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Economics of Education

### Three Fixes

Robert Hutchins once said, "Perhaps the greatest idea that America has given the world is the idea of education for all. The world is entitled to know whether this idea means that everybody can be educated, or only that everybody must go to school." This idea emphasizes the fact that we not only need to get all of our kids in school but we must educate each and every one of them to the best of our abilities. The lower one-third of America's school system is failing, therefore there obviously needs to be some changes implemented. Unlike in the past, today we have to educate virtually everyone for higher education or for the modern workplace. Especially since the demands placed on our school system are greater than they have been in the past, the challenge of improving education is more acute than ever before.

Schools are not meeting today's challenge as numerous studies make clear, even though, cited from Sawhill and McMurrer's recent book "Getting Ahead," per-pupil expenditures have increased by 83 percent between 1970 and 1995. Student-teacher ratios have also dropped 22% and the percentage of teachers with a master's degree almost doubled. Even with all of these hefty increases in inputs, they have not improved student performance proportionately. Students' scores on the National Assessment of Educational Progress test in mathematics, science, and reading have been flat for the past 25 years. The National Assessment data disclosed that the percentage of students unable to meet the minimum standard of their grade ranges from 25 to 40 percent in every grade and almost every subject. This is a frightening statistic, and to make matters worse, the

gaps between racial groups are even more daunting. One study found the average performance of 17-year-old African American and Hispanic students is on par with that of 13-year-old white students.

It is obvious that we have some work to do if we want to improve the quality of education provided by our school systems. Across the country, people are looking for ways to solve problems with education by allowing more choice, changing standards, reducing bureaucracy, and shifting decision making in schools. Personally, I believe the keys to improving our education are: emphasizing math and science with better teachers, improving the low proficiency rates, and eliminating the inequality of educational funding across the country.

There are many unsettling statistics about international performance in math and science. The Third International Mathematics and Science Study compares the performance of half a million students in 41 countries at three grade levels. The United States did not rank as highly as I believe we should be. As far as fourth grade, children from the US students did really well. Measurements in eighth grade showed the US as below the international mean in mathematics and just above it in science. However, by the end of high school, US students performed very poorly, outscoring only those in Cyprus and South Africa (<http://nces.ed.gov/timss/>). If the United States wishes to keep jobs in math and science in the future, we will need to work harder at improving student's scores in these areas.

I believe the way to improve these student's scores in math and science is improving the teacher quality in those areas. The National Longitudinal Study of Mathematic Abilities, from Linda Darling-Hammond's article explained a study done by

D.H. Monk on students' mathematics and science achievement found that teacher education coursework has a positive effect on student learning and was sometimes more influential than additional subject matter preparation. Darling-Hammond explains in Monk's most recent study, "Using data on 2,829 students from the Longitudinal Study of American Youth, Monk (1994) found that teachers' content preparation, as measured by coursework in the subject field, is positively related to student achievement in mathematics and science but that the relationship is curvilinear, with diminishing returns to student achievement of teachers' subject matter courses above a threshold level." Therefore, you can see it is imperative that our math and science teachers are highly qualified if we want to see an improvement in student's scores in these subjects.

As we discussed in class, incentives for staying in the educational math and science fields are decreasing as someone can have more monetary success studying finance or accounting. However, I believe it is imperative that we create superior incentives for math and science teachers so we can continue to compete globally in math and science. As Darling-Hammond pointed out, "a controlled study of middle school mathematics teachers, matched by years of experience and school setting, found that students of fully certified mathematics teachers experienced significantly larger gains in achievement than those taught by teachers not certified in mathematics." I believe the best way to improve these incentives and get teachers who are fully certified in math and science is merit based pay.

William A. Firestone's article "Redesigning Teacher Salary Systems for Educational Reform" describes a study done by Lawyer in 1990 that explains an option where different knowledge areas are priced by the market. Firestone goes on to explain,

“This would mean that knowledge areas in scarce supply-science, mathematics, special education-would be better rewarded than others.” I realize the problem with this is spurring tensions among existing teachers and reducing the collegiality that knowledge-based pay changes are intended to enhance. My solution to this is giving the bonuses to the departments. This way, perhaps competition between individual teachers within those subjects would not create any bad feelings.

The second key I believe we need to focus on is improving the low proficiency rates. A massive survey of urban education released last year by Education Week concluded that “most fourth-graders who live in U.S. cities can't read and understand a simple children's book, and most eighth-graders can't use arithmetic to solve a practical problem.” Slightly more than half of students living in urban cities are unable to complete high school in the routine four years, and many of those who do eventually graduate are not well prepared for higher education or the workplace. I think the way to improve this is to begin by changing standards.

The No Child Left Behind Act aims to improve the performance of US primary and secondary schools by increasing the standards of accountability for states, school districts, and schools, as well as providing parents more flexibility in choosing which schools their children will attend. Because the law's response if the school fails to make adequate progress is not only to provide additional help for students, but also to impose punitive measures on the school, the incentives are to set expectations lower rather than higher and to increase segregation by class and race by class and focus mostly on the students on the margin to improve their scores, leaving those children who are failing left behind. Under the No Child Left Behind Act schools that do not meet certain established

standards are given additional funds in attempt to boost scores ([www.whitehouse.gov/](http://www.whitehouse.gov/)). The problem is that schools now have less of an incentive to do better if they are already receiving more funds. However, schools are also given bonuses for meeting yearly requirements. Since these requirements are given each year, schools are less likely to rapidly increase their scores, as a slow and gradual improvement would be financially better. With lack of proficiency rates in these low performing schools, people who come out of school not being able to read will significantly decrease America's productivity and output. As an example, in New York, only 48 percent of the students who start high school graduate four years later. My belief is that when students fail they will get even more discouraged and be less inclined to stay in school, thus the high drop out rates that we see in the nation's high schools.

My solution to this problem is charter schools. Since charter schools are able to act independently of the usual school requirements, they are more dependent on doing well in order to keep their charter. I believe that charter schools increase competition among schools and therefore help set a high bar for school performance. Since charter schools have a specific mission, they have a better focus on their financial resources, their teachers and staff are more dedicated and willing to work harder for a specific purpose, and they are able to tailor to the needs of their students. Teachers and staff persons who come together for the specific purpose of students' success create a great community for learning. There are some reasons that charter schools are an unfair measure for example the selection bias, since parents who send their child to a charter schools must care somewhat about the child's education. However, I still believe charter schools to be an asset for America's future in education. On average, kids in charter schools score just a

little lower on standardized tests, as noted in the “The Nation’s Report Card: Americas Charter Schools.” It is important to note that charter schools traditionally hold a higher percentage of student groups that traditionally score lower on NAEP tests. A recent study of charter schools in Arizona in the late 1990s done by Robert Meranto of the University of Virginia concluded that the presence of charter schools actually led to improvements in the regular district schools. The competition fueled by the presence of charter schools stimulates the district schools to innovate, extend their hours, expand their art programs, and make greater efforts to involve parents. This study also suggests that charter schools are good not only for the kids and parents who choose to attend them, but also for the district schools who see positive results as a cause of the increase competition. Another positive effect of charter schools has been to help equalize funding across district lines since per student funding follows the student to the charter school.

Related to per student funding, I believe another key to improving our school is eliminating the inequality of funding across the country. Quoting R. Fisher’s article “Education,” it says, “More than 46 percent of the revenue for financing public elementary and secondary schools in 1992 was provided by state governments.” Since the 1970s the roles of state and local governments in financing education made some big changes: “Prior to the 1970s, state governments provided about 40% of school revenue, on average, and local governments more than half... State governments attempted to equalize educational opportunity across districts in the 1970s, which results in increased state financial commitments and corresponding decreases in financial responsibility of the localities.” This increased state role in financing education reduced the demand for property tax increases and in some cases even reduced property tax. The article sites an

extreme example of funding such as New Hampshire getting only 8.5% of its funding from the state and 88.4% from the local government. Per pupil spending ranges anywhere from \$3040 as in Utah or \$9317 in New Jersey. The article also references how the differences in expenditures can result from differences in input prices and environmental conditions as well as from differences demand, so that these differences in per pupil spending may not correspond to equivalent differences in educational results.

My belief is that the inequality of funding leads to a high disparity of outcomes for students. Also, I believe we may be stifling students by providing them with a poor education system, depending on their physical location. A student who is in an area with low per pupil funding is effected by the lack of quality education and thus, may lead them to less success which can be extremely discouraging, which may be why we see such high drop out rates. Therefore, if we were able to streamline those differences and create equal spending per pupil across the country, students in lower echelons would have an equal chance at succeeding.

My solution to this problem is a bit radical. I believe we should increase federal taxation in order to even out the educational disparities in costs per pupil. This would also lower property taxes and work to expel the trend of higher property value areas having consistently better schools. Having increased per pupil funding in schools creates opportunities for schools to improve in other ways like having smaller class sizes and increasing teacher quality by being able to pay teachers more. These improvements, as noted by the Ferguson and Ladd article “How and Why Money Matters,” provide positive effects on student test scores, “measurable school inputs- specifically teacher quality, percentage of teacher’s with master’s degrees, and class size- do affect student’s test

scores.” We need to give all children an equal chance by allowing them the same economic advantages, no matter what their property value.

In conclusion, as said by Robert Hutchins, we not only need to provide a place for every student in the education system but we need to provide him or her with a quality education. We must prep our students for modern day society so that they are fully prepared for either higher education or the workplace. I believe the top three ways to achieve these results is the combination of better math and science teachers, improving the proficiency rates, and finally, eliminating the inequality of funding, leveling the playing field so that every student has a fair chance at success through our school system here in the US, as promised.