

EDUCATION POLICY STUDIES LABORATORY

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I. INTRODUCTION

The Wisconsin Policy Research Institute's (WPRI) report, "The Status of High School Education in Wisconsin: A Tale of Two Wisconsins," provides documentation for Two Wisconsins, separated by wealth. The report adds evidence to something we already know: lower-wealth school districts have lower average test scores. Beyond this, however, the report falls short of offering useful information. Its statistical methods are weak and ill suited for the task at hand. Further, its recommendations are only loosely connected to the analyses.

Few issues are as important as the effectiveness of our high schools. High school reform is hotly debated and reflects not only our vision of schools but of society, as well. In one camp, a market-oriented, competitive accountability model is promoted. In the other, a broader vision is embraced; schools are part of a social contract with equality and democracy as key values. The WPRI report weighs in on this debate, but it does so in a disingenuous way, urging its readers to believe that its ideological conclusions in opposition to adding resources to public education, and in support of a competitive accountability model, are supported by its data and analysis. They are not, and these shortcomings are explained in the following review, examining the report's analyses and findings in light of what we scientifically know about the issues raised and the appropriateness of the report's methods.

II. FINDINGS AND CONCLUSIONS OF THE REPORT

The report begins by summarizing various groups' reform efforts, with a focus on those advocating for more rigorous academic standards and requirements. WPRI demonstrates that there are strong relationships between poverty and achievement. Schools with lower property wealth and greater student poverty score lower on standardized tests. In fact, they find that 47% of the variation in district test scores is explained by poverty data. The author claims the achievement gap, as well as the poverty gap, has grown larger from 1997 to 2004. Further, the achievement gap

increases as children get older and advance to higher grades. While results such as these are often the prelude to cries for greater investment in education for the disadvantaged, the writer of this particular report reaches a different conclusion: he claims that the difference in test scores between rich and poor is not attributable to school funding.

From this perspective, the relationship between adequate school funding and achievement is a “myth” to be exploded. The writer looks at the top scoring ten percent of districts and compares their spending with the bottom ten percent and doesn’t see much difference. He concludes, “Therefore, policy makers looking to close the performance gap need not consider spending as a primary solution.”

In the final section of the paper, the author examines the ACT scores of students who took the “recommended core course requirements” and compares them with students who took a lesser curriculum. The author found the students taking the more rigorous courses scored better than those who didn’t. The writer argues that schools with a high proportion of ACT takers foster a high achieving environment and provide a more rigorous program.

The report finishes with “policy considerations” which include increasing high school graduation requirements, tougher college admissions standards, encouragement of students to go on to college, a high school graduation examination and the creation of “incentives” for scoring higher on tenth grade tests (such as required remediation courses for failing students).

III. THE REPORT’S REVIEW OF THE LITERATURE

One problematic aspect of this report is that it fails to consider the large, existing research base covering the same issues the report addresses. The paper does include citations, but they are, overwhelmingly, not to the relevant body of knowledge. Of the 38 end-notes, none appear to be from refereed scholarly journals. Twenty-eight of the references are from newspapers, press releases and vested interest organizations. The remainders are data source citations with a heavy sampling from the *Wisconsin Taxpayers Association*.

Yet since the 1960s, the question of “Does Money Matter?” has been at the forefront of the educational research agenda. This query has also been in front of state supreme courts in more than 25 states since 1990. The courts have overwhelmingly concluded that money matters a great deal. An area of great foment and ferment, hundreds of extensive studies have been conducted. From this massive literature, the WPRI author expends one sentence referencing two works by one author, Eric Hanushek, whose research is generally regarded as supportive of the author’s premise.

It has been ten years since Greenwald, Hedges and Laine published their meta-analysis of the 60 most rigorous research studies. They found

that money matters and it matters how it is spent, as well.¹ While reverberations are still heard in political discourse, “the academic debate over whether money matters has run its course.”² The issue has been decided.

On the issue of whether rigorous testing and extensive course requirements lead to better education, a half-dozen references are made in this report to announced political agendas, various foundation initiatives, and assorted think-tank recommendations. Although more rigor is at the core of the recommendations, the report has no research reference indicating these measures have proven effective. In fact, higher expectations and more challenging instruction have been demonstrated to be associated with higher achievement and a closing of the achievement gap. However, this successful approach links increased rigor with increased supports for teachers and students. Accordingly, this research directly contradicts the report’s basic premise that increased resources are unimportant.”³

IV. METHODOLOGY

The author contrasts the top-and bottom-scoring ten percent of the almost 400 Wisconsin school districts with high schools. The selection was done on the basis of the tenth grade state examinations. The high scoring and low scoring schools are listed in a set of charts encompassing about one-fourth the length of the report. Using averages of the top and bottom deciles, the report then compares test scores, poverty rates, income, property value per pupil, percent minority and per pupil spending.

The writer then examines the relationship between poverty and achievement using multiple regression and finds a very strong relationship between poverty and achievement scores (R squared = 0.466). He proceeds to find significant relationships between academic test scores and race, income, and property wealth.

It should be noted that all these analyses use district averages on a single test. Further, students took this 10th grade test after having attended their high school for only a year. The test scores, however, are attributed to the high school even though, as demonstrated by the report itself, such scores are more a measure of poverty than of any other variable (such as funding or course-taking).

The author’s key assertion is found in the report’s section entitled “Exploding the Myth: Spending and Student Performance,” at the end of which the writer concludes: “But the amount of money a district spends per student appears not to make much of a difference” This finding is unsupported. The preceding analysis reverts to examining only the differences in averages between the top and bottom deciles in test scores and spending. A careful search of the report yields little more than this

insubstantial evidence upon which the author has based his very strong, causal conclusion. This approach simply does not provide sufficient research rigor to overcome the consensus of the field over the past forty years.

The author clearly had the capability and the data in hand to conduct a simple correlation between spending and achievement test scores. The omission of such a fundamental analysis is puzzling.

The primary basis for the author's conclusion that money doesn't matter is that there is little difference in per pupil spending between high- and low-scoring school districts. However, Wisconsin schools have been under revenue caps since 1993. Thus, they froze the system's inequities in place.⁴

School costs can and do vary by the proportion of children in poverty, numbers of special education children, cost of living differences, small schools and districts, and similar factors. Wisconsin provides extra money for poverty, limited English, race, urbanicity and at-risk children. These funds would logically be directed toward the more low-scoring districts. Though the author is not explicit regarding these funds, it appears that these categorical aids are considered as part of what the author calls "comparative expenditures." Since the poorer districts receive more categorical aid to address their unique needs, it would be expected that the poorer districts would be spending considerably more. Surprisingly, they do not. This suggests that the base spending for poor districts is actually less than reported and far less than what they need.

Two separate adequacy studies have been conducted in Wisconsin to determine whether schools receive enough money to meet academic standards. Both studies concluded they were not sufficiently funded. In the more conservative study, \$11,121 per pupil was needed when the state spending was \$8,241 (FY01).⁵ Underfunding affects poor children the most and the funding level simply does not reach the threshold of effectiveness for these children.

The report also concludes that the achievement gap is growing, which may well be true. However, this result is not convincingly substantiated by this analysis. State officials have cautioned that test scores cannot and should not be compared between 1996-97 and 2003-04 due to changes in the testing program. In fact, the tenth grade test was rebuilt.⁶ Likewise, comparing one set of tenth graders with another cohort seven years later to judge school quality is a procedure that may have as much as 70% error between the two sets of scores.⁷ When the natural error in the first test is multiplied by the natural error in the second test and then multiplied by cohort differences, the size of the measurement error becomes so large as to render comparisons meaningless.

If the author is correct in stating that wealth disparities have increased in the state during this time, it would be normal for achievement

score gaps to likewise widen. However, based on the data and analyses in this report, we cannot conclude whether the perceived growing difference is real and, if it is real, whether the difference is due to school quality declines, cohort effects, socio-economic shifts, test differences or simple error. All these cautions bring us back to the issue raised earlier: the analyses methods chosen by this author are simply not strong enough to support bold causal conclusions. The results shown in the report might have been (and probably were) caused by a wide variety of factors that the author did not consider.

The report's recommendations focus on increasing course-taking requirements. This approach is connected to the data through a comparison of ACT scores. Students who took a "state recommended core course curriculum" did better than students who did not. Likewise, students who attended poorer schools were less likely to have taken a college prep curriculum. These findings are not surprising. Certainly, high expectations for students are desirable.

However, to argue that increasing course requirements will resolve the problem of insufficient achievement may be to misunderstand the data. Children with more affluent and highly educated parents are more likely to take the college preparatory curriculum and are also more likely (because of greater resources) to have higher ACT scores. Again, the researcher may simply have cause and effect confused. The cause of more rigorous course taking is most likely socio-economic. Simply requiring more rigor without adequate supports from birth and throughout schooling may have the effect of causing more drop-outs from among the poor, the least prepared, and the least supported.

Finally, the report compares fourth, eighth and tenth grade mastery rates and concludes that, as students get older and move into higher grade levels, they do worse on mastery level percentages. One of many methodological problems here is that vertical scaling models are notoriously inaccurate. Test content is extremely different between the grade levels. Tests in elementary arithmetic are different than those in high school algebra, and tests in reading decoding are different than those interpreting abstract poetry. Likewise, the setting of cut-scores (the threshold score for "mastery," in this case) is necessarily arbitrary. The way in which such standards are set means that there is no correspondence between the 'passing' cut-offs at the different grade levels. Thus, whether the differences in pass rates are due to artifacts of the test, differences in student achievement, measures of school quality or something else cannot be determined by the data presented.

V. ARE THE CONCLUSIONS SUPPORTED BY THE LITERATURE AND THE STUDY'S METHODS?

The findings of the WPRI report on high schools, with a few notable exceptions, cannot be supported.

- The emerging two Wisconsin's, separated by race, poverty, and property wealth is consistent with similar research in other states, the nation and the international literature. To say that achievement scores are best predicted by wealth factors is one of the clearest and most consistent findings in social science research.
- The claim that money does “not . . . make much of a difference” cannot be supported when the immense weight of the literature is considered. Certainly, a small number of researchers (such as the single person cited in the references) argue this point in courts under the auspices of ideologically driven think-tanks. As a matter of science and as a matter of jurisprudence, the issue is essentially settled – money does matter.

This report's findings to the contrary reflect the effects of an inadequate method and the limits of simple comparisons based on school-level averages in a portion (20%) of the state's school districts. Moreover, the author did not consider the severely constricted financial range in the state, special needs children, regional cost of living, poverty impacted children, special education needs and the like.

- The growing achievement gap may be true but the evidence presented here is not sufficient to support or deny such a conclusion, much less determine the cause. Whether looking at tests over time or different grades at the same time, test-score distributions are best understood as influenced by cohort effects, test differences, differences in mastery level and the increasing breadth of curriculum.
- Students who take college prep courses do better on college prep tests. This conclusion would surprise few. However, the data here cannot support a recommendation focused merely on requiring that all students take more rigorous coursework, without also devoting resources toward supports for teachers and students. Students come with a wide array of talents, interests, and motivations. Increased frustration, drop-outs, and disaffection with limited offsetting social or economic gains may result.

VI. CAN THE REPORT'S CONCLUSIONS BE USED TO GUIDE POLICY?

A policy-maker looking for a report reviewing “The Status of High School Education in Wisconsin” (as it is titled) would probably be disappointed to discover that it attempts to address only a small aspect of that status. It does not include a discussion or analysis of the many goals, activities and programs in high schools. Moreover, the report is written in segments only tenuously connected to one another. That is, the paper opens with a short summary of some high school reform initiatives that are based on more increased academic rigor. It then goes in a new direction, examining the relation between poverty and test scores. The report then turns to demonstrating that spending and achievement are not linked and that more money is not the answer. Shifting focus again, a growing achievement gap is claimed across the years. Finally, the paper goes back to calling for more rigor.

These rapidly shifting foci are bewildering to the reader and do not provide the policy maker with a coherent perspective or rationale. The solutions, all calling for greater rigor, receive little support from any analyses or findings in the text.

In sum, the paper fails to make a strong case for any of the topics it introduces, other than the strong relationship of poverty with test scores. The report presents neither compelling data nor a command of the literature. It also lacks careful reasoning sufficient to be persuasive in policy debates.

VII. CONCLUSIONS

The first sentence of the report begins, “For years, the liberal advocates have told us that the real problem in education is” The reader is immediately tipped that the paper is a refutation piece rather than an open look at trying to determine the best solutions to complex human problems. This interpretation is reinforced by the subsequent scatter-shot advocacy of historically conservative approaches (more academic rigor, money doesn't matter, students do worse as they stay in schools longer, opposition to finance reforms, more testing, etc.). Perhaps because of this attribute, the paper is organizationally disjointed and free of supporting research.

The strongest conclusion in the paper is the statistical strength of the relationship of poverty with test scores. “It might be tempting to look for ways to spend additional money to address these issues (poverty, race and property wealth),” says the report. But the author goes no further than temptation. No recommendations address poverty.

If we are serious about closing the achievement gap, then we are driven to addressing poverty. Otherwise, we are inexorably driven to the second half of the report's title, “A Tale of Two Wisconsins.”

¹ Greenwald, Rob, Larry V. Hedges and Richard D. Laine. "The Effect of School Resources on Student Achievement." Review of Educational Research, Vol 66, No. 3 (Fall 1996). Also see Grissmer, David W., Ann Flanagan, Jennifer Kawata, Stephanie Williamson. "Improving Student Achievement: What State NAEP Test Scores Tell Us," Santa Monica, CA: RAND, 2000. Krueger, Alan. "Reassessing the View that American Schools are Broken," Economic Policy Review, March 1998, pp. 29-44. Krueger, Alan. "Economic Considerations and Class Size," Working Paper #447, Princeton University, Industrial Relations Section, September 2000, www.irs.princeton.edu/pubs/pdfs/447.pdf. Retrieved on January 31, 2006.

² Rebell, Michael A. and Joseph J. Wardenski. Of Course Money Matters: Why the Arguments to the Contrary Never Added Up. The Campaign for Fiscal Equity. New York, NY. January 2004. 47 pp.

³ Burris, Carol C. and Kevin G. Welner. "Closing the Achievement Gap by Detracking." Phi Delta Kappan, Vol. 86., No. 8, April 2005, pp 594-598.

⁴ Reschovsky, Andrew. University of Wisconsin – Madison, personal electronic communication, January 26, 2006.

⁵ Norman, Jack. Funding Our Future: An Adequacy Model for Wisconsin School Finance. Institute for Wisconsin's Future. June, 2002. see also Allgood, Whitney and Richard Rothstein. Memorandum to Karen Royster. "Adequate Education for At-Risk Youths." Economic Policy Institute. October 18, 2000.

⁶ "CAUTION: Proficiency data for 2001-02 and earlier years are NOT comparable to proficiency data for 2002-03 and later years <http://dpi.wi.gov/oea/kcrawdat.html> Also, see http://dpi.wi.gov/oea/pdf/profnewq_a.pdf, Question#6

⁷ Kane, Thomas J. and Douglas O. Staiger. "Volatility in School Test Scores: Implications for School Based Accountability Systems." Unpublished paper. Hoover Institution, Stanford University, Stanford, CA, April 2001.