

Family Wealth and Student Achievement
Louis Wildman
California State University-Bakersfield

Both James Coleman (1966) and Christopher Jenks (1972) found that there is often a strong correlation between family wealth and student standardized achievement test scores.

Coleman collected data on 600,000 children in all fifty states. He noticed that there were large differences in school quality, and believed that this was because schools in the affluent suburbs were well financed, whereas schools in the inner cities were deteriorating. The Civil Rights Act of 1964 ordered the Commissioner of Education to investigate, and Coleman was asked to head that investigation. He predicted that it was the difference in the quality of schools that accounted for the difference in the academic achievement of the poor and minorities.

To his surprise, he found that non-school factors, particularly family background, accounted for the difference:

One implication stands out above all: That schools bring little influence to bear on a child's achievement that is independent of his background and general social context; and that this very lack of an independent effect means that the inequalities imposed on children by their home neighborhood, and peer environment are carried along to become the inequalities with which they confront adult life at the end of school. (Coleman, 1966)

A subsequent large three-year study by Christopher Jenks confirmed Coleman's findings. (Jenks, 1972)

Given the findings of Coleman and Jenks, here is additional evidence, utilizing data from schools in Kern County (California). The correlation between the 2006 Kern County High School Academic Performance Index Scores and the 2006 Percentage of Students at those high schools qualifying for free and reduced meals, was $-.812$. Notice that this inverse relationship was not perfect, in which case the correlation would have been -1.00 , but very close. Squaring this correlation coefficient allows one to compute the coefficient of determination. In this case the coefficient of determination is $.6592$. Multiplying by 100 (and rounding), this suggests that about 66% of the variability in the achievement test scores is strongly related to family wealth. High scoring schools have a low percentage of students qualifying for free and reduced price meals, whereas low scoring schools have a high percentage of students qualifying for free and reduced price meals.

Utilizing 2009 data, calculating the correlation between Star test results and the school-wide percentage (%) of students in each of those Kern County schools qualifying for free and reduced meals, as a measure of family poverty in that school, one finds that:

2nd grade English and % = $-.760$
3rd grade English and % = $-.314$
4th grade English and % = $-.781$
5th grade English and % = $-.802$

2nd grade Math and % = $-.654$
3rd grade Math and % = $-.246$
4th grade Math and % = $-.533$
5th grade Math and % = $-.588$

6th grade English and % = -.837
 7th grade English and % = -.833
 8th grade English and % = -.808
 9th grade English and % = -.844
 10th grade English and % = -.729
 11th grade English and % = -.762

6th grade Math and % = -.733
 7th grade Math and % = -.619
 9th grade Algebra and % = -.615
 10th grade Life Science and % = -.748
 11th grade U.S. History and % = -.585

All correlations were significant at the .01 level (even those at the 3rd grade level).

Utilizing 2009 data, the percentage of 10th grade students who pass the California High School Exit Exam at each high school in the Kern High School District (which encompasses most of Kern County) is likewise closely correlated with family wealth:

High School	% Qualifying for Free or Reduced Meals	% Passing English Portion	% Passing Mathematics Portion
Arvin	82.8	65	68
Bakersfield	43.9	80	82
Centennial	26.8	81	84
East Bakersfield	56.6	70	74
Foothill	59.6	69	71
Frontier	9.4	90	89
Golden Valley	59.8	74	78
Highland	49.9	77	77
Kern Valley	46.9	86	80
Liberty	10.1	90	90
North	48.2	76	74
Ridgeview	34.8	79	77
Shafter	67.5	71	73
South	62.4	69	73
Stockdale	12.0	93	92
West	58.7	74	73

The correlation between the percent qualifying for free and reduced meals and the percentage passing the English portion of the California High School Exit Exam is -.880. The correlation between the percent qualifying for free and reduced meals and the percentage passing the Mathematics portion of the California High School Exit Exam is -.941. These are almost perfect inverse correlations, strongly suggesting a very close relationship between family wealth and passage of this exam.

Overall, this data suggests (once again) that family poverty plays a very large role predicting student achievement.