To the men in my life, Adam, Noah, Liam and Adyn, for their love, support and hugs
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The purpose of this research was to address the public policy of adequacy by the creation of a Florida state-wide poverty index model to assist in the distribution of state and local dollars in funding public education. This poverty index model would measure the amount and severity of poverty in every public school within the state each year and determine how much money should be allocated to each school beyond the basic allocation now in existence by using Adequate Yearly Progress (AYP) data. This poverty index model would address the funding for schools with a disproportionate percentage of students living in poverty. This study was composed of three sequential and compounding studies. A Hierarchical Linear Model (HLM) statistical procedure determined if adding school level data would increase predictability as opposed to solely using school district data to make financial decisions. In addition, the HLM model determined that including school level data, beyond district level data, increased the predictability of student performance and all chosen AYP variables were significant in predicting student performance. A Structural Equation Modeling (SEM) analyzed possible paths and strength of paths from Free and Reduced Lunch percentages at the
school level to student achievement at the school level based on performance on the state mandated Florida Comprehensive Achievement Test (FCAT). To conclude, a weighted formula was developed to increase funding to Florida students focused on addressing poverty and supplemental indicators. The weights were guided by the direct and indirect paths determined in the SEM model. The creation of this funding index could be utilized by the state legislature in determining an adequate funding level for all public elementary and secondary students in the state and thus to enhance the Florida Education Finance Plan (FEFP).
CHAPTER 1
INTRODUCTION TO STUDY

Overview of Topic

The Florida Legislature funds public elementary and secondary education via the Florida Education Finance Plan (FEFP). It has been proven to be highly equitable to both students and to taxpayers. Every state legislature has a funding mechanism in existence that can be enhanced by a variety of factors. Arguably, the present Florida funding formula methodology could be enhanced by greater vertical adjustments focusing on adequately distributing state and local taxes for funding public education within the state. The purpose of this research was to address the public policy of adequacy in education funding in a selected state. More specifically, the research was to improve adequacy in the state of Florida without following the typical trend of education reform by following state litigation. Using a more proactive approach the adequacy of the state of Florida’s funding mechanism could be improved by adding an


index designed to help fund schools with a disproportionate number of impoverished students.

FEFP was implemented in 1973 and is considered to be one of the nation’s most equitable funding formulas for state education. However, this almost four decade old formula has stood firm regarding equity but as time has passed groundwork has been laid to focus on the specifics of adequacy. There have been failed attempts to contest the adequacy of FEFP but the definition of adequacy was not yet developed. However, due to constitutional revision adequacy is soon becoming a very defined and arguable concern for FEFP.

FEFP is considered highly equitable; which describes the equitable spending per student among districts. The formula is composed of state and local dollars that are distributed to all sixty-seven districts with slight discrepancy between them. What is not addressed in FEFP is the possible need for some school districts to receive considerably larger funds in order to meet standards as prescribed in Florida Comprehensive Assessment Test (FCAT).

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The Florida Constitution states:

The education of children is a fundamental value of the people of the State of Florida. It is, therefore, a paramount duty of the state to make adequate provision for the education of all children residing within its borders. Adequate provision shall be made by law for a uniform, efficient, safe, secure and high quality system of free public schools that allows students to obtain a high quality education.9

The Florida Constitution has been amended by the Florida voters to include this constitutional passage. Because of this revision it can be argued that equity is no longer the driving force for public education. One could argue that a greater degree of inequity may be the solution to address adequacy.

Currently there is slight disparity between districts regarding base student allocation and the supplemental vertical adjustments. Outside of FEFP’s control are external factors that cannot be controlled by the school districts or schools within the district. Although many low-income communities benefit from being in a property-rich school district there may be justification to provide to the low-income schools additional funding beyond the equitable funding provided by FEFP because FEFP does not take into account family income. Florida has only sixty-seven school districts with some educating over 300,000 students. For example, the Miami-Dade school district educates 339,716 active students as of January 27, 2010.10 These students reside in a school district that has over 400 institutions,11 covering over 1900 square miles

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9 Fla. Const. art. IX, § 1.
10 Live school district student enrollment detail provided by Miami-Dade County Schools. Today’s Student Enrollment, available at http://www.dadeschools.net/StudentEnroll/Calendars/enroll_stats_aor.asp (last visited January 27, 2010).
according to the US Census Bureau.¹² This school district accounts for the most wealthy and impoverished student population in Florida. FEFP has distributed funding equitably within Miami-Dade school district; however it can be argued that a district that large must have disparities within. For example, schools which have more experienced faculty will have a larger amount of funding allocated toward teacher salary compared to a school with a younger less experienced faculty. In addition, there are external factors such as involved parents and community support without these resources being supplied on a volunteer basis schools would require additional funds to provide these benefits to their students.

**Statement of the Problem**

This study focused on providing and analyzing additional vertical equity supplements at the school level that could address adequacy needs between and within districts. These vertical equity supplements were possible poverty indicators. Will an addition of a poverty index model increase the equity and adequacy of FEFP? In addition, can the state use Adequate Yearly Progress (AYP)¹³ reports to efficiently identify schools with disparate needs related to poverty?

**Significance of the Study**

Public funding in the United States varies significantly among states. Few states include a poverty consideration in the manner of distributing fiscal resources. A poverty index has been utilized or proposed by state legislatures in such states as Oregon,¹⁴

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¹⁴ ORS 327.013(7)(a)(E)(i)
Pennsylvania,\textsuperscript{16} Ohio,\textsuperscript{16} New Jersey,\textsuperscript{17} Missouri,\textsuperscript{18} Montana,\textsuperscript{19} and Rhode Island.\textsuperscript{20} All of which are significantly different both through implementation and outcome. Generally the use of Free and Reduced Lunch data determines the level of need for schools and districts. The intent of this study was to create a more accurate measure for determining poverty at the school level. Free and Reduced Lunch data have many limitations that will be discussed further. The research examined other predictors of poverty and created a more accurate and reproducible formula to determine levels of poverty at the school level. The intent was to enable the Florida Department of Education to more efficiently and accurately determine the level of poverty for all Florida public schools to establish yearly supplemental funding allocation for education.

This study was designed to increase the equity and adequacy of a selected state education financial distribution formula. In addition, alternative poverty indicators could help identify families in need supplementing the current poverty identification system; Free and/or Reduced Lunch percentages. Legislatures are limited given the lack of additional revenue to investigate a more sophisticated poverty measurement. Because of the revenue shortage and the immediate assistance a poverty index in the state


\textsuperscript{18} See State Aid RSMo 1959 § § 161.031; 161.061 (2009)

\textsuperscript{19} See Mont Code Ann § 20-9-328 (2009) At-Risk Student Payment

funding formula could address, the use of a data source that is in existence was investigated. Using the AYP reports to identify additional poverty indicators that can be included in a more refined formula could be integrated into the existing formula or remain isolated as a supplemental funding formula. This formula would allow schools to obtain additional funds for student poverty intervention. Children from poverty can benefit from additional counseling, healthcare, and academic guidance and facilitation funded by the proposed poverty index.

**Methodologies and Outline of the Study**

This study was composed of three phases. All phases incorporated the use of already existing data provided by the AYP data mandated by No Child Left Behind (NCLB). Phase one incorporated the use of Hierarchal Linear Model (HLM) statistical procedure to determine if adding school level data would increase predictability as opposed to solely using school district data to make financial decisions. In addition, the HLM model determined that including school level data, beyond district level data, increased the predictability of student performance and all chosen AYP

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21 The proposed interventions are not the focus of this study. These interventions are considered future research. The formula is intended to supply the funding support for student interventions. For example, see Campbell, Frances A., Craig T. Ramey, Elizabeth Pungello, Joseph Sparling, Shari Miller-Johnson. 2002. “Early Childhood Education: Young Adult Outcomes From the Abecedarian Project.” *Applied Developmental Science* 6(1): 42-57; Amatea, Ellen S. and Cirecie West-Olatunji. 2007. “Joining the Conversation about Educating Our Poorest Children: Emerging Leadership Roles for School Counselors in High-Poverty Schools; and Full-Service schools.” *American School Counselor Association* 11(2): 81-89.


23 Raudenbush, Stephen W. and Anthony S. Bryk. 2002. *Hierarchical Linear Models: Applications and Data Analysis Methods*. Thousand Oaks: Sage Publications: 7. As defined by a multi-level analysis of nested data. “With Hierarchical linear models, each of the levels in this structure is formally represented by its own submodel. These submodels express relationships among variables within a given level, and specify how variables at one level influence relations occurring at another.” For this study the HLM model consists of two levels: school and district.
variables were significant in predicting student performance. Phase two utilized Structural Equation Modeling (SEM) to analyze possible paths and strength of paths from Free and Reduced Lunch percentages at the school level to student achievement at the school level based on performance on the state mandated Florida Comprehensive Achievement Test (FCAT). The third phase took the hypothesized paths of phase two to incorporate into a Poverty Index Formula. In conclusion, possible funding sources and limitations were addressed.

Data Sources and Limitations

In 1998, Florida developed the Florida Comprehensive Achievement Test (FCAT). The FCAT is a criterion referenced test based on Florida Standards and the standards developed through NCLB. FCAT Reading and Mathematics were first administered to students in Grades 4, 5, 8, and 10. FCAT was expanded to include Grades 3 through 10 in 2001 and to include FCAT Science in 2003. Through the development and administration of FCAT, the Florida legislature began to use FCAT scores as “high stakes” scores by determining 3rd grade promotion and high school graduation based on meeting “High Standards” in Math, Reading, Science and


26 See Fla. Rev. Stat. K-12 Education Code XLVIII § Fla. 1008.22(3)(c)(10)(2009) for the reliance of FCAT on the Sunshine State Standards. Sunshine State Standards are in compliance with NCLB requirements via http://www.fldoe.org/NCLB/adequate_yearly_progress.asp “The Federal No Child Left Behind Act of 2001 requires states to evaluate the performance of all students in all public schools in order to determine whether schools, school districts, and the state have made adequate yearly progress (AYP). Florida’s approved accountability plan uses the same FCAT test and definitions of ‘grade level’ as does the A+ Plan and includes specific criteria for determining and reporting AYP for all schools”


“Students are classified into one of five performance levels based on their FCAT scale scores.”^30^ Level one is the lowest performing and five is the highest. The “High Standards” determination is measured for students who score in level 3 or above achievement level.31 Schools are graded based on student performance on the FCAT. These grades are related to additional funds or in some cases extreme consequences that can ultimately end in state takeover.

Although the “high stakes” use of FCAT is largely argued and considered a polarizing topic in education,32 the author of this study intended to use the supplemental data and score data that were collected in conjunction with the annual assessment to determine additional uses of these data specifically focused on Florida educational funding. In addition, “…socioeconomic status has a stronger relationship with these [performance testing] outcomes in states that link test performance to consequences for schools.”33

Data collection is an expensive and time consuming endeavor. The multiple uses of existing Florida data are cost effective and efficient. This allows for a state agency to

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be efficient when using state dollars and public tax funds. This study utilized data collected for Florida’s Annual Yearly Progress (AYP) reports that were established following the yearly FCAT. Four specific reports of data were used: the 2006-07 School-Level Data from the Florida School Indicators Report, 2007-08 School-Level Data from the Florida School Indicators Report 2006-2007 School Grades, and 2007 Small Area Income & Poverty Estimates (SAIPE) data collected through the U.S. Census Bureau.³⁴

³⁴ U.S. Census Bureau. Small Area Income & Poverty Estimates (SAIPE), available at http://www.census.gov/did/www/saipe/ (last visited April 20, 2010). SAIPE data was only used for phase one HLM study. These data were not included in phase 2 or phase 3. Phase 3 will use 07-08 data to discuss possible monetary values when using the proposed Poverty Index Formula.
Financial equity and adequacy are two theories of education finance that are constantly in conflict similar to that of reliability and validity. Equity tends to focus on a concept termed *horizontal equity*, which is the equitable treatment of equals.¹

Horizontal equity requires that all students receive equal shares of an object, such as total local and state general revenues per pupil, total current operating expenditures per pupil, instructional expenditures per pupil, or minimum scores on student criterion-referenced assessments. Horizontal equity is embedded in the standards-based education reform goal of teaching all students to high standards.²

Adequacy more aligns with *vertical equity*, which is the unequal treatment of “unequals” to increase equity.³ That is to say that there are certain characteristics of children, districts, and programs that will entail distributing more resources in order for students to perform better in school.⁴ Examples of characteristics that may warrant additional resources include children who live in poverty, districts with enrollment growth or decline, and specific school programs like a magnet program.⁵


⁴ Odden and Picus, *School Finance: A Policy Perspective*, at 72

Vertical equity is more complex and polarizing than horizontal equity because assumptions now rely on personal values and preferences. Horizontal equity assumes all students are equal. Vertical equity assumes all students are not, thus giving value to certain characteristics. Although it is fair to say that all school finance experts agree that students are not all equal they do not agree on how to incorporate vertical equity standards in order to provide additional resources. For example, there are school finance experts that entirely support additional funding for gifted students where as in contrast there are experts that consider this a student characteristic that does not warrant additional funding sources in an already strained budget.\(^6\)

**Historical Equity Statistics**

Equity is determined using fairly consistent statistical measures. Restricted Range Ratio was one of the first formulas used to determine financial equity within Local Education Agencies (LEAs).\(^7\) However, due to inflation the Restricted Range Ratio may provide calculations that are misleading and difficult to determine true equity. In efforts to improve financial measurements the Federal Range Ratio was created to eliminate the influence of inflation on the Restricted Range.\(^8\) The Federal Range Ratio is commonly referred to as the Disparity Index.\(^9\) The Disparity Index determines the range of LEA spending within the state. The intent was to reduce the disparity between districts. Additional financial equity measures are the Wealth Neutrality test which

\(^6\) *Ibid.* at 72 and 86-149  
\(^8\) *Ibid.*  
discusses equity for the taxpayer. This Index is not used as often because of the disconnect between taxpayer and school district.\textsuperscript{10}

**Equity and the Taxpayer**

There are constitutional guarantees and statutes that provide some protection for citizens from inequitable taxes,\textsuperscript{11} but in general, taxpayers do not receive the degree of legal protection afforded pupils attending public schools. However, the wealth neutrality test, with its focus exclusively upon taxpayer equity, elevates the stature of taxpayer equity to that of pupil equity. There are no requirements contained within the wealth neutrality test for state legislatures to provide a base or minimum level of educational services for public school students, and states conceivably may implement wealth-neutral systems of school finance while permitting enormous variance in the quality of educational services provided to pupils among local school districts.\textsuperscript{12}

**Contemporary Equity Measurement: An Approach to Adequacy**

More appropriate measures used to determine equity are the use of the standard deviation and the Coefficient of Variation.\textsuperscript{13} In addition, McLoone’s Index is a measurement of equity. However, McLoone’s Index begins to analyze the adequacy component of education finance by incorporating the median and all districts below the median. This allows the lower spending districts to gain attention when discussing

\footnotesize


equitable funding.\textsuperscript{14} In the Federal Range Ratio the lowest and highest 5 percent are removed from the formula to eliminate the outliers,\textsuperscript{15} the McLoone’s Index discusses the importance of the lower districts involvement in funding the education of the state’s children. This index is one of the first to address the issue of unequal funding to equalize outcomes: Adequacy.

**Adequacy**

Adequacy is very complicated to measure and only recently attempted to be defined in the Florida constitution. “Adequate provision shall be made by law for a uniform, efficient, safe, secure and high quality system of free public schools that allows students to obtain a high quality education.”\textsuperscript{16} This mandate in the Florida state constitution weighs heavily on value judgments and individual perceptions and opinions. At this point it appears that “high quality education” is measured using student achievement.\textsuperscript{17} However, uniform, efficient, safe, secure and high quality system are still terms that have not been fully defined and tested.


\textsuperscript{15} The author finds the argument for eliminating outliers in the Federal Range Ratio to be troubling considering an outlier is a score that is more notably far away from the center of the distribution. District funding dollars should not be considered an outlier if in fact it is the actual dollar amount spent per child in a given district. In addition eliminating 10\% of the state’s students from calculations is intentionally eliminating students from the funding process and decision making. That alone could contradict the efforts of equity and adequacy.

\textsuperscript{16} Fla. Const., art. IX, § 1.

\textsuperscript{17} Note: currently in support of President Obama and Arne Duncan’s use of standardized tests to evaluate teacher performance, Florida legislators have linked teacher compensation to student performance on standardized assessments. Senate Bill 6 sponsored by Sen. John Thrasher, requires school districts to evaluate and pay teachers based primarily on performance on standardized assessments. S6 General Bill/CS/CS/2nd Eng 20106e2.
Equity, Adequacy and Poverty

According to the U.S. Department of Commerce, Bureau of Census, 2007 American Community Survey, there are approximately 9,016,622 children ages 5-17 (school age) that fall below the national poverty level. Arguably this estimate is lower than the actual number of impoverished children due to the limitations of self-reported survey design and the limitations of the official poverty measure, including geographical variation in cost of living. \(^{18}\)

**Poverty Rate History**

Poverty rates were established in the 1960s and have been adjusted since only for inflation. Originally, the Poverty Index was formulated to consider only the cost of food. Food was considered in the 1960s as one-third the average family expense. The Poverty Index is calculated as three times the cost of food. \(^{19}\) This simple calculation is rudimentary when considering the severity and scope of poverty. The formula is also dated and does not reflect the Twenty-First Century average family expense. As Fass notes:

> Food now comprises only one seventh of an average family’s expenses, while the costs of housing, child care, health care, and transportation have grown disproportionately. Thus, the poverty level does not reflect the true cost of supporting a family. In addition, the current poverty measure is a national standard that does not adjust for the substantial variation in the cost of living from state to state and between urban and rural areas. \(^{20}\)

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\(^{19}\) Ibid.

\(^{20}\) Fass, “Measuring Poverty in the United States.”
Fass argued that the average family has additional costs that did not exist or were not as large a proportion of the family expenses in the 1960s. She pointed out the distinction between transportation, housing, healthcare and childcare costs from then to now.

In addition to the limitations in the formula, Fass addresses the geographical disparity limits the effectiveness of the formula. Poverty Levels as defined by statute do not vary between the cost of living between states and urban/rural areas.\textsuperscript{21} For example, a child in a family of four wishing to qualify for free meals in the Free and Reduced Lunch Program must come from a family that earns less than $27,560 annually.\textsuperscript{22} If this child were to live in Enid, Oklahoma the cost of living would be much smaller in comparison to the child living in Chicago, Illinois. According to City-data.com the median house value in Enid, OK was $85,436 in 2007 and the median house value in Chicago, IL was $286,800 in 2007. The national guidelines for poverty can have enormous disparity depending on the location where the individual resides; there is no sliding scale or adjustable funding mechanism.

**Federal Funding Mechanisms Address Poverty**

For the national public education system there are two major federal funding aids for impoverished student populations. Title 1 funds and the National School Lunch Program (Also known as Free and Reduced Lunch Program) are the nationally

\textsuperscript{21} *Ibid.*

\textsuperscript{22} *Federal Register.* 2008. 73(69).
mandated aid programs.\textsuperscript{23} Both programs have similar limitations to those of the Federal Poverty Level.

State legislatures are responsible for distributing Title 1 funds and managing the Free and Reduced Lunch Program (F&RL). Although there is a national mandate, state legislatures can include an additional funding provision within the state funding formula if the state legislature deems necessary. However, public education is a state concern and the disparity between states is not, at this point, a dilemma that can even be addressed. Regardless of the state to state disparity, state legislatures use some form of income criteria modeled from the Federal Poverty Index. This again creates limitations within the identification process of families in poverty.

\textbf{Disparities Between and Within School Districts: HLM study}

Similar to most evaluations of the United States education system, the use of student achievement outcomes as accountability measures appear to be the trend in all components of education from curriculum writing to financing. "This shift is being driven by an emerging consensus that high minimum outcomes should be the orientating goal of both policy and finance."\textsuperscript{24} This is the initial reasoning for using the already in existence Adequate Yearly Progress (AYP) data. By linking district and school variables to student performance the argument for alignment of school funding to student outcomes has begun.

The variables chosen for the analysis for both district and school data were selected based on research indicating links between certain student and school

\textsuperscript{23} \textit{Ibid.}

characteristics to low socioeconomic (SES) trends. As reflected in a statement from Ma and Klinger “School mean SES was significant in mathematics, reading, and writing achievement.” To begin this discussion the use of words like poverty, low SES, and disadvantaged students were intermingled. The discussion of poverty centers on all the components of an impoverished lifestyle. This is not a conversation that takes into account only family income or Free and Reduced Lunch Programs or any other specific poverty indicator. The intention is to draw from as many indicators as possible to circumscribe all attributing factors that can create an environment that would disadvantage our students within a school.

Adequate Yearly Progress (AYP) reports give percentages of possible poverty indicators. The indicators chosen for this study were: absenteeism, Out-of-Field teachers, school suspension, and Free and Reduced Lunch participation all are identified in the research literature.

“Absenteeism is strongly associated with child poverty, with pupils at primary school being much more likely to be affected by an area’s economics and employment….School absentees normally start the habit of non-attendance when they


27 As measured by percent of children absent twenty-one days or more.

28 As measured by percent of classes taught by teachers not certified in the subject being taught.

29 As measured by percent of students suspended from school. Both in-school suspension and out-of-school suspension were considered for this variable.

30 As measured by percent of students who qualify for the Free and or Reduced Lunch program.
are at primary school, with child poverty as a main associated factor." Because data were measured by students who are absent 21 or more (21+) days data could also indicate a transient population that could also be a possible poverty indicator.

"[Poor and low income communities] are often taught by the least-qualified teachers.... [This is a] reason why such students often perform poorly in educational assessments...Data show that, indeed, school poverty levels are clearly related to the amount of out-of-field teaching." Including out-of-field teachers as a poverty indicator was supported by data indicating staffing problems were more prevalent in high poverty schools.

Free and Reduced Lunch percentages are provided as self-reported data by parents and are not verified by school districts. Research indicates that Free and Reduced Lunch percentages may be misleading due to self-selection and omission. In addition to parents opting out, student participation was more difficult to track in the higher grade levels. In a study done in England based on a similar lunch program Zhang stated:

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The number of pupils that take up free school meals, as reported by schools, is not a true figure for free school meal entitlements. This is because many parents choose not to register their children’s entitlements, quoting ‘stigma’ and ‘being different from other kids’ as their major concerns . . . .

School violence and discipline issues lead to school suspension as a documented intervention. “School violence emerges from deeper problems in American society, such as high levels of poverty among children…” Suspension data not only could indicate students in poverty it also has the ability to indicate schools that have high risk students who would also benefit from additional interventions provided by the proposed additional funding.

34 Zhang, “Links Between School Absenteeism and Child Poverty,” 10-17 (citation omitted).

CHAPTER 3
HIERARCHICAL LINEAR MODEL

This HLM study examined the added benefit and predictability of incorporating school level data into education finance decisions. This study used data collected for Florida’s Adequate Yearly Progress (AYP)\(^1\) reports that are established following the yearly FCAT.\(^2\) Three specific reports of data were used, the 2006-07 School-Level Data from the Florida School Indicators Report,\(^3\) 2006-2007 School Grades,\(^4\) and 2007 Small Area Income & Poverty Estimates (SAIPE) data collected through the U.S. Census Bureau.\(^5\)

In addition to examining the increased predictability of school level data the study also addressed the relationships of all the variables to the academic outcome of “High Reading Standards.”\(^6\) The “High Reading Standards” in this study were solely comprised of student performance on the FCAT.\(^7\) This discussion about the

\(^{1}\) 20 U.S.C. § 6301 Sec. 1111 (b)(2)(B).


\(^{4}\) Florida Department of Education. School Grades, available at http://schoolgrades.fldoe.org/ (last visited April 1, 2010), access school grades for the 2006-2007 school year


relationships between the indicators and student performance began to address the adequacy concerns outlined in the amended Florida Constitution regarding adequacy and the definitions of quality education. These goals are contained within the Florida Constitution as follows:

The education of children is a fundamental value of the people of the State of Florida. It is, therefore, a paramount duty of the state to make adequate provision for the education of all children residing within its borders. Adequate provision shall be made by law for a uniform, efficient, safe, secure and high quality system of free public schools that allows students to obtain a high quality education.\textsuperscript{8}

This aspirational statement in the Florida constitution is being applied by state legislators by connecting the “obtaining a high quality education” and state standardized assessments. These standardized assessments are the measuring stick used to determine student performance, quality of education, and quality of instructor.\textsuperscript{9}

\textbf{Method}

Due to the organization of data received from the Florida Department of Education (FLDOE) only elementary schools were used for this study. Schools were considered Level 1 sampling unit (N=1,765) nested within districts that were the level 2 sampling unit (N=66). The dependent variable was the school level percentage of students meeting "High Reading Standards" on the FCAT.\textsuperscript{10} Because of the administration of FCAT the elementary students tested were in grades 3, 4, and 5. The independent variables were percentage of students absent twenty-one days or more, expenditures

\textsuperscript{8} Fla. Const. art. IX, § 1.

\textsuperscript{9} \textit{Connecticut Coalition for Justice in Education Funding (CCJEF) v. Rell}, SC 18032

\textsuperscript{10} High Reading Standards are students who receive a 3, 4, or 5 on the FCAT reading criterion reference assessment administered in grades 3, 4, and 5.
for regular education students, percentage of students who qualified for Free and Reduced Lunch, and percentage of classes taught by Out-of-Field teachers.

Although the use of elementary school data were determined for this study there were obvious limitations within these data. For example, elementary students had fewer days absent in comparison to middle and high school students. Although the absenteeism was interesting and certainly addressed an education concern it is important to remember that the K-12 relationship was not the focus of the study. There was no issue with not focusing on the K-12 relationship because there was no generalization. In addition, because of state certification standards and course offerings at the high school and middle school levels Out-of-Field teachers were more prevalent in the secondary schools than primary because of the breadth of certifications required for middle and high schools in comparison to elementary schools.

However, data collected for Free and Reduced Lunch were more accurate at the elementary level, due to lack of participation and tracking at the middle and high school level.\(^1\) Again there were additional concerns regarding Free and Reduced Lunch that were not addressed in this HLM study. For this study and the following Structural Equation Path Analysis study, Free and Reduced Lunch percentages were considered data that could be examined if the researcher were cognoscente that these data were inherently limited. Free and Reduced Lunch data are used often in research studies.

and are considered a proxy for poverty.\textsuperscript{12} Regardless of the limitations, researchers consider Free and Reduced Lunch data to be variables of interest with significant relationships with multiple exogenous and endogenous indicators.

The school district independent variables were all the school districts’ percentages for the school level independent variables with an addition of a Small Area Income & Poverty Estimates (SAIPE) datum variable; percentage of impoverished children ages 5 to 17 living in the school district.\textsuperscript{13} These data included students within a school district who attended a school that would be considered public, private, and home-school. The SAIPE datum was used as a district poverty indicator to determine the overall impoverished nature of the school district. SAIPE data are estimated yearly to allow for more accurate population estimates in comparison to the decennial census.\textsuperscript{14}

\textbf{Statistical Procedure}

Data collected from both SAIPE and FLDOE were both open access reports displayed yearly on the respective websites.\textsuperscript{15} SAIPE data were organized by state, county and school district. For this study the school district data were used. FLDOE data were organized as both school data and district data. Because of unique school


\textsuperscript{13} U.S. Census Bureau. SAIPE

\textsuperscript{14} \textit{Ibid.}

\textsuperscript{15} \textit{Ibid}; 2006-07 School-Level Data from the Florida School Indicators Report.
characteristics and data complications one district was removed from the analysis and schools that are considered grossly alternative were removed (i.e. schools affiliated with the department of corrections).\textsuperscript{16}

The independence assumption was threatened because schools were nested within school districts. To address this assumption violation a Hierarchical Linear Model (HLM) approach was used to examine variable predictability.\textsuperscript{17} In addition, HLM allowed the researcher to examine the relationship of the variables between districts and within districts. This flexibility of observation gave the researcher an opportunity to examine the composition and cohesion of the school districts throughout Florida within and between.

MAO

\begin{equation}
\text{Level 1} \quad \log\left[\frac{p}{1-p}\right] = \beta_{0j}
\end{equation}

\begin{equation}
\text{Level 2} \quad \beta_{0j} = \gamma_{00} + \gamma_{01} (\text{Dist. Ab21}) + \gamma_{02} (\text{Dist. RegEx}) + \gamma_{03} (\text{Dist. FRL}) + \gamma_{04} (\text{Dist. OFTD}) + \gamma_{05} (\text{SAIPE}) + u_{0j}
\end{equation}

\textsuperscript{16}One district had all level-1 values with zero for FCAT scores so the district was removed from the level-2 data. This situation would need to be examined more in the future. In addition, alternative schools were removed from the level-1 data because FCAT performance and all other variables were misleading. Many students at alternative schools are only attending the school for a short period of time and the FCAT performance is tracked at the school the student is truly enrolled in (i.e. the zoned school).

\textsuperscript{17}Raudenbush, Stephen W. and Anthony S. Bryk. 2002. \textit{Hierarchical Linear Models: Applications and Data Analysis Methods}. Thousand Oaks: Sage Publications at 5, "Despite the prevalence of hierarchical structures in behavioral and social research, past studies have often failed to address them adequately in the data analysis. In large part, this neglect has reflected limitations in conventional statistical techniques for the estimation of linear models with nested structures. In social research, these limitations have generated concerns about aggregation bias, misestimated precision, and the 'unit of analysis' problem"; at 99, "Among the most commonly encountered difficulties have been aggregation bias, misestimated standard errors, and heterogeneity of regression. In brief, aggregation bias can occur when a variable takes on different meanings and therefore may have different effects at different organizational levels. In educational research, for example, the average social class of a school may have an effect on student achievement above and beyond the effect of the individual child’s social class. At the student level, social class provides a measure of the intellectual and tangible resources in a child’s home environment. At the school level, it is a proxy measure of a school’s resources and normative environment. Hierarchical linear models help resolve this confounding by facilitating a decomposition of any observed relationship between variables, such as achievement and social class, into separate level-1 and level-2 components."
Level 1

\[ \log \frac{p}{1-p} = \beta_{0j} + \beta_{1j}(schoolAb21) + \beta_{2j}(schoolRegEx) + \beta_{3j}(schoolFRL) + \beta_{4j}(schoolOFT) \]

Level 2

\[ \beta_{0j} = \gamma_{00} + \gamma_{01}(Dist.Ab21) + \gamma_{02}(Dist.RegEx) + \gamma_{03}(Dist.FRL) + \gamma_{04}(Dist.OFT) + \gamma_{05}(SAIPE) + u_{0j} \]
\[ \beta_{1j} = \gamma_{10} \]
\[ \beta_{2j} = \gamma_{20} \]
\[ \beta_{3j} = \gamma_{30} \]
\[ \beta_{4j} = \gamma_{40} \]

**Fixed effects are all γs**

The first of two HLM models used to analyze the predictability of AYP and SAIPE data was a Means As Outcomes (MAO) model. This model was used to determine if level -2 variables had significant predictability for “High Standards Reading” at the school level. The second model used was Intercepts As Outcomes (IAO) model which was used to test predictability when adding additional variables from level-1.

**Results**

**Descriptive Statistics Level-1**

By solely using descriptive data it was apparent that equity does not appear to exist between schools (Table 3-1). The mean percentage of students absent twenty-one days or more is 7.06 percent, however the maximum percentage is 41 percent. The discrepancy between the mean percentage of students on Free and Reduced Lunch (54.73 percent) and the maximum (100 percent) was large. This also can be said for classes taught by Out-of-Field teachers with a mean of 7.19 percent and maximum of
99 percent. The disparity between schools is vast. The descriptive data alone supports the researcher’s intention to examine equity with school data rather than district data.

**Level-2**

Because of the equity in the funding distribution and the range of the school districts’ minimum and maximum values for all variables, variable values were considerably closer together in comparison to those of the level-1 variables (See Table 3-2). When comparing school means to school district means the numbers were very similar. However, when using the maximum and minimum data there were schools that were considerably different from other schools within the district and across districts throughout the state of Florida.

**Means As Outcomes**

The MAO model was used to determine the predictability of district variables on “High Standards Reading.” In order to examine these data, a population-average model was used instead of unit specific because the researcher was interested in the population of Florida not the figurative district with zero random effect. Regular expenditures were insignificant and have a coefficient of zero. This would indicate that regular expenditures do not predict performance on FCAT at the school level for reading. This conclusion is expected and would have been concerning if it were predictive. Percentage of students absent 21+ days of school is also insignificant, as well as the SAIPE District Poverty Data.

According to Raudenbush and Bryk “[F]inding important differences in model-based and robust standard errors gives evidence of a misspecification of the distribution of random effects, a misspecification that does make a difference for inferences about
the regression coefficients.”\textsuperscript{18} The MAO population-average with and without robust effects were similar calculations. Based on this, the researcher considered the predictability of Out-of-Field teachers as significant. Without robust standard errors Out-of-Field teachers were slightly insignificant (p-value .062); with robust standard errors the significance is .016. Because of the nature of the research, the researcher decided to accept the robust standard error estimate of the regression coefficient based on the benefit-to-student possible outcomes. This indicated that that odds for “High Standards in Reading” were reduced by .9924 times when classes taught by Out-of-Field teachers percentage changes by one point.

In addition to Out-of-Field teachers’ significance, percentage of students in the Free and Reduced Lunch programs were significant with a p-value of 0.000. This would indicate that the odds for “High Standards in Reading” were reduced by .9754 times when the Free and Reduce Lunch percentage changes by one point (see Table 3-3). For school districts at the maximum percentage of 80 percent Free and Reduced Lunch, odds for “High Standards in Reading” were reduced by fourteen times when compared to the mean school districts with 61 percent Free and Reduced Lunch.

**Intercepts As Outcomes**

The Reliability estimate for the MAO model of the level-1 coefficient was .919. This indicates a need to add level-1 variables which leads to the use of the IAO model. All the level-1 predictors added to the model had significant predictability (see table 3-4). At the school level percentage of students absent 21+ days had a negative effect.

In addition school percentage of students on Free and Reduced Lunch and classes

\textsuperscript{18} Raudenbush and Bryk, *Hierarchical Linear Models: Applications and Data Analysis Methods.*
taught by Out-of-Field teachers also had significant negative relationships with the logit for High Reading Performance.

**Discussion**

Based on the analysis of the two models, this researcher concluded that use of school level data increases the predictability of student performance. All school level variables were significant in predicting student performance on the "High Standards in Reading" variable. This conclusion lead into the following Path Analysis model study. Because of the wish to incorporate more grade levels into the study the study included an additional school level variable for percentage of students suspended. This inclusion was to examine another layer of student absenteeism at the school level.

Future studies could also include other AYP report indicators such as teacher experience and education, percentage of students with disabilities, and students who do not speak English as a first language. These additional variables may increase predictability of high standards performance on assessments and may also allow future researchers to examine even more complex layers of student and teacher contributions at the school level using state collected data as the data source.
**Table 3-1. Descriptive statistics of level-1 data (school-level)**

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min.</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>School % Ab 21+</td>
<td>1765</td>
<td>7.06</td>
<td>5.10</td>
<td>0</td>
<td>41</td>
</tr>
<tr>
<td>School RegEx</td>
<td>1765</td>
<td>$6645.25</td>
<td>$1526.22</td>
<td>0</td>
<td>$18,290.00*</td>
</tr>
<tr>
<td>School FRL %</td>
<td>1765</td>
<td>54.73</td>
<td>24.83</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>School OFT %</td>
<td>1765</td>
<td>7.19</td>
<td>13.02</td>
<td>0</td>
<td>99</td>
</tr>
</tbody>
</table>

*The author has made preliminary conclusions that the minimum and maximum regular expenditures for some schools are explained because of discrepancy between Regular, Exceptional Student Funds or At Risk Funds and how they are processed at the data entry level.

**Table 3-2. Descriptive statistics of level-2 (district-level)**

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>District % Ab 21+</td>
<td>66</td>
<td>07.97</td>
<td>04.04</td>
<td>0</td>
<td>23.8</td>
</tr>
<tr>
<td>District RegEx</td>
<td>66</td>
<td>$6173.56</td>
<td>$804.96</td>
<td>$4977.00</td>
<td>$9287.00</td>
</tr>
<tr>
<td>District FRL %</td>
<td>66</td>
<td>54.13</td>
<td>12.36</td>
<td>22.2</td>
<td>79.6</td>
</tr>
<tr>
<td>District OFT %</td>
<td>66</td>
<td>09.09</td>
<td>07.52</td>
<td>0.00</td>
<td>27.6</td>
</tr>
<tr>
<td>District Poverty (SAIPE)</td>
<td>66</td>
<td>17.97</td>
<td>05.74</td>
<td>7.54</td>
<td>30.64</td>
</tr>
</tbody>
</table>

**Table 3-3. Population-average model with robust standard errors**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>SE</th>
<th>p-value</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept2</td>
<td>2.0044</td>
<td>.1956</td>
<td>.000</td>
<td>7.4216</td>
</tr>
<tr>
<td>District % Ab 21+</td>
<td>0.0066</td>
<td>.0076</td>
<td>.383</td>
<td>1.0067</td>
</tr>
<tr>
<td>District RegEx</td>
<td>0.0000</td>
<td>.0000</td>
<td>.788</td>
<td>1.0000</td>
</tr>
<tr>
<td>District FRL%</td>
<td>-.0248</td>
<td>.0032</td>
<td>.000</td>
<td>0.9754</td>
</tr>
<tr>
<td>District OFT%</td>
<td>-.0076</td>
<td>.0030</td>
<td>.016</td>
<td>0.9924</td>
</tr>
<tr>
<td>District Poverty (SAIPE)</td>
<td>.0112</td>
<td>.0078</td>
<td>.155</td>
<td>1.0113</td>
</tr>
</tbody>
</table>

**Table 3-4. Population-average model with robust standard errors**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>SE</th>
<th>p-value</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept2</td>
<td>1.851493</td>
<td>.169904</td>
<td>.000</td>
<td>6.369321</td>
</tr>
<tr>
<td>District % Ab 21+</td>
<td>.028755</td>
<td>.009920</td>
<td>.006</td>
<td>1.029172</td>
</tr>
<tr>
<td>District RegEx</td>
<td>.000014</td>
<td>.000028</td>
<td>.601</td>
<td>1.000014</td>
</tr>
<tr>
<td>District FRL%</td>
<td>-.000706</td>
<td>.003446</td>
<td>.839</td>
<td>0.999294</td>
</tr>
<tr>
<td>District OFT%</td>
<td>-.005951</td>
<td>.003661</td>
<td>.109</td>
<td>0.994067</td>
</tr>
<tr>
<td>District Poverty (SAIPE)</td>
<td>.008835</td>
<td>.008228</td>
<td>.288</td>
<td>1.008874</td>
</tr>
<tr>
<td>For % Ab 21+ slope, intercept</td>
<td>-.028245</td>
<td>.005974</td>
<td>.000</td>
<td>0.972150</td>
</tr>
<tr>
<td>For RegEx slope, intercept</td>
<td>.000030</td>
<td>.000111</td>
<td>.009</td>
<td>1.000030</td>
</tr>
<tr>
<td>For FRL slope, intercept</td>
<td>-.023155</td>
<td>.000671</td>
<td>.000</td>
<td>0.977111</td>
</tr>
<tr>
<td>For OFT slope, intercept</td>
<td>-.003594</td>
<td>.001312</td>
<td>.007</td>
<td>0.996412</td>
</tr>
</tbody>
</table>
CHAPTER 4
SIMULTANEOUS EQUATION MODEL

This study examined the path from Free and Reduced Lunch percentages and Out of Field Teachers to “High Reading Standards” and “High Mathematics Standards” on the FCAT.¹ For phase two of the study only elementary and middle schools were used for this study.

The exogenous variables were the school percentage of Free and Reduced Lunch (FRL) and the school percentage of Out-of-Field Teachers (OFT). The endogenous variables are percentage of student suspensions both in-school and out-of-school suspensions (SUS), percentage of students absent 21 days or more (Ab) and percentage of students meeting “High Reading Standards” on the FCAT reading (FCATRE) and “High Mathematics Standards” on FCAT mathematics (FCATMA).

Although the use of elementary and middle school data was determined for this study there were limitations within these data. Similar to the limitations of the HLM study, elementary and middle school students had fewer days absent in comparison to high school students. State certification standards and course offerings at the high school level allow for more prevalence of Out-of-Field Teachers due to the multiple certifications that a teacher may be required to obtain for a typical course load. In addition, data collected for Free and Reduced Lunch were more accurate at the elementary and middle school level.

¹ Fla. Rev. Stat. K-12 Education Code XLVIII § Fla. 1008.22(3)(c)(2009), High Standards is measured by students who earn a 3, 4, or 5 on the FCAT assessment in both subject areas Mathematics and Reading.
**Statistical Procedure**

A structural equation model (Fig. 4-1) was developed to determine paths from Free and Reduced Lunch and Out-of-Field Teachers to FCAT Achievement in reading and mathematics. The paths were outlined in figure 1. Both Free and Reduced Lunch percentages and Out-of-Field teacher percentages were considered the exogenous variables with absenteeism and student suspensions as possible thresholds containing indirect paths toward student achievement on both FCAT Reading and Mathematics. Although absenteeism and suspension percentages were possible indirect paths, there were also direct paths from Free and Reduced Lunch and Out-of-Field percentages to student achievement. In addition, a path was linked from FCAT reading performance to performance on FCAT mathematics. This connection was established because reading ability was necessary for comprehension of the mathematics questions on the FCAT assessment.²

**Results**

Structural Equation Modeling with linear structural relations (LISREL)³ and Muthén & Muthén (MPLUS)⁴ (8.8 and 5.21 respectively) statistical programs were used to assess the fit of the model. The model suggested that the exogenous variables

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³ Linear Structural Relations, a statistical software program, developed in the 1970s LISREL was created by Karl Jöreskog and Dag Sörbom, both professors of Uppsala University, Sweden. Current version, as of 2010, is LISREL 8.8. http://www.ssicentral.com/

⁴ Muthén & Muthén, a statistical software program, MPLUS version 1 was released in November 1998. http://www.statmodel.com/verhistory.shtml
(percentage of students on FRL and percentage of OFT at the school level) predicted performance on FCAT reading and mathematics mediated by percentage of students absent 21+ days and percentage of students suspended from school.

Five types of model evaluation were used to determine whether the model had a good fit: the chi-square statistic, the comparative fit index (CFI), the Tucker-Lewis Index (NNFI), the root mean square error of approximation (RMSEA) and root mean square residual (RMR). The chi-square test is used commonly to assess the model's fit. A high chi-square value with a significant p value suggests a poor fit of the model to the data. A non-significant p value indicates good fit. The comparative fit index (CFI)\(^5\) assesses the amount of improvement in the model, relative to the theoretical model in which all variables are uncorrelated. The CFI with values greater than .95 indicating good fit. Tucker-Lewis Index (NNFI) is similar to that of CFI, a value greater than .95 indicates good fit. The root mean square error of approximation (RMSEA) is a measure of fit that takes into deliberation the complexity of the model. A 0.05 or less indicates a reasonable model fit.\(^6\) The root mean square residual (RMR) is the difference between the observed covariance and predicted covariance. A value less than .08 is considered a good fit. The results suggest that the proposed model had a relatively good fit; \(\chi^2(1, N = 2551) = .40, p = .53, \text{CFI} = 1.00, \text{NNFI} = 1.00, \text{RMSEA} = .00 \text{ and RMR} = .00083.\)

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Effects of Exogenous Variables: Free and/or Reduced Lunch

The percentage of students receiving free and/or reduced lunch had significant total effects on absenteeism, suspensions, FCAT reading and FCAT mathematics scores, with total effect of .30, .18, -.69, and -.66 respectively (Table 4-1). The effect of Free and Reduced Lunch on the endogenous variables was slightly dissimilar between absenteeism (Ab) and suspensions (SUS), however roughly the same for FCAT reading (FCATRE) and FCAT mathematics (FCATMA). All total effects had a significant indirect effect. The .30 effect of Frl on Ab was partially indirect (.06) and mostly direct (.24). This indicates that the path to absenteeism is larger directly than the path through suspension to absenteeism. The -.69 effect of Frl on FCATRE was partially indirect (-.10) and mostly direct (-.59). All of the components for indirect effects were significant for FCATRE they were very small in comparison to the direct effect. FCATMA however had a very large indirect effect with specific size of -.533 from Frl through FCATRE. This indicates that performance of FCATMA was significantly impacted by FCATRE performance and Frl. Although absenteeism and suspension were significant, performance on FCAT reading and free and reduced lunch impact FCAT mathematics more.

Effects of Exogenous Variables: Out-of-Field Teachers

The percentage of Out-of-Field teachers had significant total effects on absenteeism, suspensions, FCAT reading and FCAT mathematics scores, with total effect of .09, .13, -.13, and -.10 respectively (Table 4-1). The effect of Out-of-Field on the endogenous variables was roughly the same between absenteeism and suspensions and roughly the same for FCAT reading and FCAT mathematics. All total effects were due, at least in part, to a significant indirect effect. The .09 effect of OFT
on Ab was partially indirect (.04) and direct (.05). The -13 effect of OFT on FCATRE was partially indirect (-.05) and partially direct (-.08). All of the components of indirect effects were significant for FCATRE. OFT to FCATRE through SUS was the largest with -.041. FCATMA however had all significant indirect effects but the path from OFT through Ab. The largest indirect effect was OFT through FCATRE of -.068.

**Effects on Endogenous Variables (Table 4-2)**

The model specifies that students absent 21+ days or more were directly affected by all exogenous variables and percentage of students’ total suspension. According to the model specification, students’ total suspension had only a direct effect on students absent 21+ days or more (.31). Students’ total suspension was significant and affected by both out-of-field teachers (.13) and free and reduced lunch (.18).

FCAT reading was significantly affected by students absent 21+ days and students in suspension. The total effects were -.15 and -.36 respectively. There was an indirect effect of -.05 from suspension.

FCAT mathematics was significantly affected by students absent 21+ days, students in suspension, and FCAT reading. The total effects were -.16, -.33, and .90 respectively. Once again, the indirect effects were large compared to the direct effects. The indirect effect from percentage of students absent 21+ days was -.14 with the direct effect of -.02. The indirect effect from students in suspension was -.33 giving no direct effect. There was no direct effect because it was not specified in the model.\(^7\) Additionally, FCAT reading had a direct effect of .90 indicating the strongest and most significant effect on FCAT mathematics was FCAT reading.

\(^7\) The author used a model with SUS as a direct effect on FCATMA in an initial analysis model which determined the effect as insignificant. The author removed the direct effect for the final model.
Discussion

A major objective of the study was to determine at least in a preliminary way the effects Free and Reduced Lunch and Out-of-Field Teachers have on FCAT achievement to aid in determining a weight for a poverty funding formula. The direct and indirect paths were used as guidance information. The direct and indirect paths were not used in any way to describe the sole absolute paths from Free and Reduced Lunch and Out-of-Field Teachers to FCAT achievement. These data were merely another compass arrow pointing in a direction that may possibly be a location closer to the illusive phenomena entitled impoverished student.

Free and reduced lunch percentages have the strongest effect on FCAT reading which then effects FCAT mathematics. This was not necessarily a new discovery. It is common knowledge that free and reduced lunch percentages influence school and student performance negatively.  

What is not necessarily common knowledge, were the indirect paths that free and reduced lunch can affect. Although these paths were small in comparison to the direct effect of free and reduced lunch on FCAT reading they were significant and should be addressed when configuring a public education finance distribution formula. This same argument would include the effect of Out-of-Field teachers. Although the effect was small compared to free and reduced lunch, the effects were still significant and worthy of consideration.

With the limitations in secondary free and reduced lunch percentages analyzing the other variables as poverty indicators could improve the ability of state policy makers to identify schools with poverty levels higher than the state average. In addition, although these variables were most likely not the only poverty indicators they were indicators that were provided from a yearly collected and rigorously calculated data source that the state of Florida could use with very little additional funding for data collection. The state of Florida could add to the vertical elements of the FEFP funding mechanism that addresses equity within our public education system.9

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Figure 4-1. Structural Process Model (N = 2551): NNFI =1.00; CFI =1.00; RMSEA =.00; RMR =.00083; $\chi^2 = .40, df = 1, p = .53$

Table 4-1. Total and indirect exogenous variables on endogenous variables

| Endogenous Variables | Exogenous Variables  
|---------------------|----------------------
| Absent 21+          | Free and Reduced Lunch | Out-Of-Field |
| Absent 21+          | .30*                 | .09*          |
| Absent 21+          | .06*                 | .04*          |
| Suspensions         | .18*                 | .13*          |
| Suspensions         | --                   | --            |
| FCAT Reading        | -.69*                | -.13*         |
| FCAT Math           | -.66*                | -.10*         |
| FCAT Math           | -.63*                | -.12*         |

Note. Total effects in bold, indirect effects in italics. The symbol – means the effect is not in the model; *p<.05

Table 4-2. Total and indirect endogenous variables on endogenous variables

<table>
<thead>
<tr>
<th>Absent 21+</th>
<th>Absenteeism</th>
<th>Suspensions</th>
<th>FCAT Reading</th>
<th>FCAT Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>--</td>
<td>-.15*</td>
<td>-.36*</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>FCAT Reading</td>
<td>-.36*</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>--</td>
<td>--</td>
<td>-.05*</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>FCAT Math</td>
<td>-.16*</td>
<td>-.33*</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>--</td>
<td>-.14*</td>
<td>-.33*</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

Note. Total effects in bold, indirect effects in italics. The symbol – means the effect is not in the model; *p<.05
Initially the Poverty Weight Model was conceptually presented to the National Center for Educational Statistics (NCES).1 This initial development was an exploratory examination of state approaches to supplemental funding for impoverished students followed by an attempt to create a preliminary poverty weight model that would incorporate the use of Free and Reduced Lunch percentages as well as supplement with additional indicators of poverty that were determined based on the literature and the accessibility of the Adequate Yearly Progress (AYP) reports.2

By using the results from the Hierarchal Linear Model (HLM) study a generic formula was devised. Figure 5-1 outlines the criteria for schools to be allowed supplemental allocations. The supplemental weights were designed to possibly be included in the preliminary Poverty Weight Model based on the comparison between the school level averages to the state average. If the supplemental weight at the school level were more severe than the state average that specific supplemental weight would be included in the formula. If the supplemental weight were not worse than the state average then it was not included in the formula. There were three supplemental weights for the preliminary poverty weight model. A school would have the possibility of


2 See Fla. Rev. Stat. K-12 Education Code XLVIII § Fla. 1008.22(3)(c)(10)(2009) for the reliance of FCAT on the Sunshine State Standards. Sunshine State Standards are in compliance with NCLB requirements via http://www.fldoe.org/NCLB/adequate_yearly_progress.asp “The Federal No Child Left Behind Act of 2001 requires states to evaluate the performance of all students in all public schools in order to determine whether schools, school districts, and the state have made adequate yearly progress (AYP). Florida’s approved accountability plan uses the same FCAT test and definitions of ‘grade level’ as does the A+ Plan and includes specific criteria for determining and reporting AYP for all schools”
collecting additional funding for all three, two, one or none of the supplemental weights. All schools would collect some funding based on the percentage of students receiving Free and Reduced Lunch benefits.

This formula was a preliminary examination of the indicators provided by the AYP reports. Graduation rates for high school students were considered a possible poverty indicator.\(^3\) Graduation rates were chosen initially because absenteeism is more difficult to track at the high school level. It was decided that one minus the high school graduation rate would be a fair estimate of the dropout rate. This calculation was based on the assumption that all students who do not graduate did not finish school with a regular diploma thus the students dropped out of the program. Graduation rates were removed from the final Poverty Index Model because the supplemental weight did not apply as well when calculating schools with mixed grade levels like K-8 or K-12.

The remaining supplemental weights were Out-of-Field Teachers and Absenteeism, at the school level. Similar to the comparison of the graduation rates, the additional weights that had a school level percentage above the state average were given additional funds to address school needs.

Also in the preliminary model elementary and middle grades percentage of school absenteeism only applied to elementary and middle schools. This was adapted in the final model to include absenteeism for all grade levels. This again aided in simplifying the calculation process and allowing the formula to be more efficient.

---

\(^3\) Graduation rates were removed from the final poverty formula to allow for more simplistic and efficient calculations. Graduation rates were replaced by suspension rates. This allowed the formula to be used for all grade level schools. This simplification allows the formula to be more versatile with all schools especially schools that have mixed programs like K-8 or K-12.
The preliminary formula included a supplemental weight borrowed from a similar model based out of Oregon\(^4\) addressing the unique needs of children living in Foster Care. The Oregon legislature identifies and funds students who are considered Foster Care and/or Neglected/Delinquent Students. This additional financial recognition was not only attentive to the needs of an atypical student circumstance, but also a reasonably accessible and efficient data source to track. Because of the exceptional experiences and backgrounds of children in the Foster Care or Neglected/Delinquent system the preliminary poverty formula included a supplemental fund to aid schools with these students within the student body.

\[
(5-1) \\
\%
F&RL (School Pop) \left[ .25 + \# QW (0.05) \right] [AvgExp] + (AveExp)(0.25)(\# FCND students)
\]

\%
F&RL = Percentage of students qualifying for F&RL at school level  

School Pop = School Population  

\# QW = Number of Qualifying Supplemental Weights  

AvgExp = Average student expenditure  

\# FCND Students = Number of students within school that are in FCND

The algebraic formula describes the process in which the supplemental aids were collaborated to ultimately fund individual schools with possible poverty indicators considered beyond the state average. Reading the formula from left to right, the

\(^{4}\) Oregon Department of Education, 2009-10 State School Fund Estimates, available at http://www.ode.state.or.us/services/ssf/finance/estwarrants/2009_10-ssf-estimate-as-of-7_10_09-1221hrs-(2.94b)-w_o-sfsf.pdf (last visited April 20, 2010), this link gives the estimates and breakdowns for all funds to all school districts. The weight for FCND students is itemized and demonstrated for each school district. Statute that explain the FCND students is as follows ORS 327.013(7)(a)(E): (ii) The number of children in foster homes in the district as determined by the report of the Department of Human Services to the federal Department of Education, “Annual Statistical Report on Children in Foster Homes and Children in Families Receiving AFDC Payments in Excess of the Poverty Income Level,” or its successor, for October 31 of the year prior to the year of distribution; and (iii) The number of children in the district in state-recognized facilities for neglected and delinquent children, based on information from the Department of Human Services for October 31 of the year prior to the year of distribution.
formula begins with the school level percentage of students receiving Free and/or Reduced Lunch benefits multiplied by the student population of that school. This initial bracket allowed all schools to obtain funding based on the percentage of students receiving Free and/or Reduced Lunch Benefits. This was not a ratio or a comparison, whether a school has 5 percent or 98 percent students receiving Free and Reduced Lunch benefits the school will get additional funding to address needs for that student population.

The following brackets incorporated the initial weight of .25\(^5\) plus .05 for every supplemental indicator that had a ratio between school average and state average above one.\(^6\) The flexibility of the formula allows schools to receive funds based on the unique construct of the individual school. The state average expenditure is multiplied to supply a monetary proportion of the state average spending per child.

The number of FCND students attending the school is multiplied by .25 weight and the average expenditure per child.\(^7\) This calculation was in addition to the supplemental weights. Similar to the Free and Reduced Lunch Benefits weight, the FCND numbers do not compare to a state average. If the school had students in the Foster Care system then the school would receive additional funds for each child.

The calculated dollar amount would be the funding that a school would receive each year to fund the additional resources that a school needs in order to address the

---

\(^5\) This weight is provided for students qualifying for Free and/or Reduced Lunch Benefits and was established as utilized by the Oregon statute ORS 327.013(7)(a)(E)(i).

\(^6\) At the stage of the preliminary Poverty Index Model the weights were generic with little meaning other than Free and/or Reduced Lunch Benefits percentages were valued greater than the additional supplemental indicators.

\(^7\) Weight was modeled entirely based on Oregon’s weight. See Oregon Department of Education, 2009-10 State School Fund Estimates, available at http://www.ode.state.or.us/services/ssf/finance/estwarrants/2009_10-ssf-estimate-as-of-7_10_09-1221hrs-(2.94b)-w_o-sfsf.pdf (last visited April 20, 2010).
social inequities of schools with a disproportionate percentage of impoverished students. Each year the supplemental indicators would be reassessed to determine again if the school were allowed additional funding resources based on comparison to the state average.

For example, Figure 5-2 illustrates the use of the formula for a school in the state of Florida. This school is an elementary school with a population of 1,000 students with 80 percent of the student population receiving benefits for FRL program. This school also had 15 students in the Foster Care system. The state average student expenditure was $7,500. The percentage of students absent 21+ days or more at the school was 15 percent and the state average is 9.6 percent. The ratio of school to state is 1.56 allowing the ratio to be above 1.0 giving the school the ability to receive additional funds because the school exhibits need above the average for the state. Out-of-Field teacher percentages at the school are 1.2 percent while the state average is 8.8 the ratio is below 1 at .14. The ratio between state OFT and school OFT is below 1 the school will not receive additional funds for OFT.

Finally, the corresponding variables were replaced by the numerical values within the formula accounting for the qualifying supplemental indicator for percentage of students absent 21+ days. This elementary school would receive an additional $1,828,125 this academic year for impoverished student interventions and resources.

It is important to note that this formula was an initial model. The weights were not exact and would be adjusted based on the actual funds allowable for distribution to the

---

8 The population of 1000 and the 15 FCND students were modified for illustrative purposes, the percentages of FRL, OFT, state average student expenditure, and Ab 21+ days were true data collected from the Florida AYP reports.
schools. It is also predicted that these weights would need to flex every year based on the funding. A concluding formula was designed to incorporate all of the encompassing factors into a possible real-world application of a Poverty Model Index for the state of Florida.

**Poverty Index Model**

Based on the results of the HLM and SEM study some modifications to the formula were made. The formula was streamlined to measure elementary, middle, and high schools all together without modifying indicators based on the grade levels the school instructs. One major reason this was decided was because of the atypical schools in the state. There were schools within districts that are K-12, 6-12, and many other variations of blending grade levels. In order to make this formula as efficient and practical as possible the indicators were adjusted to address the discrepancies among schools. Because of this reason, graduation rate was removed from the formula and replaced with percentage of students suspended from school. These data span all grades and provide a powerful argument for schools in need.

\[
[\%F&RL(School\ Pop)][(\ 0.25 + 0.08SUSQW + 0.05OFTQW + 0.12ABQW)(BSA)]
\]

\[+(BSA)(0.25)(#FCND\ students)\]

Average expenditure was replaced with base student allocation. This decision was made to customize the formula specific to Florida’s FEFP. Base student allocation is the initial dollar amount that all Florida students begin with prior to allocations provided within the FEFP formula.\(^9\) This is the equitable funding amount provided by

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FEFP. The Final Poverty Index Model incorporates vertical equity when factoring in suspension, absenteeism, Out-of-Field Teachers, and FRL data.

The example, provided in Figure 5-3 illustrates the updated Poverty Index Model using the exact same data provided for Figure 5-2. Each of the three supplemental indicators were provided with an individual weight. These weights were determined using information provided from the SEM study in Chapter 4. As mentioned in Chapter 4 the direct and indirect paths were used to determine strengths of weights. The paths are used as guidance and are not a specific value to be incorporated in these data. Absenteeism was given a weight of .12, suspension received a .08 weight and Out-of-Field teachers had a .05 weight. The .25 weight remained for students receiving Free and Reduced Lunch benefits. When a school qualifies for all supplemental weights the school would receive 50 percent of the base student allocation for each student qualifying for Free and Reduced Lunch benefits without including the additional funding for student in FCND.

If a supplemental weight ratio of school to state were greater than one then the weight was multiplied by 1. If in fact the ratio of school to state were less than 1.0 then the weight is multiplied by 0. This allowed the formula to include the additional weights if they were deemed necessary and exclude the weight if the school is performing better than the state average.

**Adjusting the Poverty Index Model to Florida’s 2009-2010 Budget**

The Poverty Index Model was adjusted to the Florida 2009-2010 FEFP budget to provide an example on the state funding scale. All school data used were from the
2007-2008 school year.\textsuperscript{10} The example would be similar to actual application of the Poverty Index Model because the budget reports and the Indicator reports are on different timetables.\textsuperscript{11} The Poverty Index Model weights were adjusted to allow the total funding for the Poverty Index Model to remain below 10 percent\textsuperscript{12} of the total FEFP funding.\textsuperscript{13}

In order to maintain funding below 10 percent total funds for FEFP the Poverty Index Model weights were modified. Figure 5-4 illustrates the changes to the Poverty Index Model. The weight for Free and Reduced Lunch percentages was reduced to .20, absenteeism was reduced to .06, suspension was reduced to .04 and OFT was reduced to .025. If a school were to qualify for all supplements the school would receive 32.5 percent the Base Student Allocation for each student that qualifies for Free and Reduced Lunch benefits.\textsuperscript{14}

\[
\text{\%F\&RL(School Pop)}[(.20 + .04SUSQW + .025OFTQW + .06ABQW)(BSA)]
\]
\[+(BSA)(.25)(#FCND students)\] (5-3)

When incorporating the Poverty Index Model into the State of Florida’s 4,062 schools the total funding needed would be $1,197,791,262.\textsuperscript{15} The necessary funding is

\textsuperscript{10}A spreadsheet incorporating all supplemental indicators was developed using the spreadsheets provided by Florida Department of Education, Florida School Indicator Reports, available at http://www.fldoe.org/eias/eiaspubs/fsir.asp (last visited April 20, 2010).

\textsuperscript{11}FEFP budgets and reports are a priori. The Florida School Indicator Reports are a posteriori.

\textsuperscript{12}10 percent was arbitrarily chosen to provide an exploratory guideline to examine funding needs and realities. Future research would be to examine alternative funding sources for the Poverty Index Model that do not correspond or deplete the existing education funds.

\textsuperscript{13}Third calculation FEFP, http://www.fldoe.org/fefp/pdf/09-10-3rd.pdf, Total FEFP $13,826,712,024

\textsuperscript{14}Ibid. Base Student Allocation for the 2009-2010 school year was $3,630.62.

\textsuperscript{15}The 4062 schools were provided by the spreadsheets provided by the Florida School Indicator Reports http://www.fldoe.org/eias/eiaspubs/fsir.asp.
8.7 percent the total FEFP funding of $13,826,712,024 without incorporating the funding for students that are in the FCND program.

According to The National Evaluation and Technical Assistance Center for the Education of Children and Youth Who are Neglected, Delinquent, or At-Risk’s (NDTAC) 2006 data, Florida had 7,302 juveniles in residential placement. These data included children who are not of school age. However, using these data as an estimate for funding purposes, the Poverty Index Model would need an additional $6,627,697 for all students in the FCND system. Combining the $1,197,791,262 and the FCND funds would be $1,204,418,959 which is still below 10 percent the total FEFP funding for the 2009-2010 school year.

---

Figure 5. Qualifying supplemental weights

Student Population = 1000 Students
% FRL=80%
FCND Students = 15
Average Student Expenditure = $7500

<table>
<thead>
<tr>
<th>Variables</th>
<th>School Data</th>
<th>State Data</th>
<th>Ratio</th>
<th>Qualify?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ab 21+</td>
<td>15</td>
<td>9.6</td>
<td>15/9.6 = 1.56</td>
<td>Yes</td>
</tr>
<tr>
<td>OFT</td>
<td>1.2</td>
<td>8.8</td>
<td>1.2/8.8 = .14</td>
<td>No</td>
</tr>
<tr>
<td>SUS</td>
<td>.7</td>
<td>1.8</td>
<td>0.7/1.8 = .38</td>
<td>No</td>
</tr>
</tbody>
</table>

\[
\text{[\%F&RL(School Pop)]} \times [0.25 + \# QW(0.05)] \times \text{AvgExp} + (\text{AvgExp})(0.25)(\#FCND \text{ students})
\]

<table>
<thead>
<tr>
<th>%FRL</th>
<th>Percentage of students qualifying for FRL at school level</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Pop</td>
<td>School Population</td>
</tr>
<tr>
<td>#QW</td>
<td>Number of Qualifying Supplemental Weights</td>
</tr>
<tr>
<td>AvgExp</td>
<td>Average Student Expenditure</td>
</tr>
<tr>
<td>#FCND</td>
<td>Number of Students within school that are in FCND</td>
</tr>
</tbody>
</table>

\[
0.80(1000)(0.25 + 1(0.05))(7500) + (7500)(0.25)(15)
\]

\$1,828,125

Figure 5-2. Example elementary school
Student Population = 1000 Students
% FRL=80%
FCND Students = 15
Base Student Allocation = $3,630.62

<table>
<thead>
<tr>
<th>Variables</th>
<th>School Data</th>
<th>State Data</th>
<th>Ratio</th>
<th>Qualify?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ab 21 +</td>
<td>15</td>
<td>9.6</td>
<td>15/9.6 = 1.56</td>
<td>Yes</td>
</tr>
<tr>
<td>OFT</td>
<td>1.2</td>
<td>8.8</td>
<td>1.2/8.8 = .14</td>
<td>No</td>
</tr>
<tr>
<td>SUS</td>
<td>.7</td>
<td>1.8</td>
<td>0.7/1.8 = .38</td>
<td>No</td>
</tr>
</tbody>
</table>

\[
\% \text{F&RL(School Pop)}[.25 + .08\text{SUSQW} + .05\text{OFTQW} + .12\text{ABQW}(\text{BSA})] + (\text{BSA})(.25)(\#\text{FCND students})
\]

\[
[.80(1000)][(1.25 + .08)0 + (.05)0 + (.12)1](3,630.62)] + (3,630.62)(.25)(15)\\
[.80(1000)][(.25 + .12)(3,630.62)] + (3,630.62)(.25)(15)
\]

$1,088,278.35

Figure 5-3. Poverty index model example

\[
[\%\text{F&RL(School Pop)}][(.20 + .04\text{SUSQW} + .025\text{OFTQW} + .06\text{ABQW})(\text{BSA})]\\
+(\text{BSA})(.25)(\#\text{FCND students})
\]

Total Poverty Index Model Funding for the 2009-2010 School Year
$1,197,791,262
8.7% of Total FEFP Funds

Figure 5-4. 2009-2010 Modified Poverty Index Model
CHAPTER 6
SUMMARY AND CONCLUSIONS

This study addressed the status quo of child poverty identification in public school systems throughout the nation. Both states and the federal government have depended on the reliability and validity of Free and Reduced Lunch percentages to detail the specifics of child poverty within the nation, states, and schools. This study was in support of using additional indicators provided by the Adequate Yearly Progress (AYP)\(^1\) reports to provide supplemental feedback regarding poverty of children educated in the public school systems.

In answering the research question, a study was designed to determine if the addition of a poverty index model would increase the equity and adequacy of Florida Education Finance Program (FEFP).\(^2\) The study was additionally designed to use AYP reports to efficiently identify schools with disparate needs related to an impoverished lifestyle. Both agendas for the research study were focused on increasing opportunities for students while being fiscally sound and reflective of a level of efficiency thereby protecting the public investment.

This study was focused on Florida’s FEFP although the foundations of the study were applicable to all states and could be manipulated and incorporated into any state funding formula by using the AYP reports of each given state. Notwithstanding any differences in funding formula construction throughout the Nation’s many state formulas this inclusion of additional indicators allows state legislatures to have a more thorough perspective regarding children in poverty and the schools which house them.

\(^{1}\) 20 U.S.C. § 6301 Sec. 1111 (b) (2) (B).

Dilemma of Poverty

Since the days of Roosevelt’s “New Deal” and Lyndon Johnson’s “War on Poverty,” the insurmountable obstacle of Americans living in poverty has confounded public policymakers. Education specifically has been delivered an enormous task of educating children of poverty. The task for educators and education stakeholders can be described as identifying children in poverty, mediating, and provide an adequate education that is similar to their non-impoverished peers.

Children of poverty come to school with many impoverished trademarks such as food insecurity, lack of housing, poor healthcare, and insufficient or nonexistent early childhood education. This nation has put an enormous amount of responsibility and accountability on the education system to educate impoverished children despite the inequities that exist before the child has set foot onto a school campus. Schools are in need of additional resources to battle these inequities.

Although child poverty has similar hallmarks, poverty is also based on the environmental and social characteristics of the community, school, culture, and local economy. This study allowed school stakeholders to determine the specific needs and values of the school. This approach recognized that there is not a “magic pill” or blanket plan to address poverty and the educational needs of children living in poverty.

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3 These impoverished trademark characteristics are outlined in Wight, Vanessa R., Michelle Chau and Yumiko Aratani. 2010. “Who Are America’s Poor Children? The Official Story.” National Center for Children in Poverty, Mailman School of Public Health, Columbia University.
Changing Poverty Thresholds

The measure for poverty has been under criticism for many years and is at present being offered alternative approaches.\textsuperscript{4} The formula is considered to be archaic and simplistic when considering needs of the Twenty-First century to those of the 1960s when the formula was developed.\textsuperscript{5} In March of 2010, the Obama administration introduced a new formula to measure poor Americans.\textsuperscript{6} At this point the new measuring device focuses on counting modern expenses yet the measure does not go as far as modifying the qualifications for government aid.\textsuperscript{7} Although there appears to be recognition among the policymakers that the poverty measurement lacks reliability and validity; implementing a revision of the poverty measurement and policy supporting the revision could be slow.

Possibilities of Poverty Index Model

The poverty index model allows an alternative examination of poverty without waiting on the evolution of the National poverty measurement and qualification guidelines. The concept of the model incorporates alternative variables that are accessible to all states, school districts, and the state legislature. The transparency and


\textsuperscript{5} Trumbull, Mark. 2009. "Poverty is up, but how much? Census tells two stories." The Christian Science Monitor, October 20, Money section.


\textsuperscript{7} Ibid.
cost effectiveness of these data is a positive incentive for both education policy experts and education decision makers.

In addition to the alternative use of the AYP data the Poverty Index Model is also transferable among states. State legislatures outside of Florida can evaluate their state education funding formula and custom fit other AYP variables depending on the state need. For example, if a state policy maker were to feel that the education funding formula does not fund English Language Learners (ELL) adequately enough then the formula could include an ELL variable as well as have the path analysis determine the strength of the weight in comparison to the other contributing variables.

One of the benefits of the Poverty Index Model is the versatility of the model. The Poverty Index Model can adapt to the yearly variability of student performance and demographics as well as variability among funding formulas. In addition, the general concept of using more variables to predict student poverty beyond Free and Reduced Lunch percentages is an option that state legislatures could employ without integrating the Poverty Index Model.

Due to the economic hardships of recent years many state legislatures may find incorporating the Poverty Index Model as an addition to the funding formula financially impractical or impossible. Even if this were the case, state legislatures could use the multiple variable concept within their funding formula to interpret students who may live in poverty within the public school system.

**Limitations**

One possible limitation of the proposed Poverty Index Model is fraudulent activity. When money is involved there is always the possibility that individuals will behave in a manner that is counterproductive or even perhaps illegal in order to acquire more
funding. There are two responses to this dilemma. First, in the state of Florida schools receive additional funds for performance. This is separate from the funding that is associated with federal funding connected to Adequate Yearly Progress. If a school performs well and were graded well then the school will receive additional funding.\(^8\) In that same regard if a school performs poorly then the school would be penalized. The incentive to conduct illegal or unethical activities is deterred due to the funding possibilities associated with the state school grading system. Additionally, specific mandated auditing standards would address these concerns. Secondly, this is a policy and legal dilemma that all states, school districts, and school level decision makers must work through on a daily basis. Fraud does exist and measures to eliminate fraud must be taken. The Poverty Index Model and the use of AYP data as well as audit standards outweigh the possible negatives of fraudulent activity.

**Conclusions, Implications and Future Research**

The Poverty Index Model would assess each school within Florida and allocate funds to address poverty needs within each school within the state. Future research will explore possible uses, beliefs, regulations, and limitations associated with funding schools at the school level. One of the major assumptions of the allocation of funds provided by the Poverty Index Model is that decisions regarding funding usage and resource determination are most valuable at the school level. Future research will explore that assumption and the implications that may arise.

Additional future research will explore possible untapped funding sources. With the economic constraints of recent years alternative sources of funding possibilities

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\(^8\) Schools that maintain an A or earn an A receive $75 per child of additional funding. Florida Department of Education. School Grades Fact Sheet, available at http://schoolgrades.fldoe.org/pdf/0809/SchoolGradesFactSheet.pdf (last visited April 1, 2010).
must be explored. More specifically in Florida with recent declines in the housing market reliance on property taxes for funding education will be crippled if not stifled. It is imperative to examine other possible funding sources to maintain and improve Florida Education.
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22 Pa. Code § 44.4 Eligible Students (2009)

33 Oh. Code § 3306.06 (2009) Additional Services Support Component

33 Oh. Code § 3306.51 (2009) Ohio educational challenge factor


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*Coalition for Adequacy & Fairness in Sch. Fund., Inc. v. Chiles, 680 So. 2d 400 (Fla. 1996).*

*Connecticut Coalition for Justice in Education Funding (CCJEF) v. Rell, SC 18032*


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BIOGRAPHICAL SKETCH

Carlee Poston Escue has a Bachelor of Design degree in May 2000 from the University of Florida’s College of Architecture and a Master of Education degree in August 2007 from the Department of Educational Administration and Policy from the University of Florida’s College of Education. Between the earning of her two degrees, Mrs. Escue taught high school mathematics for six years in the state of Florida. Mrs. Escue has teaching certification in 6-12 mathematics, industrial arts and administration. Mrs. Escue is married to a public educator and has three young boys.