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Family Structure, Socioeconomic Status, and Student English Achievement

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Abstract: The researchers used structural equation modeling (SEM) to create a model to predict fourth-grade student achievement in English Language Arts (ELA) by exploring the relationships among: student, household, school, and teacher factors. Public data from the New York State Education Department (NYSED) 2012-2013 school report card data, NYSED fiscal reporting system, Census 2010 School District Demographics System, and 2011 Civil Right Data Collection were used from 1,263 schools in New York excluding New York City. Variables were chosen using this convenient sample and supported by our conceptual rationale. The model predicted fourth-grade ELA achievement with 73 percent of effect size. Household factors had strong predictive value for student achievement. School attendance rate and instructional expenditure per student had medium predictive value for student achievement.

Key words: Achievement; family structure; socio economic status; ELA; teacher's education; path analysis; SEM

JEL codes: A, C

1. Statement of the Problem

President Johnson signed the Civil Rights Act in July 1964. The stated goal of the act was to outlaw discrimination and promote equality among all races. One of the results of the act was that the U.S. Congress commissioned sociologist James Coleman to write a report on education equality in the U.S. Coleman and his team published their report in July 1966. Since then, the U.S. education system went through several reforms including those informed, or influenced by the Coleman's report *A Nation at Risk* (1983), the *No Child Left Behind Act* (2000), and *Race to the Top* (2009) and *Every Student Succeeds Act* (2015). However, the gap between schools based on socioeconomic status still exist. According to New York state assessment results (NYSED Press Conference 8/19/2013), there is one-standard-deviation gap between students who live in poverty and students who come from higher socioeconomic class. Same gap was observed by Coleman and his team in 1966. One of the effects of the Coleman report was that it led researchers to state that increase in school spending has little effect in terms of student achievement (Hanushek, 1986). In a later research, Hanusheck and his co-authors' (2005) found that specific school resources do actually have significant effects on student outcomes. Teacher experience, teacher level of education, and smaller class size were found to have small but significant positive impact on student achievement (Rivkin, Hanushek, & Kain, 2005).

Research (Bachman, Coley, & Chase-Lansdale, 2009; Crosnoe & Wildsmith, 2011; Hampden-Thompson,

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2009) supported that children in stably married families experienced improved academic, behavioral, and psychological well-being compared to children in stable cohabiting or single-parent families. However, part of it is rooted in the better socioeconomic circumstances of families headed by stably married parents (Bachman, Coley, & Chase-Lansdale, 2009; Crosnoe & Wildsmith, 2011; Hampden-Thompson, 2009). Contradicting to that, Weisner and Garnier (1992) found in a 12-years longitudinal study that children to non-traditional families with strong commitment to their life style do better in school than traditional children.

There is gap on the literature in understanding the levels of how student, household, school, and teacher attributes affects student achievement, and which one of them have major impact on the student performance. Understanding the factors that affect student achievement and the relationships among them will be vital to understanding how to allocate resources effectively.

2. Purpose of the Study

The purpose of this study is to create a model to predict student achievement by exploring the relationships among school, teacher, student, and household factors. Achievement will be measured by fourth-grade student achievement in ELA among NYS school districts. Convenient data was collected from several data bases such as Public data from the New York State Education Department (NYSED) 2012-2013 school report card data, NYSED fiscal reporting system, Census 2010 School District Demographics System, and 2011 Civil Right Data Collection were used from 1,263 schools in New York excluding New York City.

3. Conceptual Rationale

The model for this research has four components: (household, school, teacher, and student) and their effect on student achievement.

Coleman (1966) and his colleagues reported that student educational attainment was strongly influenced by student social background, was moderately influenced by their peers, and was weakly influenced by variations in school quality (e.g., per student expenditure, class size, building size, building age, full-time librarian, free textbooks, school cafeteria, and school gymnasium). Also, teacher quality had a moderate effect on low SES student educational attainment and had a weak effect on others (Colman et al., 1966).

Mayer (1997) noted that students from low SES backgrounds scored low on standardized tests, had lower school attendance rates, and displayed more behavioral problems than did affluent children. Mayer argued that household factors influenced student achievement more than socioeconomic status.

Other researchers (Baker, Sigmon, & Nugent, 2001; Henry, 2007; Ready, 2010) argued that students who lived in single-family households were more likely to be in poverty and more likely to be absent from school than students from intact families.

Chang and Romero (2008) used the Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K) data. They examined attendance patterns for children in grades K-3 by grade, SES, ethnicity, gender, limited English proficiency, and special education. Chang and Romero found that persistent absence in kindergarten was associated with lower academic performance in first-grade, and persistent absence in kindergarten for students in poverty predicted the lowest levels of educational achievement at the end of fifth-grade. Family circumstances were strongly related to child attendance in school. Students in families living in poverty showed greater school absence rates. This could have been a result of lack of stable, affordable housing; lack of reliable transportation;

nutritious food; and limited access to health care.

Ready (2010) also used the ECLS-K data. He found that students who came from low SES backgrounds had the most chronic school absenteeism. High attendance in school was highly correlated to better achievement in literacy in kindergarten and first grade, especially for low SES students (Ready, 2010).

4. Research Question

How do student, school, teacher, and household factors affect fourth-grade student achievement in ELA in NYS schools?

5. Factors

5.1 Student Factors

5.1.1 Students with Disabilities (SWD)

For the purposes of this study, students with disabilities (SWD) were defined as the percentage of students with physical and or mental impairments (NYSED, 2014). Data were retrieved from the 2012-2013 New York State school report cards.

5.1.2 Limited English Proficiency (LEP)

For the purposes of this study, limited English proficiency (LEP) was defined as the percentage of students with limited English proficiency at a grade level (NYSED, 2014). Data were retrieved from the 2012-2013 New York State school report cards.

5.1.3 Economically Disadvantaged (ED)

For the purposes of this study, economically disadvantaged was defined as the percentage of students who participated in, or whose family participated in, economic assistance programs (NYSED, 2014). Data were retrieved from the 2012-2013 New York State school report cards.

5.2 School Factors

5.2.1 Attendance Rate

For the purposes of this study, the attendance rate was defined as students' annual attendance rate in school as reported in the 2012-2013 New York State school report card.

5.2.2 Suspension Rate

For the purposes of this study, the suspension rate was defined as the percent of students suspended from school as reported in the 2012-2013 New York State school report card.

5.2.3 Per-Student Instructional Expenditures

For the purposes of this study, per-student instructional expenditures were the 2012-2013 per-student expenditures reported for each school district by NYSED. Instructional expenditures included teacher salaries, curriculum development and support instructional salaries, BOCES instructional expenditures, other instructional salaries, and other instructional expenses. Instructional expenditures were divided by the number of students in the district to establish the per-student instructional expenditure data.

5.2.4 School Size

For the purposes of this study, school size was defined as the student enrollment for each school reported on the 2012-2013 school report cards.

5.2.5 Class Size

For the purposes of this study, class size was defined as the average student class size for each school as reported on the 2012-2013 school report cards (NYSED, 2015).

5.3 Teacher Factors

5.3.1 Percentage of Novice Teachers

For the purposes of this study, percentage of novice teachers was defined as the proportion of all teachers within the school who had fewer than three years of teaching experience as reported in 2012-2013 New York State school report cards (NYSED, 2015).

5.3.2 Teachers with Master's Plus 30 Credits or Doctorate

For the purposes of this study, teachers with masters plus 30 credits or doctorate was defined as the percentage of all teachers within the school who had a master's degree plus 30 additional credits or a doctorate degree as reported on the 2012-2013 New York State school report cards (NYSED, 2015).

5.3.3 Teachers not Highly Qualified

Percent of teachers who are not highly qualified as reported in the 2012-2013 New York State school report card. To be highly qualified, a teacher must have at least a Bachelor's degree, be certified to teach in the subject area or otherwise in accordance with state standards, and show subject matter competency (NYSED, 2015).

5.3.4 Teacher Turnover Rate

For the purposes of this study, Teacher Turnover Rate for a specified school year is the number of teachers in that school year that were not teaching in the following school year, divided by the number of teachers in the specified school year, expressed as a percentage. Teachers who in year one were reported as providing instruction in one building, but in year two were reported under the district code or another building within the same district are included in the turnover rate (NYSED, 2015).

5.3.5 Teacher Absences

For the purposes of this study, teacher absences were the percentage of teachers in the school who were absent more than ten days of the 2011-2012 school year, excluded days missed for approved professional development.

5.4 Household Factors

5.4.1 Household Structure

For the purposes of this study, household structure was defined by using the 2010 census categories of Family households included a. Husband-Wife family household, and

b. Single Family Household which can be Male family household or Female family household.

5.4.2 Household Size

For the purposes of this study, household size was defined as the number of residents in a household. The 2010 Census data provided seven options for household size, from single resident householder to seven plus resident's household.

6. Research Design and Methodology

The relationships between selected variables reported by NYSED school report card 2012-2013 school year, NYSED fiscal reporting system, Census 2010 School District Demographics System (SDDS), and Civil Right Data Collection (CRDC) were explored in this study using Path Analysis, a special case of structural equation model.

6.1 Data Collection

NYSED school report card was based on data submitted by local school district officials and the results of the state assessments. School officials were provided with an opportunity to review verification reports and make corrections to their data until the reporting deadline (NYSED, 2012).

NYSED fiscal reporting system was based on data reported by school districts on their 2012-2013 annual financial report to NYSED.

School District Demographics System (SDDS) enabled access to school district demographic and related geographic data not available in any other form. SDDS was developed to help community leadership, educators, researchers and analysts, and the public to access and use demographic data to understand current demographic characteristics and patterns of change better, as well as to plan for improved educational programs and opportunities (National Center of Educational Statistics, 2012).

CRDC surveyed a representative sample of schools and districts comprising 85 percent of the students in the country. Forty-four additional data points on school characteristics and demographics from the Department of Education's Common Core of Data complemented the Civil Rights Data Collection survey (CRDC, 2012).

A path analysis special case of structural equation modeling (SEM) (Qian-Li Xue, 2007) was used to explore the relationships between district and school factors, teacher factors, student factors, and household factors, with endogenous variables and how these variables predict ELA grade fourth achievement. Each of these factors consisted of multiple dimensions.

6.2 Selection of Subjects

The related tables were merged into one Microsoft-Access table, the result was 2,061 schools that could be used in the research. Data were imported into SPSS and tested for a normal distribution for each of the variables, at the end 1,263 schools were selected to participate in the study (Cohen, 2015).

6.3 Sample Size

Structural equation modeling (SEM) required large sample sizes, which affected sampling error. The larger the sample collected, the smaller the sampling error would be. Although the general rule of thumb was 20 cases for each free parameter, 10 was a more likely target (Kline, 2005). For this study, the confirmatory factor analysis included 16 distinct parameters, which would have required a minimum of 160-320 samples. The 1,263 schools in this study exceeded these accepted measures of minimum sample size for a SEM study with this number of parameters.

The distribution is an issue here as a statistical tool we plan use requires normally distributed data. One strategy to make non-normal data resemble normal data is by using a transformation. Data transformations are the application of a mathematical modification to the values of a variable. There are a great variety of possible data transformations, from adding constants to multiplying, squaring or raising to a power, converting to logarithmic scales, inverting and reflecting, taking the square root of the values, and even applying trigonometric transformations such as sine wave transformations. Because data transformations can alter the fundamental nature of the data, such as changing the measurement scale from interval or ratio to ordinal, and creating curvilinear relationships, complicating interpretation (Osborne, 2002), the researchers decided to remove non normal distributed data, approximately 6% of the schools (139 schools).

6.4 Validation

To validate the model 2012-2013 data were split into two by random sample. One half (631 schools) was used to create the model and the other half (632 schools) was used to test the model accuracy. In addition the

researchers validated the model on 2013-2014 school year data (1450 schools excluding New York City)

7. Data Analysis and Findings

7.1 Demographic Analysis

NYSED assigned each school district to a category in the Need/Resource Index, which represented the district's ability to meet the needs of its students with local resources (NYSED, 2002). There were no NYC schools in the research database because their data were not normally distributed. There were 90 high-need large city schools (Buffalo, Rochester, Syracuse, and Yonkers), 110 suburban high-need schools, 157 rural high-need schools, 605 suburban average-need schools, and 301 suburban low-need schools. The research database contained 28.3% of high-need schools, 47.5% of average-need schools, and 23.8% of low-need schools.

7.2 Creating ELA Model

For creating the model the 1,263 to each school were split into two. The research database was sorted by the assigned random number, and then divided into two groups. The first group contained the first 631 schools and it was used to build the model, and the second group contained the last 632 schools and it was used to validate the model. Then using structural model technique the model was created carefully, first by sections and then to create the entire model. In the case of variables that strongly correlated each other, we selected the one who correlates most with the dependent variable. Figure 1 in the appendix shows the model for fourth grade ELA achievement in New York.

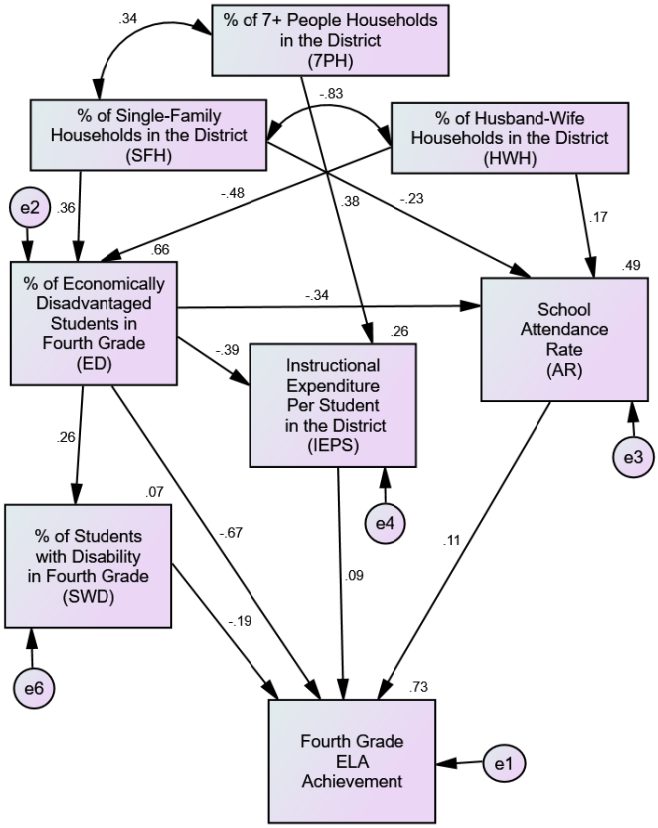

Figure 1 Fourth Grade ELA Achievement Model in NY

8. Model Results

Model is presented in Figure 1 (see appendix). The model shows that the percentage of Single Family Household in a school district (SFH) had a very strong inverse relationship (r = -0.83) with the percentage of Husband-Wife Households in a school district (HWH), and moderate relationship (r = 0.34) with seven plus person household (7PH). This suggested segregation of SFH and HWH each in their districts, and that single family households live in districts with large family households. SFH had a positive contribution (β = 0.36) toward the percentage of economically disadvantaged students (ED), and negative contribution (β = -0.23) to school attendance rate (AR). This suggested that school districts with high percentage of SFH had high population of ED students and low attendance rate in their schools.

7PH had a positive contribution (β = 0.38) to IEPS, suggesting that districts with large family households have high expenditure per student.

HWH had a negative contribution (β = -0.48) to ED and positive contribution (β = 0.17) to AR. This suggested that districts with high percentages of HWH had low population of ED students and high attendance rate in their schools.

ED had a positive contribution (β = 0.26) to students with disabilities (SWD), a strong negative contribution (β = -0.67) on fourth-grade student ELA achievement, an inverse contribution (β = -0.39) to IEPS, and an inverse contribution (β = -0.37) to attendance rate. This suggested that schools with high ED had more SWD students, less expenditure per student, low AR and performed low on ELA state exam. The model R^2 for ED was 0.66, which indicated that 66 percent of the variance in ED was explained by SFH and HWH. This indicated that household structure had a strong relationship with ED.

IEPS had a weak positive contribution (β = 0.09) on fourth-grade student ELA achievement. The model R^2 for IEPS was 0.26, which indicated that 26 percent of the variance in IEPS was explained by 7PH and ED. This indicated that household structure had a moderate direct and indirect relationship with IEPS.

AR had a positive contribution (β = 0.11) to fourth-grade student ELA achievement. This suggested that schools with high attendance rate achieved high on fourth-grade student ELA achievement. The model R^2 for AR was 0.49, which indicated that 49 percent of the variance in AR was explained by SFH, HWH, and ED. This indicated that household structure had a strong direct and indirect relationship with student attendance rate.

SWD had an inverse contribution (β = -0.19) toward fourth-grade student ELA achievement. This suggested that fourth grades with a high percentage of SWD experienced low fourth-grade student ELA achievement. The model R^2 for students with disabilities was 0.07, indicating that seven percent of the variance in students with disabilities was explained by ED.

The model R^2 of fourth-grade student ELA achievement was 0.73, which indicated that 73 percent of the variance in fourth-grade student ELA achievement was explained by ED, IEPS, AR, and SWD. The relationships from the above show how family structure have indirect effect mostly through ED on fourth grade ELA achievement.

8.1 Validating the Model

To validate the model, the other half of the full dataset (n = 632) was used. The first step in validation was to calculate the regression coefficients for fourth-grade student ELA achievement based on the model depicted in Figure 1. Table 1 shows the regression weights for the formula.

Based on the regression weights ELA prediction formula was:

$$ELA_C = 202.14 - 0.379ED + 0.586IEPS + 1.179AR - 0.41SWD$$

IEPS = (Instructional Expenditure per student)/1000, AR = Attendance Rate*100.

To validate the model, Excel was used to compute a column calculated ELA based on the ELA_c formula. The means of ELA_c column of the model population (2012-2013, n = 631) with calculated ELA_c column for the validation population (2012-2013, n = 632) were compared, in addition, the researchers validated the model with 2013-2014 school year data for all NY schools exclude New York City (n = 1450). Table 2 in the appendix shows the Excel comparison results. As shown in Table 2, the RMSE for the initial model was 7.71, RMSE for the first validation (n = 632) was 7.77 less than one percent difference, and the RMSE for the 2013-2014 validation (n = 1450) was 8.34 eight percent difference, suggesting that the model validation was successful. The model had good fit based on major fit measurements as shown by Table 3.

Table 1 Coefficient for Dependent Variable: ELA Grade Achievement

Model	Unstandardized Coefficients		β	t	P
	B	Std. Error			
(Constant)	202.142	28.756		7.030	0.000
% of Economically Disadvantaged	-0.379	0.017	-0.669	-22.395	0.000
District Expenditure per Student/1000	0.586	0.145	0.090	4.041	0.000
School Attendance Rate*100	1.179	0.294	0.113	4.015	0.000
% of Students with Disabilities	-0.410	0.046	-0.192	-8.826	0.000

Table 2 Initial Model and Validation Model Results Comparison

	ELA Model 2012-13 (n = 631)	ELA Validation 2012-13 (n = 632)	ELA Validation 2013-14 (n = 1450)
Actual Mean (AM)	300.55	301.18	299.05
Standard Deviation AM	14.73	15.25	14.92
Calculated Mean (CM)	300.98	301.50	299.40
Standard Deviation CM	12.53	12.82	12.72
Root Mean Square Error	7.71	7.77	8.34

Table 3 ELA Model Goodness of Fit (n = 631)

Model	GFI	NFI	IFI	CFI	RMSEA	λ^2/df
ELA model	0.983	0.986	0.990	0.990	0.060	3.268
Good Fit Range	> 0.95	> 0.95	> 0.95	> 0.95	< 0.08	1 < & < 5

Note: GFI - Goodness of Fit Index, NFI - Normed Fit Index, IFI- Incremental Fit Index, CFI- Comparative Fit Index, RMSEA - Root Mean Square Error of Approximation, λ^2/df - the minimum discrepancy

9. Summary, Conclusions, and Recommendations

The research question was answered by using the model described in Figure 1. AMOS software was used to support SEM to find the best model for predicting fourth grade ELA achievement in NY. Half of the research database was used to build the model and the other half was used to validate the model, in addition to 2013-2014 1450 schools. Model validation and model goodness of fitness were successfully achieved.

The model suggested that student attendance rate in a school could be projected with medium-high accuracy (48%) using single-family household, husband-wife household, and economically disadvantaged. Household structure had the largest contribution to student attendance rate directly and indirectly through ED. This aligned with Baker et al. (2001), Black et al. (2014), Henry (2007), and Ready (2010) who claimed that household

structure was correlated with SES and student absenteeism. Attendance rates as reported on the NYSED report cards were used in this study. However, a school in which 40 percent of its students were absent 20 percent of the school year, reported a 92 percent attendance rate. To increase the awareness on all levels, this research recommends requiring schools to report the number of students with chronic absenteeism in the school report card as it is done in Georgia, Florida, Maryland, Nebraska, Oregon, and Rhode Island (Balfanz & Byrnes, 2012). Asking schools to report the number of students with chronic absenteeism would provide a better picture of the attendance challenge on the school, district, and state levels. It is also important to involve the family in the student attendance issue, as they strongly affect attendance rate.

The model suggested that IEPS could be projected with medium accuracy (26%) by using 7PH and ED. The inverse contribution of ED toward IEPS is an indicator of educational inequality among NYS schools. There is a direct relationship between instructional expenditures per student and high quality teachers and instruction (Hanushek, 2003; Terry, 2011). In our dataset Teachers with master's plus 30 credits was highly correlated (r = 0.62) with instructional expenditures per student, suggesting that experienced and high quality teachers were teaching in school districts with high instructional expenditures per student. This study's findings supported the conclusion that there was an achievement gap among students from different SES, and that inequality in resources helped to keep this gap stable.

The model suggested that SWD could be projected with weak accuracy (7%) by using ED. This phenomenon was explained by Howard et al. (2009) who suggested that the ED-SWD relationship is due to school teachers and administrators misunderstanding and prejudice of students from low SES. The fact that there was a positive relationship between SWD and ED is increasing the inequality gap between low SES schools and affluent schools as low SES schools need to allocate higher percentage of their IEPS toward SWD students.

The model suggested that percentage of fourth grade economically disadvantaged students could be projected with high accuracy (66%) by using SFH and HWH. Husband-wife household and male household had the highest contributions suggesting that household structure had the strongest contribution toward student socioeconomic status. This aligned well with Mayer (1997), Toutkoushian and Curtis (2005), Cancian and Reed (2009), and DeNavas-Walt and Proctor (2014) who pointed the close relation between household type and SES. DeNavas-Walt and Proctor (2014) reported that the poverty rates in the U.S. for 2013 were 5.8 percent for husband-wife householders, 30.6 percent for families with a single-female head, and 15.9 percent for families with a single-male head. This supported the risk of poverty for single head-of-household families. Single-female heads were five times more likely live in poverty than were married couples, and single-male heads were twice as likely to live in poverty as were married couples.

The ELA model suggested that fourth-grade student ELA achievement could be predicted with high accuracy (73%) using the ED, SWD, AR, and IEPS. The regression formula suggested that approximately an increase of $1,800 per student will result in additional point in ELA results, and each .85 percent increase in attendance will result in additional point in ELA results.

However these resources are limited, as there is a limit for increasing IEPS, and there is a limit for improving attendance. A correct method might be to support an increase IEPS to schools with high need and are below the average IEPS, as well as provide a plan to increase attendance. In addition, the formula projected an ELA score, future research should look at schools who perform higher than the projected ELA, analyze their teaching methodologies and strategies, school leadership, and provide recommendation for other schools.

The strong correlation and high effect size ($r^2 \approx 48\%$) of husband-wife household on ELA achievement, and

the strong inverse correlation and high effect size ($r^2 \approx 41\%$) of single family household on ELA achievement (Cohen, 2015). It appears from the results of the model presented in Table 4 school districts with high percentage of husband-wife households had indirect positive effect of 40% on achievement while school districts with high percentage of single-family households had indirect negative effect of 31% on achievement. Residences of school districts with high percentage of single-family households were at higher risk to live in poverty and their fourth grade kids were at higher risk for: (1) being diagnosed as students with disabilities, (2) encounter low attendance in school, (3) face low expenditure per students in their district, (4) not having high quality teachers in their schools, and (5) perform low on ELA state exam.

Table 4 Model Direct and Indirect Effect of Variables on ELA Achievement

	Direct	Indirect	Total
% of Single Family Households in the District		31%	31%
% of Husband-Wife households in the District		40%	40%
% of Economically Disadvantaged Students	67%	12%	79%

10. Recommendations

The following recommendations are made for school leaders.

(1) Address student absences. Although it is often beyond school control, it is important to educate families about the importance of school and the negative effect of absenteeism.

(2) Minimize student suspensions. High rates of student suspension cause damage to the suspended students and lower the achievement rates of the school. Schools need to find other intervention plans that will keep the student in the school.

(3) Teach students at middle school and high school about family, its values, and the essence of good parenting. This information will provide better understanding for students about their roles as future parents, and might save the next generation from repeating mistakes.

The following recommendations are made for state leaders.

(4) Use the formula or develop a similar one to compare school performances.

(5) Instruct schools to report students with chronic absenteeism in their annual reporting.

(6) Provide incentives for quality teachers to teach in high need schools.

References

Bachman H. J., Coley R. L. and Chase-Lansdale P. L. (2009). "Is maternal marriage beneficial for low-income adolescents?", *Applied Developmental Science*, Vol. 13, No. 4, pp. 153-171.

Baker M., Sigmon J. and Nugent M. (2001). *Truancy Reduction: Keeping Students in School*, Washington, DC: Office of Juvenile Justice and Delinquency Prevention, U. S. Department of Justice.

Balfanz R. and Byrnes V. (2012). "The importance of being in school: A report on absenteeism in the nation's public schools", *Education Digest: Essential Readings Condensed for Quick Review*, Vol. 78, No. 2, pp. 4-9.

Black A. T., Seder R. C. and Kekahio W. (2014). *Review of Research on Student Nonenrollment and Chronic Absenteeism: A Report for the Pacific Region*, Washington, DC: U.S. Department of Education.

Cancian M. and Reed D. (2009). "Family structure, childbearing, and parental employment: Implications for the level and trend in poverty", *Focus*, Vol. 26, No. 2, pp. 21-26.

Chang H. and Romero M. (2008). "Present, engaged and accounted for: The critical importance of addressing chronic absence in the early grades", National Center for Children in Poverty, available online at: http://www.nccp.org/publications/pdf/text_837.pdf.

Civil Rights Data Collection (CRDC) (2008). "FAQ/User guide — Overview", available online at: http://ocrdata.ed.gov/Overview.

Cohen Y. (2015). "Structural equation modeling to predict fourth grade student achievement (Order No. 3663077)", available from Dissertations & Theses @ Dowling College (1687763060).

Coleman J. S., Cambell E., Hobson C., McPartland J., Mood A., Weinfeld F. and York R. (1966). *Equality of Educational Opportunity*, Washington, DC: U.S. Government Printing Office.

Crosnoe R. and Wildsmith E. (2011). "Nonmarital fertility, family structure, and the early school achievement of young children from different race/ethnic and immigration groups", *Applied Developmental Science*, Vol. 15, No. 3, pp. 156-170.

DeNavas-Walt C. and Proctor B. D. (2014). "Income and poverty in the United States 2013", *U.S. Census — Current Population Reports*, September, pp. 60-249.

Hampden-Thompson G. (2009). "Are two better than one? A comparative study of achievement gaps and family structure", *Compare: A Journal of Comparative and International Education*, Vol. 39, No. 4, pp. 513-529.

Hanushek E. A. (1986). "The economics of schooling: Production and efficiency in public schools", *Journal of Economic Literature*, Vol. 24, No. 3, pp. 1141-1177.

Hanushek E. A. (2003). "The failure of input-based schooling policies", *Economic Journal*, Vol. 113, No. 485, pp. 64-98.

Henry K. L. (2007). "Who's skipping school: Characteristics of truants in 8th and 10th grade", *Journal of School Health*, Vol. 77, No. 1, pp. 29-35, doi:10.1111/j.1746-1561.2007.00159.x.

Howard T., Dresser S. and Dunklee D. (2009). *Poverty Is Not A Learning Disability*, Thousand Oaks, CA: Corwin Press.

Kline R. B. (2005). *Principles and Practices of Structural Equation Modeling* (2nd ed.), New York, NY: The Guilford Press.

Osborn J. (2002). "Practical research, assessment and evaluation", retrieved 1/24/15, available online at: http://pareonline.net/getvn.asp?v=8&n=6.

Mayer S. E. (1997). *What Money Can't Buy*, Cambridge, MA: Harvard University Press.

National Center of Educational Statistics (1997). "What is school district demographics system?", available online at: http://nces.ed.gov/surveys/sdds/about.aspx.

New York State Education Department (2002). "Statistics for public school districts", available online at: http://www.p12.nysed.gov/irs/chapter655/2002/ glossary_June_2002.htm.

New York State Education Department (August, 2013). "Release of data — August 7, 2013", supplemental slides, Information and Reporting Services, available online at: http://www.p12.nysed.gov/irs/pressRelease/20130807/home.html.

New York State Education Department (May, 2014). "Reporting data for 2013-2014 school year", available online at: http://www.nysldstac.org/wp-content/uploads/ 2014/ 05/SIRS-Manual-v9.14.pdf.

New York State Education Department (2015). "Glossary of terms — Report cards data", available online at: http://data.nysed.gov/glossary.php?report=reportcards.

Qian-Li Xue (2007). "Structural equational models", The Johns Hopkins University, retrieve on 1.24.2016, available online at: http://ocw.jhsph.edu/courses/structuralmodels/PDFs/Lecture8.pdf.

Ready D. D. (2010). "Socioeconomic disadvantage, school attendance, and early cognitive development: The differential effects of school exposure", *Sociology of Education*, Vol. 83, pp. 271-286, doi101177/0038040710383520.

Terry J. W. (2011). "Where does money matter: The impact of expenditures on student achievement", Order No. 3467971, Texas A&M University, ProQuest Dissertations and Theses, 102, available online at: http://0-search.proquest.com.library.dowling.edu/docview/884797530?accountid=10549. (884797530)

Toutkoushian R. and Curtis T. (2005). "Effects of socioeconomic factors on public high school outcomes and rankings", *Journal of Educational Research*, Vol. 98, No. 5, pp. 259-271.

U.S. Census Bureau (2012). *Households and Families: 2010*, 2010 Census Briefs, Washington, D.C.

Weisner T. S. and Garnier H. (1992). "Nonconventional family life-styles and school achievement: A 12-year longitudinal study", *American Educational Research Journal*, Vol. 29, No. 3, pp. 605-632.