectiveness. Instead, teacher quality, as measured by standardized test scores, has been linked with teacher quality, and any effort to increase the already rigid requirements potential teachers need to fulfill to enter the profession will simply deter the most academically gifted college graduates from entering the teaching profession.⁴⁸

Therefore, the current teacher salary system does not provide the correct incentives for attracting high quality teachers into the profession. The most academically able teachers are also deterred from entering the industry by the demanding certification requirements. Reforms that increase the amount of education that a teacher needs to obtain will only drive the most highly-capable individuals further away from the teaching profession. As Hanushek points out, any reform that increases barriers to entry will only put a ceiling on the quality of the pool of perspective teachers.⁴⁹

VI: Reforms to Attract High Quality Teachers

⁴⁷ "Meeting the Highly Qualified Teachers Challenge."

⁴⁸ Hanushek, "Teacher Quality,"4.

⁴⁹ Hanushek, "Teacher Quality,"4.

While the reforms suggested above might actually make it more difficult for public schools to recruit and retain high-quality teachers, a variety of other proposals would actually affect the incentive structure of the schools, in the hopes of encouraging more highly qualified teachers to enter the profession and providing an incentive for the best teachers to continue teaching. Some of these plans include: school based incentives, merit pay for teachers, competency pay, and higher salaries. While each of these plans has its own unique attributes and drawbacks, these policies seem the most promising way for America's education system to be able to attract high-caliber teachers. A general discussion of the advantages of a reformed incentive system will follow, with each of the specific proposals to be discussed in turn.

Incentive Systems Within the Schools

For years, education policy had been focused on improving the inputs, such as lowering teacher-pupil ratio, buying new equipment, and updating technology. Recently, some policy experts have been recommending a switch to an emphasis on outputs, particularly on the academic gains made by students. Accompanying this shift in focus to student achievement has been a new emphasis on the potential importance of incentives within the education system. From an economic perspective, it is almost shocking how little the current incentives that teachers face are aligned with improving student outcomes. It only makes sense that to improve student outcomes, financial incentives must encourage teachers to work diligently towards this goal. As Eric Hanushek points out, "If the objective is to improve student performance, student performance should be the focal point of policy."⁵⁰

However, many problems can accompany the employment of an incentive program. The details of any incentive plan are crucial, as a poorly-designed incentive plan can end up producing deleterious side-effects. A second problem, as discussed earlier, is that the incentives

⁵⁰ Hanushek, "Teacher Quality," 1.

would ideally be tied to student achievement, but student achievement is inherently difficult to measure. And even if a standardized test could be created to accurately capture gains in student knowledge over a year, there is no perfect way to distinguish what percentage of these effects should be attributed to the teacher. A third drawback is that the magnitudes of any rewards doled out by the incentive plan must be carefully considered. While large financial rewards will provide the largest change in behavior, they will also provide a strong incentive for people to cheat or manipulate the data involving student performance.⁵¹ For example, if teachers are given large bonuses for student performances on tests, they would have a strong reason to teach to the test, or even help the students during the test in order to deliberately raise students' scores.

Consequently, designing and implementing any incentive plan must involve a well-thought out and carefully considered process, as there are many difficulties that could arise from the implementation of an incentives system. It is also important for these incentive systems to have a strong sense of legitimacy and for students, parents, and educators to believe that the attributes being measured and rewarded are indeed related to student achievement. This has been problematic in the past, largely because of the sharp teachers' union resistance to any incentives-based program. In spite of all these potential hurdles and problems, the benefits that could result from a switch to an incentives-based approach warrant the risks involved in the switch from the current system.

The main problem in assessing merits of the various types of incentives systems is the lack of genuine experimental data that we have about them. While some of the various incentive systems have been implemented in real life, frequently they have been abandoned after only a few years, providing ambiguous results of programs' effects. Also, many of the incentive plans have been implemented across an entire state at the same time, eliminating the opportunity to

⁵¹ Clotfelter and Ladd, 57.

observe changes in student performance due to the incentive system alone.⁵² Since our schools are such an important component of the American economic system and because a move to an incentives-based program offers the best hope for attracting high-quality teachers, more rigorous experiments of the affects of these programs need to be conducted.⁵³ More studies on each of the incentive systems need to be performed before we be more certain of their actual effects. Using the theoretical knowledge and the practical evidence that we do have, I will now discuss the merits and drawbacks of the various approaches and consider, based on the evidence, which approaches could do the most to attract high-quality teachers into America's schools.

School-Based Incentive Systems

School based incentive systems aggregate student test scores to the school level and typically provide a reward to all teachers and staff within the highest performing schools. Over the past decade, school-based incentive systems have been established in Dallas, Kentucky, North Carolina, and South Carolina.⁵⁴ Usually, school performance is measured by using student test scores, although there are different ways that these scores can be analyzed. Some of these various methods are: averaging student test scores, comparing actual improvements in students' knowledge over a year versus the expected increases in knowledge, and measuring the amount that the school itself has contributed to the students' yearly gains in achievement.⁵⁵ Ladd considers the last approach, which is referred to as the "value-added" method to be preferable because it doesn't inherently penalize schools with larger percentages of students from poor families, and because this method attempts to determine what percentage of the gains in student

⁵² Eric A. Hanushek., "Comments on Chapters Two, Three, and Four," in *Holding Schools Accountable*, ed. Helen Ladd (Brookings Institute Press, 1996): 129.

⁵³ Hanushek, "Teacher Quality," 10.

⁵⁴ Helen Ladd. "School-based Educational Accountability Systems: the Promise and the Pitfalls," *National Tax Journal*, 54, no. 2 (June 2001).

⁵⁵ Ladd.

achievement are the result of school-based factors, rather than intrinsic student, family, or community characteristics.⁵⁶ The value-added method is still not perfect. It is difficult to decide what student and community factors should be included in the analysis and what weight should be given to these factors. This method can also involve complicated mathematical models, making it more difficult for parents and community members to understand the results. Nonetheless, in spite of its potential pitfalls and complications, the value-added method is still the preferred approach.

Dallas is one of the school systems that has utilized a value-added approach, and its system is slightly controversial because it considers race to be one of the innate student characteristics that contributes to student achievement gains.⁵⁷ The Dallas model allows a rough analysis of the effectiveness of the incentive system to be made by comparing the differences in the performance of the Dallas students to those students educated within other Texas districts that did not implement the new school-based incentives. Ladd has shown that the Dallas system has induced larger gains in student performance among white and Hispanic students than other comparable urban Texas districts that do not employ the incentives approach.⁵⁸ However, many of the gains in student achievement were made in the first year of the program, before the new incentive-structure was fully implemented, which might indicate that the program failed to affect the quality of the school system in the long-run.⁵⁹ Additional research will need to be done to ascertain if the Dallas students continue to attain growths in achievement or if student performance remains stagnant in spite of the new incentives.

⁵⁶ Ladd.

⁵⁷ Ladd.

⁵⁸ Clotfelter and Ladd, 30.

⁵⁹ Ladd.

Supporters of school-based incentives argue that they are more effective than merit pay for teachers because everyone within a school is rewarded, reducing the morale problems that can arise in merit-pay systems.⁶⁰ They also argue that rewarding all teachers and personnel within a high-performing school will encourage co-operation and lead to a more hospitable learning environment.⁶¹ Finally, supporters of the school-based incentive approach argue that the school is the appropriate unit of analysis because schools, not teachers, control the resource allocation within a school and can adjust this allocation in order to enhance student performance.⁶²

However, there are potential problems with the school-based incentive structures as well. First of all, there is an incentive for teachers to “free ride” off of the performance of others, since the student achievement scores are aggregated at the school level.⁶³ Teachers do not have as much of an individual incentive to work hard “because all teachers win an award regardless of their contribution to the overall effort”.⁶⁴ Secondly, morale problems can also plague school-based incentive systems, as teachers might become frustrated if they are employed in a school that continually fails to receive an award. This can be quite damaging if the teachers who are highly competent realize that they would have a higher chance of receiving an award in a better performing school and then transfer to these higher performing schools.⁶⁵ This can actually exacerbate the problems that low-performing schools already encounter in trying to attract highly competent teachers. Finally, it may be unfair to hold individual schools responsible when school districts still control the distribution of resources and control many of the policies that the

⁶⁰ Clotfelter and Ladd, 46.

⁶¹ Ladd.

⁶² Ladd.

⁶³ Ladd.

⁶⁴ Clotfelter and Ladd, 46.

⁶⁵ Ladd.

schools much follow.⁶⁶ If schools are going to be held accountable, they must also be given the ability to manage their schools and their resources independently school district.

Therefore, there are a variety of potential positive and negative consequences associated with the implementation of a school-based incentive system. Furthermore, because all teachers within a school are rewarded or punished collectively, it is questionable as to whether this system would encourage the most highly-qualified teachers to enter or to remain in the teaching profession. If anything it seems like school-based incentive systems could lead to a concentration of the best teachers within the best schools, which could exacerbate the inequities within the public education system. However, more studies need to be done on the various school-based incentive systems to determine the magnitude of their effect on student outcome and to try to ascertain if they have any positive or negative effect on teacher quality.

Competency Pay

Competency pay involves paying teachers for acquiring skills or knowledge that are thought to be essential for high-quality teaching.⁶⁷ This might include paying teachers to learn more about their subject area, to receive instruction on a new teaching strategy, or to use computerized programs to enhance classroom learning. Competency pay shows more promise than the current salary system, because it correlates financial incentives so as to encourage teachers to acquire greater knowledge, and to strive to learn skills that have been associated with high quality teaching⁶⁸. Allan Odden points out that many private sector businesses have implemented successful competency based systems where employees are “paid on the basis of the skills and competencies they develop that enable them to perform many job tasks as members

⁶⁶ Ladd.

⁶⁷ Ladd and Hansen 174-5.

⁶⁸ Allan Odden, “Incentives, School Organization, and Teacher Compensation,” in *Rewards and Reform: Creating Educational Incentives That Work*, Susan Fuhrman & Jennifer O’Day, eds. (Jossey-Bass, 1996): 235.

of work teams.”⁶⁹ Such an approach could be applied to teaching by giving teachers a financial incentive to learn about things that have been shown to increase teacher performance. Odden believes that competency pay could help create a “multiple-skilled teacher workforce” where teachers would be qualified not only to teach, but to counsel students, develop curriculum, and teach in multiple subject areas⁷⁰. Odden hopes that encouraging teachers to enhance their skills outside of the classroom could lead to a more de-centralized management structure where teachers would have more authority over their classrooms and their schools⁷¹.

While competency pay makes more sense than paying teachers more for experience or for holding master’s degrees, which have been shown to have little or no correlation with teacher performance, it still may not provide enough of an incentive for teachers to actually improve their classroom skills. If competency pay is not combined with a merit pay system, it still would not provide the incentive for teachers to transform their newly acquired knowledge into effective teaching. Only a handful of districts have implemented competency-based pay and, consequently, it is difficult to state the degree to which competency pay could be effectively used to increase teacher quality and student performance.

Merit Pay

Merit pay involves paying more to teachers who get results, as measured by their students’ performance on standardized tests. There are many detractors of merit pay systems, including teachers, unions, and economists. Because many merit pay systems did not endure because of the potential problems that the implementation of a merit pay program might bring, many people have ruled out merit pay as a potential solution to the problem of attracting highly qualified teachers and improving America’s schools. As Clotfelter and Ladd explain,

⁶⁹ Odden, 237.

⁷⁰ Odden, 238.

⁷¹ Odden, 249.

“Experience show that financial incentive programs directed toward individual teachers—like merit pay—have not worked well, and teachers have disliked them. The limitations of such programs are well known: the lack of consensus about what makes for effective teaching; the fact that gains in student achievement often reflect not just the actions of an individual teacher but also the more general environment for learning in the school; and the growing recognition that rewarding individual teachers encourages them to compete with one another rather than to work cooperatively.”⁷²

There are other concerns in addition to the ones cited by Clotfelter and Ladd. However, there is no reason to believe that an incentive system that seems to work well in many other industries can not be applied to teaching to create positive change. I will address each of the many concerns and fears associated with merit pay, to point out that many of the downsides are somewhat exaggerated, or can be accounted for with a properly implemented system.

One of the most common reasons that merit pay plans are criticized is simply that they have been implemented in the past and were dropped by most districts within five years.⁷³ However, many of the schools in which these merit pay plans were implemented were not particularly keen to support them, and they simply discontinued the program under the pressure of teachers and because of budgetary constraints.⁷⁴ If one of the goals of merit pay is to induce more highly qualified teachers to enter teaching and to then remain in the profession, these programs would have to be in place for more than a few years in order for these results to be achieved. Many of these plans were not in place long enough for the desired results to be

⁷² Clotfelter and Ladd, 27.

⁷³ Richard J. Murnane and David K. Cohen, “Merit Pay and the Evaluation Process: Why Most Merit Pay Plans Fail and a Few Survive,” *Harvard Educational Review* 56, no. 1 (1986).

⁷⁴ Hanushek, “Comments,” 131.

achieved, or for us to say conclusively that it is not possible to attract highly qualified teachers through merit pay. There is not enough evidence on merit pay to rule it out as a possible policy solution.

Another common objection to merit pay is the subjectivity involved in determining who gets rewards.⁷⁵ Detractors point out that if merit pay bonuses were determined by an administrator, teachers would have an incentive to curry favor with the supervisor rather than to teach better.⁷⁶ Even if standardized tests were used, this could still be problematic because teachers with the brightest students might be rewarded.⁷⁷ However, because many merit pay systems are designed to reward teachers who do the most to improve student performance, they would apportion rewards based on the teachers who obtained the largest gain in their students' achievement, as measured by standardized tests. Some people also criticize a merit pay system based on standardized tests, citing the usual problems with standardized testing and saying that this system would be biased towards rewarding those teachers who taught the brightest students.⁷⁸ However, if merit pay was given out based on gains in student achievement that were larger than what was expected, then the problems with rewarding teachers with the best students could be minimized. A relatively sophisticated regression equation could be used to approximate each student's yearly improvement given each individual's socio-economic background, past performance, and other inherent factors, so as to try to tease out the influence of the teacher from that of the student and parents. Although no measurement is perfect, a system can be designed that would align teacher incentives with student performance while ensuring that the program did not systematically favor teachers with the brightest students.

⁷⁵ Murnane and Cohen.

⁷⁶ Alfe Kohn, "Why Incentive Plans Cannot Work," *Harvard Business Review* 71, no. 5 (Sept/Oct 93).

⁷⁷ William Raspberry. "Merit Pay: No Answer for Schools," *The Washington Post*, 20 April 2001.

⁷⁸ Raspberry.

Another supposed strike against merit pay is that these schemes should not be implemented because teachers do not support them.⁷⁹ However, when thinking about why the teachers unions would oppose merit pay, it is helpful to recall that unions generally exist to support the weakest workers. Therefore, a system like merit pay, that would hurt the poorest teachers by lessening their relative financial reward would naturally not receive the support of an organization that exists to protect the interests of the least competent teachers. Additionally, because there have been so few real experiments with merit pay, teachers may be basing their opinions solely on myths rather than fact.

Some other arguments that have been put forward against merit pay really don't hold much weight when examined more closely. For example, some people think that teachers would only spend their time helping the students who were most likely to make large gains on the tests if merit pay were introduced.⁸⁰ To begin with, it doesn't seem as though most teachers would enter such a low-paying profession if they were not genuinely concerned with helping all students. Secondly, most teachers only have their students for one year and would not be able to ascertain which students would be most likely to make the largest improvements after only teaching them for a few months. Finally, a merit pay system based on making improvements larger than the ones predicted by a regression analysis would eliminate this possibility completely. Another unreasonable argument is that merit pay would reduce the incentives for participating in other teacher duties, such as lunch duty and study halls.⁸¹ This argument holds little weight, since such responsibilities are assigned by supervisors and teachers would not have any ability to avoid them.

⁷⁹ Ladd and Hansen, 177.

⁸⁰ Murnane and Cohen.

⁸¹ Murnane and Cohen.

Lastly, the other arguments against merit pay for teachers are basically critiques of merit pay systems in general. These include the arguments that merit pay increases competition, reduces the morale of those who do not receive the rewards, and that rewards do not really motivate people to work harder or to produce better results.⁸² While these are all valid arguments, it is difficult to understand why, if merit pay does indeed produce all of these dire consequences, many private industries continue to pay their employees under some sort of merit pay structure. Additionally, if merit pay systems reduce the morale of those teachers who are ineffective, perhaps it will encourage them to move on to a different occupation at which they were more competent and that they would find more rewarding.⁸³ Finally, merit pay systems could be designed in order to minimize competition between teachers. For example, there could be a system where each and every teacher whose students performed better than they were expected to receive a financial reward. There is no reason why a system in which every single teacher could receive an award would make teachers more competitive. It is reasonable to believe that such a system could actually compel them to co-operate more, as the teachers would now have an incentive to seek out and learn new skills from their fellow teachers. Such a system would help to eliminate apathy amongst teachers and could encourage them to work together to improve, which would benefit each individual teacher who could attain a financial award and each student who now had a teacher who had a financial incentive to learn new skills and apply them to the classroom.

Finally, there are two key benefits that would come of merit pay. These benefits could be so advantageous that they make up for any possible detrimental effects of the system. First of all, from an economic perspective, merit pay aligns performance with incentive by paying the

⁸² Kohn.

⁸³ Hanushek, "Teacher Quality," 131.

people who perform better more. While some say that this might make people lose morale, such a system could also boost morale as well. All the highly competent teachers would now receive rewards and recognition for their efforts and this might encourage the best teachers to remain in the profession. Secondly, rather than becoming complacent, teachers who were not performing well might be encouraged by the financial reward to learn new teaching techniques, improve their content knowledge, and work more with students. There is no reason to assume that providing rewards would reduce morale more than it would increase it.

The second potentially positive effect of merit pay is that it could, over time, change the supply of teachers. As Hanushek points out, merit pay could attract more highly qualified teachers who would get rewarded for their performance and it could also encourage those teachers who were the most effective to continue teaching.⁸⁴ Since teacher quality has been found to be the largest determinant of student achievement, merit pay's potential to attract and retain highly competent teachers should not be overlooked or diminished.

Although there are many arguments against a merit pay system, an effective merit pay system could be implemented as long as it was carefully designed and adequately explained to teachers and parents within the school. This system would reward highly competent teachers, encourage them to remain in the profession, and send the message to potential future teachers that the public school system rewards those who achieve results. Although there are potential drawbacks to the plan, the deleterious consequences of not shifting to an incentives-based plan are larger than those posed by merit pay. Without significant changes, the public education system will continue to attract relatively unqualified candidates and will provide no financial incentive for the best teachers to continue teaching.

Increasing Teacher Salaries

⁸⁴ Hanushek, "Teacher Quality," 131.

A final policy that could be implemented to help attract and retain high quality teachers is simply increasing the salaries for all teachers. Because of the higher opportunity costs for women given their expanding job opportunities, increasing the salaries for teachers could make teaching more attractive to college graduates⁸⁵. This is especially important for those graduates who are the most capable and who have a plethora of well paying job opportunities to choose from. Additionally, higher salaries could help to retain teachers for longer durations.⁸⁶ This is especially important because teachers make enormous gains in teaching performance after their first few years in the profession.⁸⁷

Studies have determined that higher teacher salaries do, in fact, attract more college graduates into teaching and increase teacher attrition. College students are more likely to enroll in teacher training courses when salaries are higher, increasing the supply of teachers, and enabling schools to be more selective in their hiring practices.⁸⁸ Murnane and Olsen found that increasing teacher salaries by \$1000, measured in 1987 dollars would increase the median duration of a teacher's career by 2-3 years.⁸⁹ Lankford and Wyckoff also found that teachers who receive higher salaries remain in the profession for a longer amount of time.⁹⁰

One important thing to consider when discussing salary increases is how these increases are spread throughout the salary schedule. While real wages for teachers increased throughout the 1980's, much of this increase went to veteran teachers.⁹¹ Lankford and Wyckoff determined that veteran teachers, with 20 or more years of experience received a 15% salary increase, while

⁸⁵ Ladd and Hansen, 172.

⁸⁶ Murnane and Olsen

⁸⁷ Lankford and Wyckoff, 378.

⁸⁸ Ballou, 113.

⁸⁹ Murnane and Olsen

⁹⁰ Lankford and Wyckoff.

⁹¹ Ladd and Hansen, 173.

novice teachers, with 3 years of experience or less, received only 3% more.⁹² Increasing salaries in this fashion will do very little to encourage new teachers to enter the industry or to encourage the newest teachers to remain in the profession. New teachers also see rapid gains in their effectiveness during their first few years teaching, and paying novice teachers a substantial amount more for each additional year of teaching might encourage them to remain long enough to become a highly effective teacher.⁹³ Increasing the salaries for novice teachers could also help to reduce teacher turnover, improving results for students.⁹⁴

However, increasing teacher salaries without changing the incentive system for teachers might not produce large increases in teacher quality. Ballou and Podursky point out the possible negative effects of increasing salaries for all teachers. First of all, if salaries were augmented for all teachers, this would give veteran teachers an incentive to remain in the labor market, lowering the exit rate of teachers from the profession and subsequently reducing the number of teacher positions available to teacher applicants.⁹⁵ Secondly, the increased salaries would encourage more college graduates of all ability levels to apply for teaching positions, although the magnitude of increase would be highest among the most capable graduates, with the highest opportunity cost.⁹⁶ However, because there would be more candidates applying for more positions, the probability of obtaining a teaching position would decline.⁹⁷ Studies have shown that when the probability of getting hired as a teacher declines, fewer students enroll in teacher training programs, and this effect is most pronounced among those students with the highest

⁹² Lankford and Wyckoff, 376.

⁹³ Lankford and Wyckoff, 378.

⁹⁴ Rivkin, Hanushek, and Kain, 29.

⁹⁵ Dale Ballou and Michael Podursky, "Recruiting Smarter Teachers," *The Journal of Human Resources*. 30, no.2 (Spring 1995): 326.

⁹⁶ Ballou and Podgursky, "Recruiting," 330.

⁹⁷ Ballou and Podgursky, "Recruiting," 330.

academic ability.⁹⁸ Therefore, salaries increases have a variety of effects on teacher quality. They decrease the exit of veteran teachers from the profession, reduce the amount of new teacher openings, and may consequently reduce the amount of highly qualified students who pursue teaching as a profession. These deleterious effects can be opposed by the fact that the higher wages attract brighter candidates to the teaching profession and could encourage the best teachers to remain in teaching longer. It is difficult to ascertain whether the negative or positive effect on teacher quality dominates. Ballou and Podgursky estimated that a 20 percent increase in salaries would raise teacher quality overall, but only slightly.⁹⁹ Furthermore, because of the incentive for veteran teachers to stay longer, they estimate that it would take at least ten years for half of this positive effect on quality to be realized.¹⁰⁰

Therefore, while raising teacher salaries might have a small positive effect on teacher quality, it would take a long time for these results to be realized and it would be an enormously costly policy to enact. However, Ballou and Podgursky's study was performed under the assumption that the teaching incentive system would remain as it is in most districts today, with little or no financial rewards accruing to the best teachers and few consequences plaguing the worst. If teacher raises were enacted along with the implementation of a merit pay system that provide benefits to the best teachers while allowing administrators to dismiss the worst, the positive effects of higher teacher salaries on teacher quality could be enhanced. Therefore, increases in teacher salaries could have a larger positive effect on quality if performance-based incentives were also implemented and if the salary increases were proportionately larger for the newest teachers in the profession. This would encourage more highly qualified teachers to enter the profession, give the best teachers a financial reward for staying, and get rid of the worst

⁹⁸ Ballou and Podgursky, "Recruiting," 330.

⁹⁹ Ballou and Podgursky, "Recruiting," 332.

¹⁰⁰ Ballou and Podgursky, "Recruiting," 335.

teachers in the profession, which would combine to open up more teaching positions and increase the chance that a potential teacher would get hired. While it is difficult to determine the exact magnitude of a combination of merit pay and elevated salaries on teacher quality, it seems clear that simply raising teacher salaries will not be enough to attract and retain the highest quality teachers.

Cincinnati: A Case Study in Reform

The Cincinnati district might provide a glimpse into what the future will look like for educators and school districts. In 2002, the Cincinnati school district implemented a radical new performance and competency based salary structure for their teachers.¹⁰¹ This system is believed to be the first of its kind in the country.

While teachers' unions have been skeptical of such incentive systems in the past, the Cincinnati plan was actually designed with teacher input and was voted on by the district's teachers.¹⁰² This is crucial because it prevents teachers from approaching the new system with a hostile attitude, as they were included in the design of the plan and can decide to terminate the new system in two years if seventy percent of them no longer want it in place¹⁰³.

Rather than tying teacher salaries directly to student performance like traditional merit pay plans, the Cincinnati system evaluates teachers on a score from one to four across sixteen areas that were determined to be correlated with high quality teaching.¹⁰⁴ These sixteen areas include preparing adequately for class, creating a positive learning environment, maintaining a

¹⁰¹ "Merit Pay Set to Debut in Cincinnati," *Curriculum Review* 40, Issue 4 (Dec. 2000).

¹⁰² Craig Savoye, "City Tries Paying Teachers for Results," *Christian Science Monitor*, 93, Issue 8 (December 2000).

¹⁰³ Savoye.

¹⁰⁴ Savoye.

professional attitude, and teacher ability.¹⁰⁵ The scores are then tabulated and normalized to place teachers in one of five teacher categories: apprentices, novices, career, advanced, and accomplished.¹⁰⁶ The categories are correlated with increasing salary levels.¹⁰⁷

In addition to rewarding teachers who advance to the higher categories, the revolutionary system also includes stipulations for punishing those teachers who fail to advance or fall behind. New teachers must advance out of the apprenticeship level by their second year and out of the novice level by their fifth year, or else their contracts will be terminated.¹⁰⁸ Additionally, veteran teachers who fall back a category will be given two years to improve before their salary will be reduced to correspond with the lower level.¹⁰⁹ Those who fall back to the novice category and remain there for more than one year will lose their positions.¹¹⁰

The teachers who were involved in the design of the incentive structure took precautions to make sure that the evaluation methods were fair, as this is typically one of teachers' largest fears and complaints about incentive systems. The teachers will be evaluated by a principal and a "master" teacher and these evaluations will occur at least once every five years.¹¹¹

While some educators remain skeptical of the plan, many teachers seem to be at least willing to give the plan a try. Many teachers have even expressed hope that the plan will improve several attributes of the current system. One of the benefits the teachers think the plan can provide is that it will attract higher quality teachers into the Cincinnati district.¹¹² As Rick Beck, the president of the Cincinnati Federation of Teachers pointed out, the highest quality teachers would be able to attain the highest salaries within five years, whereas under the old

¹⁰⁵ Dana Truby, "What's the Buzz?" *Instructor*, 110, Issue 6 (March 2001).

¹⁰⁶ Savoye.

¹⁰⁷ Amanda Paulson, "What's New," *Christian Science Monitor*, 92, Issue 208 (Sept. 2000).

¹⁰⁸ Savoye.

¹⁰⁹ Julie Blair, "Cincinnati Teachers to be Paid on Performance," *Education Week*, 20, no. 4 (Sept 2000).

¹¹⁰ Blair.

¹¹¹ Blair.

¹¹² Savoye.

system, they would have needed to teach for twenty-seven years to earn the highest salary, regardless of how well or poorly they taught.¹¹³ Beck believes that the highest quality teachers will naturally be drawn to school districts operating under plans similar to Cincinnati's as these systems provide the greatest opportunities for professional and monetary advancement for the highest performing teachers.¹¹⁴

In addition to attracting the highest quality teachers, many teachers are also hoping that the new incentive structure will increase the motivation of the teachers already within the profession.¹¹⁵ Many teachers also think that as the incentives improve the quality of the teaching force, it will also enhance the respect that the teachers receive within the community¹¹⁶. Once the general public sees teachers being evaluated along the same incentive-based structure as much of the private structure, it is hoped that teachers will finally be regarded as professionals. This could create further positive benefits, because parents who respect the teachers more could ensure that their children also have respect, and behave well, for their educators.

Finally, many teachers are praising the Cincinnati plan for its enhanced objectivity. Because the plan lays out a clear set of guidelines for teacher evaluations, it is hoped that the subjectivity that has plagued similar evaluation schemes in the past will be eliminated.¹¹⁷

The Cincinnati plan will surely be watched carefully by those within the education community. Because it was designed with the input of teachers and administrators, the plan enjoys a great deal of legitimacy and has a greater chance of being successful than plans crafted without this input. Although the plan may not turn out to be perfect, the plan is certainly a bold

¹¹³ Savoye.

¹¹⁴ Savoye.

¹¹⁵ Blair.

¹¹⁶ Savoye.

¹¹⁷ Blair.

step forward and will assist other districts throughout the country in re-shaping their incentive structures to meet the challenges of the twenty-first century.

VII: Conclusion

In recent decades, women have experienced a rapid increase in their career possibilities. This has led to the relative decline in attractiveness of teaching as a career for many of the nation's brightest and most capable women. While it is difficult to measure teacher quality, studies have correlated the academic ability of teachers with teacher effectiveness in terms of gains in student achievement. Unfortunately, it is difficult to obtain information on standardized tests for teachers, but it seems logical that some academically gifted women who might have entered teaching a generation ago will now choose careers that offer greater financial and non-pecuniary awards.

Because of this, America's schools now face a new challenge in recruiting highly qualified teachers to the classrooms. Since teacher quality has been shown to exert a strong, positive influence on student achievement, it is crucial for the American public school system to be able to attract and retain highly competent teachers. There are a variety of reform movements to do this, but unfortunately many of them are flawed. Trying to increase teacher quality by imposing rigid certification requirements will only decrease the incentive for those college graduates with the greatest academic ability and the highest opportunity cost to enter teaching.

Incentive-based education policies offer the promise of increasing the performance of America's teachers. While there is a scarcity of research on the effectiveness of these policies, aligning teacher incentives with performance would almost certainly be an improvement over the current, relatively illogical incentive system. It makes no sense to pay teachers more to attain

master's degrees and to increase their experience levels when these are not necessarily linked with student outcomes. On the other hand, it would make sense to correlate teacher performance with financial rewards.

Offering merit pay for teacher could greatly enhance the attractiveness of teaching as a profession for bright, motivated college graduates. Creating a system that would also remove inefficient teachers could further improve the quality of America's teachers. Merit pay could also motivate teachers to explore new teaching methods or gain a deeper understanding of their subject matter in order to help their students improve and achieve. Additionally, there are a variety of ways to structure merit pay systems, and it is important to take great care in designing such systems. The most effective system would allow any teacher whose students performed better than they were expected to perform to receive a financial reward. This would reduce competition among teachers while still giving teachers an incentive to improve their classroom performance.

However, merit pay will not live up to its potential if it is not combined with salary increases for all teachers. Teacher salaries are currently too low to attract very many academically talented college graduates into the education system. The most effective way to improve America's education system would be to implement a carefully constructed merit pay system along with increases in teacher salaries. This could be financed by decreasing the other input policies that have not worked well in the past, such as by slightly raising class sizes or reducing or eliminating the premium paid to teachers with master's degrees. While the transition to the new system might alarm teachers, administrators, and students who are used to the old way of being, from an economic perspective, it simply makes sense to align incentives with results and to increase salaries sufficiently to attract the brightest and best college graduates to the

American public school system. Furthermore, implementing these reforms will be better than maintaining the status quo. If the educational system is left to its own devices, there will not be an incentive for academically gifted individuals to enter or to remain in teaching and America's students will continue to fall behind. Fortunately, some school districts, such as the Dallas and Cincinnati districts are starting to experiment with new incentives structures. These new systems will need to be studied carefully in the future to ascertain their possible application to the American education system. These new structures offer hope that America's education system will not remain entrenched in the status quo, but will seek out innovative solutions to the problem of improving teacher quality.

One of the qualities that has enabled America to become the most economically successful nation on the planet has been its education system. A successful democracy must provide an adequate education to every student so that all of the fruits of the freedom of opportunity can be fully enjoyed by everyone. The transition from today's incentive system to a merit pay system combined with salary increases will help to ensure that there are enough talented teachers to educate the children that are the future of this country.

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Appendix

The chart “Female Teacher vs. Female Lawyer Weekly Median Income.” was created using data from the January editions of *Economics and Earnings*, which is a quarterly publication produced by the Department of Labor. I chose to illustrate female teachers versus female lawyers to coincide with the topic of this paper and to provide a graphical illustration of the expanding job opportunities that women are facing. I only included data extending through 1988 because, prior to 1988, the Department of Labor did not break this data down into a teacher component. Rather, the wage data was only available for the broad category of “services.” Furthermore, several sources to which I refer in the body of the paper discuss the trends of teacher wages throughout the 1970’s and 1980’s. The chart shows real wages because I was hoping to illustrate the maintenance of the large difference between wages for teachers and wages of lawyers. It would be informative to have the years prior to 1988, but as I mentioned, these did not exist. Furthermore, my chart illustrates that the relatively low salaries provided by the teaching profession were maintained throughout the late 1990’s and the early years of the twenty-first century.

The following is the raw data from which the chart was constructed.

Year	Lawyers	Teachers
1988	774	463
1989	749	486
1990	875	505
1991	821	510
1992	917	530
1993	1015	560
1994	917	603
1995	958	601
1996	970	613
1997	959	633
1998	951	644
1999	974	659
2000	1053	778

2001 1073 707