Middle Grades Student Achievement and Poverty Levels: Implications for Teacher Preparation

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ABSTRACT

This paper provides a history of the standardized testing and accountability movement, the curriculum standards attached to the accountability movement, and the attempted shift to common core. Student poverty and its impact on student achievement the focus of this paper. Recognizing the impact of poverty on student achievement as measured by standardized tests the authors question the explicit practices of teacher preparation programs in preparing teacher candidates to work with students of poverty.

INTRODUCTION

In a time of increased accountability measures and volatility of educational policy, public and legislative bodies have become increasingly focused on student achievement as reported in statewide standardized test scores. Having all students take the same standardized test is like saying that we have "standardized" children and that we all expect them to learn in the same ways and exhibit this learning in the same way--through these standardized assessments. What these "one-size-fits-all" assessments fail to take into consideration, however, are the varied backgrounds of our students. Many factors play an important part in a student's academic success, like special needs or environmental factors; this study focused on students' socioeconomic status and how this affects student achievement. This paper discusses the implications of this research on current and future teacher preparation programs in higher education at the undergraduate level.

STANDARDIZED TESTING

Popularity in standardized testing has risen dramatically after the publication of *A Nation at Risk: The Imperative for Educational Reform* by the Reagan administration in 1983; this report portrayed the American educational system as a failing entity and proposed that its only way to redemption was through stricter accountability measures (i.e., increased standardized testing) ("Is the Use of Standardized Tests Improving Education in America?," n.d.). The use of standardized testing has become controversial as these tests have become "high-stakes" for students and school faculty and administrators. Why do legislators and the general public care about standardized test scores? Numbers are the easiest data to analyze, and "educational attainment is well recognized as a powerful predictor of experiences in later life," policymakers and the public assume that standardized testing data provide accurate reflections of student achievement (Brooks-Gunn & Duncan, 1997, p. 61). However, as the push for increased accountability through standardized assessment gained momentum it left many students falling through the cracks; standardized tests do not take the varying experiences of our students into consideration when it comes to test results, and as a result, achievement gaps became the norm for many subgroups but most noticeably for our economically disadvantaged children. Additionally, the recent downturn in our nation's economy has resulted in a greater income gap between our schools' wealthy and disadvantaged children: "...the Great Recession wreaked havoc among working-class families' employment. This has led to greater residential segregation and homogenously poor neighborhoods, leading to a higher concentration of poor students in certain schools" (Neuman, 2013, p. 18). The time frame that our nation experienced the Great Recession coincided with No Child Left Behind's deadline of having all children test as proficient in math and reading (according to standardized tests) by 2014; our nation did not meet this benchmark.

There are perspectives in favor of standardized assessments, in general, standardized tests are inclusive and non-discriminatory because everyone has to take them, regardless of race, gender, or ability. These tests can provide an indication of students' ability on a variety of topics while identifying areas of strengths and weaknesses, and they can also be a useful tool for assessing the schools themselves (Brown & Hattie, 2012, p. 290). Moreover, advocates of standardized assessments argue that these tests make certain that schools and faculty members are held accountable to taxpayers for their instruction and that many parents and teachers approve of these tests (Is the Use of Standardized Tests Improving Education in America?, n.d.)

Concerns regarding standardized testing include placing too much emphasis upon scores, student testing anxiety, "teaching to the test," skewed test results, cheating concerns, and socioeconomic and cultural bias (Brown & Hattie, 2012; Olson, 1999). Part of the concern regarding standardized testing comes from concern that there is too much emphasis placed upon them, leading to concerns about student testing anxiety, "teaching to the test," skewed test results, and possible cheating concerns (Olson, 1999; Brown & Hattie, 2012, p. 289). Because these tests are considered "high-stakes," poor student performance can lead to negative consequences for students and teachers alike; to protect both the test-takers and test administrators, "…just as students need an environment of psychological safety to make effective use of assessment, so too do teachers and school leaders need protection from negative consequences" (Brown & Hattie, 2012, p. 289). Some argue that the more important these tests become "in terms of being the basis for promoting or retaining students, for funding or closing down schools--the more that anxiety is likely to rise and *the less valid the scores become*" and that it ultimately "drives good teachers and principals out of the profession" (Kohn, 2000, p. 3; Renzulli, 2013, p. 1). Because the stakes of these tests are so high, test anxiety is now a common ailment amongst students across the nation; the Stanford-9 standardized exam, for example, even comes with instructions as to what actions the test administrator must to take if a student vomits on a test booklet (Ohanian, 2002). Stories like this add to the public sentiment that these tests are inflicting serious harm to children, both academically and emotionally, and these assessments do not result in improved cognition (Horn, 2003; Popham, 2001). Furthermore, despite the avalanche of funds allotted to standardized testing, there exists a great deal of evidence that standardized tests do not improve student learning or achievement; in fact, according to NAEP (the National Assessment of Educational Progress), American children are actually performing worse *after* the implementation of No Child Left Behind accountability measures ("Is the Use of Standardized Tests Improving Education in America?," n.d.).

Perhaps most important is not what is being assessed but rather what is *not* being assessed, as what we measure is both invalid and misleading because student achievement depends on multiple factors that cannot be readily assessed, like ability, behavior, and socioeconomic status (Brooks-Gunn & Duncan, 1997; Wiggins, 2012). Because these examinations are designed to assess what is easily measured, they are inherently incapable of assessing what cannot be measured. These tests cannot ascertain "initiative, creativity, imagination, conceptual thinking, curiosity, effort, irony, judgment, commitment, nuance, good will, ethical reflection, or a host of other valuable dispositions and attributes" (Kohn, 2000, para. 45). This supports one of Albert Einstein's most famous assertions: "Not everything that counts can be counted, and not everything that can be counted counts."

SOCIOECONOMIC STATUS AND STUDENT ACHIEVEMENT

With regards to this study, socioeconomic status is viewed as a lens through which one measures student achievement. Correlational studies show a strong relationship between high poverty and poor academic performance (Sirin, 2005; White, 1982; White et al., 1993). This correlation begins at the beginning of a child's academic career, and even before, in some cases. Pawloski stated that poverty is more influential to academic performance than even gestational exposure to cocaine (2014). In every state in the nation the economically disadvantaged subgroup never outperforms other nonlabeled students regardless of the grade level or subject area, supporting that the variable with the strongest correlation to academic achievement is socioeconomic status; correlations between SES and student achievement frequently range from .100 to .800 (Tienken, 2010; White, 1982). In a meta-analysis of research regarding economic status and achievement, Sirin found that the correlation between these two variables increased throughout the levels of schooling, climaxing in the middle school, and plateauing at the high school level (2005). This is also an important factor for why additional study on student achievement and SES at the middle level is crucial as "the [cognitive] effects of wealth [are] indirect and must accrue over time" (Willingham, 2012, p. 34).

Accountability measures were put into place to ensure a decline in achievement gaps between low income and higher income students; No Child Left Behind legislated a goal of 100 percent of students, regardless of identifying labels, test at proficient levels by 2014. However, a 2008 study forecast "nearly 100% failure" of California schools to meet these accountability measures; the study

cited that the reason for this projected failure would be due to the poor results from limited English proficiency students and high poverty students "(Is the Use of Standardized Tests Improving Education in America?," n.d.). Unfortunately, NAEP data also supports this prediction; the National Association for Educational Progress reported in 2005 that nearly 50% of all immigrant, minority, and high poverty children would not graduate from high school and that in the nation's largest cities, more than 30% of the lowest-income students land in the lowest percentile rankings on standardized assessments in reading and mathematics (Renzulli, 2013). Even the founder of the Educational Testing Service, Henry Chauncey, has been quoted as saying "if there is anything in heredity (such as tall parents having tall children), one would expect children of high socioeconomic group parents to have more ability than children of low socioeconomic group parents;" in other words, according to the architect behind a multi-billion dollar standardized testing company, public schools are now a Darwinian model of survival of the fittest--or perhaps the richest ("No Child Left Behind?" n.d.).

ACADEMIC STANDARDS

After the implementation of No Child Left Behind, state standards (and standardized assessments aligned to these standards) became the norm to meet accountability measures of this legislation. However, there was a common argument that states could not compare data to one another because each state's expectations was different from one another; hence came the impetus for the Common Core standards, which is a national set of standards that are meant to be used as a curricular framework for all states who adopted them ("In the States," 2012). Like standardized testing, there exists a great deal of controversy surrounding the national implementation of these national standards.

In 2009 the National Governors Association, the Council of Chief State School Officers, and the organization "Achieve," all led by the organization "Student Achievement Partners" and the head of the College Board Organization, David Coleman, wrote these standards. While there were few educators in this group, there were many testing representatives present (Ravitch, as cited in Strauss, 2014). Because the U.S. Department of Education is legally banned from controlling any curriculum in local public schools, it was prohibited from subsidizing the creation of these standards. As a result, the Gates Foundation has funded the cause with nearly $200 million to jump start the implementation of these standards. It is important to note that these standards are considered a starting point and will continue to be revised as new research arises, and students cannot currently opt out of this curriculum if they live in a state that has adopted the standards ("NC Common Core Explained: Frequently Asked Questions," n.d.)

Wiggins (1991) asserted that a school has standards when it communicates high expectations for all its learners, and many proponents of the Common Core standards argue that this curriculum does just that. Those in favor of this curriculum believe that, if implemented correctly, it moves our nation's schools beyond superficial "test preparation" curriculum and gives teachers the opportunity for deep, meaningful learning through fewer and more rigorous standards, helping our nation become more globally competitive (Conley, 2011; Wagner, 2013). Furthermore, by sharing a national curriculum, it will eliminate issues of gaps appearing for students if they are moved from a state mid-year ("The Standards," 2010). It will also allow for the sharing of ideas and resources on a national level while still allowing for local flexibility and interpretation of the standards (Phillips & Wong, 2010). Several professional education associations also support these new curricular standards, the most noteworthy being the nonprofit organization of the Association for Supervision and Curriculum Development (ASCD). This association, founded in 1943, is a membership-based group of educational professionals and experts, and it was one of the final educational organizations to formally endorse the Common Core standards. The ASCD only endorsed these standards after a thorough yearlong review of the standards development and implementation of this curriculum, and it stressed the importance of teacher and administrator input into these standards, along with continuous professional development, to make these standards a success.

Perhaps it is because of improper support and lack of appropriate professional development that opposition, both from political and educational realms, is beginning to grow in response to the implementation of Common Core standards. While a proponent of the common core himself, Conley warned that, if executed poorly, these standards could result in "accountability on steroids, stifling meaningful school improvement nationwide" (2011, para. 2). Furthermore, Diane Ravitch, noted educational historian, expressed that our schools are now comprised of "guinea pigs" trying out a largely untested curriculum (Ravitch, 2013). Ravitch also relayed her fear that issuing national curriculum could lead to a test-based meritocracy by ranking and rating every student, teacher, and school in the country (as cited by Strauss, 2014). Moreover, those opposed to the standards argue that there is no need for a national curriculum as a response to national mobility rates; as of 2011, the inter-state mobility rate is a mere 1.6% of the total population, and of that population, only 0.3% of these are school-age children ("Closing the Door

on Innovation: Why One National Curriculum is Bad for America," 2011).

In Tienken's (2011) research on the growing body of evidence supporting the Common Core standards, he discovered a lack of empirical evidence supporting these standards; this assertion was based upon the 2010 Benchmarking for Success report, which was also written by the same group that created the standards. Of the 138 references used in this report, Tienken asserted that many of them are repetitive sources and that only four could be considered truly empirical studies directly related to national standards and student achievement (2011). The standards themselves are also a source for dispute. College professors who have reviewed the standards at length argue that they are oddly worded and leave much open to interpretation, much like this English Language Arts standard: "Analyze different points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) creating such effects as suspense or humor" (Schmoker & Graff, 2011, p. 2). Other issues surrounding the standards themselves vary. Complaints expressed about English Language Arts are that they focus more on metacognition than content, they are too focused on informational texts (at least 50% of texts in grades 6-12 must be informational), and they convey vague expectations and reading lists (Carmichael et al, 2010; Luebke, 2013). Frustrations regarding mathematics standards include an avoidance of standard algorithms, fractions, and basic arithmetic skills, vague expectations for when to use a calculator, and the introduction of concepts before they are appropriate (such as introducing the idea of functions in first grade) (Carmichael et al, 2010).

Inevitably, growing constituencies of opponents are voicing their concerns that a "one-size fits all" curriculum is counterintuitive and counterproductive in a society that values individualization, differentiation, and customization and that it may place too much emphasis on standardized testing while discouraging teacher autonomy (Stancill, 2013; Westervelt, 2014; Tienken & Zhao, 2010). Furthermore, it ignores various subgroups like learning disabled students as well as disregards parent and teacher input in educational policy (Westervelt, 2014). Having a single set of standards is myopic in that it assumes that all students start and end at the same academic ability while overlooking student diversity (Tienken, 2011). This diversity has historically been viewed as a mark of strength in our educational system, and it is unfortunate that student diversity is now being viewed as negative as our system attempts to fit every student to the same constricted, standardized mold (Luebke, 2013). Opponents of a nationalized, standardized curriculum often draw the comparison of a doctor practicing medicine: would a person want a one-size-fits-all approach to one's medical treatment? Tienken and Zhao (2010) argued: "Why would you allow your child to receive programmed, standardized, one-size-fits-all instruction? We would not allow that for our children and we do not see any evidence that standardizing instruction will improve education for other peoples' children" (p. 7-8).

Further undermining confidence in the Common Core movement has been its effect on standardized testing, the related decline in test scores. Ravitch, who has made herself a vocal opponent of Common Core standards, reported that the dramatic drop in test scores was intentional through testing design. In every state where these tests have been implemented test scores have dropped by approximately 30%, which on NAEP assessments has translated to less than 4 in 10 students being labeled as proficient using the new Common Core standards (Gewertz, 2013; Strauss, 2014;). Given that this steep decrease in test scores is across the general population of students, it only follows that these assessments will hurt students with disabilities, economic disadvantages, and limited English proficiency even more (Ravitch, 2013). Given the fact that many states are opting out of paper-and-pencil assessments in favor of online assessments, this leads to technology and additional funding concerns by states (Kober & Rentner, 2012). U.S. Secretary of Education Arne Duncan has been vocal in his rebuttal to concerns over the precipitous decline in test scores, arguing that "white suburban moms" are upset about the new Common Core tests because "their child isn't as brilliant as they thought they were" (as cited in Strauss, 2013, para. 2). As a result of the tremendous decline in scores and related concerns, as many as 10 states are now delaying implementation of Common Core assessments, and the board of New York's teachers recently unanimously voted to withdraw its support for the Common Core standards (Bidwell, 2014; Strauss, 2013). Principals who withdrew their support in New York testified that ...many children cried during or after testing, and others vomited or lost control of their bowels or bladders. Others simply gave up. One teacher reported that a student kept banging his head on the desk, and wrote, 'This is too hard,' and 'I can't do this,' throughout his test booklet" (Bidwell, 2014. para. 9).

With a sudden reversal of state support for the Common Core, the future of the program is uncertain at best. Although most states that originally adopted the initiative are still implementing the standards and their respective assessments, with the opposition growing, the effect of the standards on student learning is still undetermined at this time (Strauss, 2013).

At this point, after several years of research, development, and a nearly-nationwide implementation of the Common Core standards, abandoning the movement mid-

implementation may be disastrous. As the change process dictates, all implementations have an implementation dip where the process becomes more difficult before true, lasting change takes place. Several researchers believe that the Common Core standards implementation should continue through this "dip" but that some changes are necessary to make it succeed. These researchers believe that rather than as a tool for high-stakes testing, it should be used as a "low-stakes" tool to use for curriculum development and professional development. Furthermore, these researchers argue that Common Core standards and assessments should be subjected to field testing and revisions before using these standards for high-stakes assessments (Mathis, 2010).

RESEARCH FINDINGS

This nonexperimental quantitative study with secondary data analysis was designed to determine how socioeconomic status and student achievement on high-stakes assessments are related. The study was focused on middle grades students in North Carolina public schools during the 2012 and 2013 end-of-grade state assessments. Comparisons were made between the 2012 assessments (pre-Common Core implementation) and 2013 assessments (post-Common Core implementation).

In this study the level of socioeconomic status of the student, the academic year, and the grade of the student are the independent variables, and the dependent variable is academic achievement as indicated by proficiency levels (percentage of students labeled as proficient) on standardized assessments in the areas of reading and mathematics in the middle grades (grades 6-8). A paired sample t test was performed to compare proficiency averages between the 2012 and 2013 academic year for reading and math, which addressed research questions 1 and 2. A one way analysis of variance (ANOVA) was performed to determine if a significant difference exists between economically disadvantaged students' proficiency levels and standardized assessments in 2012 and 2013, which addressed research question 3. The Statistical Program for the Social Sciences (SPSS) was used to analyze data, all of which were analyzed at the .05 level of significance.

Research Question 1

Is there a significant difference between 2012 and 2013 academic achievement scores on mathematics standardized tests for middle grades students?

> $HO_{7:}$ There is no significant difference between 2012 and 2013 academic achievement scores on the mathematics standardized tests for middle grades students.

> A paired-samples *t* test was conducted to evaluate whether a significant

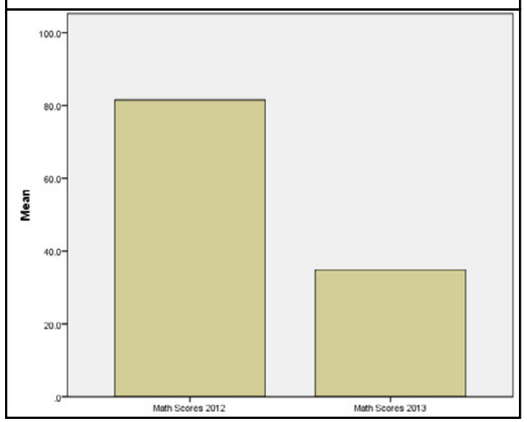
difference exists between academic achievement proficiency scores on mathematics standardized tests for middle grades students between 2012 and 2013. Mathematics achievement scores were significantly lower in 2013 than in 2012. The results indicated that the mean proficiency score (M = 81.54, SD = 10.07) was significantly higher in 2012 than in 2013 (M = 34.83, SD = 15.74), $t(1088) = 107.61$, $p < .001$. Therefore, the null hypothesis was rejected because test scores were significantly higher in 2012 than in 2013. The standardized effect size index, *d,* was 3.26, which is a large effect. The 95% confidence interval for the mean difference between the two years' scores was 45.86 to 47.56. A plot comparing the means of these scores is shown in Figure 13.

Research Question 2

Is there a significant difference between 2012 and 2013 academic achievement scores on reading standardized tests for middle grades students?

> $HO_{8:}$ There is no significant difference between 2012 and 2013 academic achievement scores on the reading standardized tests for middle grades students.

FIGURE 1
MEANS OF MATHEMATICS SCORES IN MIDDLE GRADES STUDENTS COMPARED BY ACADEMIC YEAR



A paired-samples *t* test was conducted to evaluate whether a significant

difference exists between academic achievement proficiency scores on reading standardized tests for middle grades students between 2012 and 2013. Reading achievement scores were significantly lower in 2013 than in 2012. The results indicated that the mean proficiency score (M = 70.40, SD = 12.65) was significantly greater in 2012 than in 2013 (M = 43.06, SD = 14.09), $t(1088) = 76.06$, $p < .001$. Therefore, the null hypothesis was rejected because test scores were significantly higher in 2012 than in 2013. The standardized effect size index, *d,* was 2.30, which is a large effect. The 95% confidence interval for the mean difference between the 2 years' scores was 26.63 to 28.04. A plot comparing the means of these scores is shown in Figure 14.

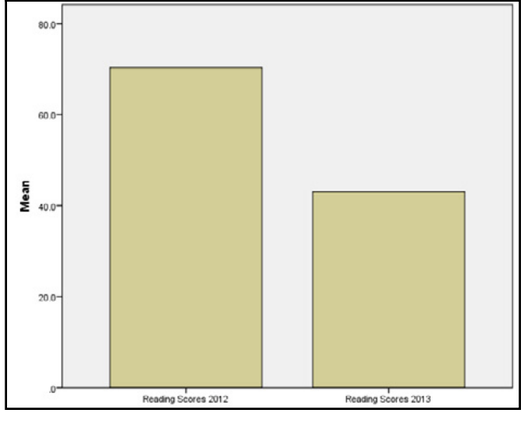
Research Question 3

Is there a significant difference between proficiency levels in both reading and mathematics standardized tests when compared by the schools' economic levels in 2012 and 2013 for middle grades students?

HO1a: There is no significant difference between proficiency levels in both reading and mathematics standardized tests when compared by the schools' economic levels in 2012 for middle grades students.

A one-way analysis of variance (ANOVA) was performed to determine whether significant differences existed between students' proficiency levels in reading and mathematics standardized tests when compared by the schools' economic levels for middle grades students on the 2012 North Carolina state report card. The factor variable, the socioeconomic descriptor of the student population, included four levels: 1%-40% economically disadvantaged, 41%-60% economically disadvantaged, 61%-80% economically disadvantaged, and 81%-100% economically disadvantaged. The dependent variable was the percentage of economically disadvantaged students passing both the reading and mathematics end of grade test for 2012 in each of these SES levels. The ANOVA was significant, $F(3,359) = 57.99$, $p < .001$. Therefore, the null hypothesis was rejected. The strength of the relationship between economically disadvantaged proficiency levels and the four socioeconomic levels as assessed by h2 was medium (.33).

Figure 2
Means of reading scores in middle grades students compared by academic year.



Because the overall F test was significant, post hoc multiple comparisons were conducted to evaluate pairwise difference among the means of the four groups. A Dunnett C procedure was selected for the multiple comparisons because equal variances were not assumed. There were significant differences between the means of students passing both the reading and math standardized assessments at every socioeconomic level. Schools with more students on free or reduced cost lunch scored significantly lower than schools with fewer students on free or reduced cost lunch. Schools with 1%-40% of students receiving free or reduced cost lunch scored significantly higher than schools with 41%-60% of students receiving free or reduced cost lunch, and the 41%-60% socioeconomic bracket scored significantly higher than schools with 61%-80% of the student population receiving free or reduced cost lunch. Likewise, schools in the 61%-80% socioeconomic bracket scored significantly higher than schools with 81%-100% of the student population receiving free or reduced cost lunch. The circles on the box plots denote outliers that are farther than 1.5 interquartile ranges (and closer than 3 interquartile ranges), and the star on the box plots denote the outlier that is farther than 3 interquartile ranges. The numbers next to the circles and star indicate the case number of the outlier. The 95% confidence intervals for the pairwise differences, as well as the means and standard deviations for the four socioeconomic levels, are reported in Table 13, and a box plot comparing the means between the groups is reported in Figure 15.

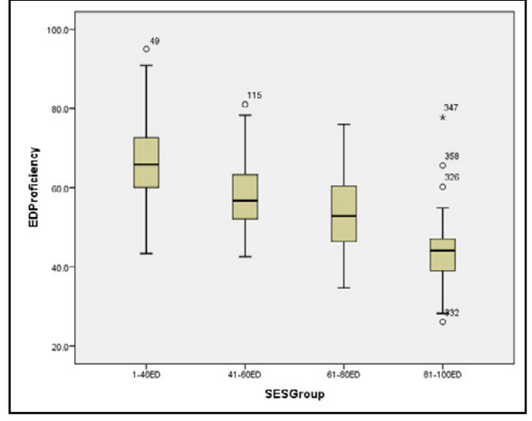
HO1b: There is no significant difference between proficiency levels in both reading and mathematics standardized tests when compared by the schools' economic levels in 2013 for middle grades students.

Table 1
95% Confidence Intervals of Pairwise Differences in Mean Proficiency Scores in Reading and Mathematics Standardized Tests of Middle Grades Students Among Different Levels of Socioeconomic Status

SES Level	N	M	SD	1%-40% ED	41%-60% ED	61%-80% ED
1%-40% ED	64	66.27	10.43			
41%-60% ED	121	57.97	8.06	[4.36, 12.23]*		
61%-80% ED	133	53.47	9.32	[8.77, 16.84]*	[1.66. 7.34]*	
81%-100% ED	45	44.00	9.43	[17.18, 27.36]*	[9.76, 18.18]*	[5.16, 13.77]*

*Significant at the .05 level

Figure 3
2012 Proficiency levels middle grades students according to socioeconomic group.



A one-way analysis of variance (ANOVA) was performed to determine whether significant differences existed between students' proficiency levels on reading and mathematics standardized tests when compared by the schools' economic levels for all middle grades students on the 2013 North Carolina state report card. The factor variable, the socioeconomic descriptor of the student population, included four levels: 1%-40% economically disadvantaged, 41%-60% economically disadvantaged, 61%-80% economically disadvantaged, and 81%-100% economically disadvantaged. The dependent variable was the percentage of economically disadvantaged students passing both the reading and mathematics end of grade test for 2013 in each of these SES levels. The ANOVA was significant, $F(3,359) = 50.78$, $p < .001$. Therefore, the null hypothesis was rejected. The strength of the relationship between economically disadvantaged proficiency levels and the four socioeconomic levels as assessed by h2 was medium (.30).

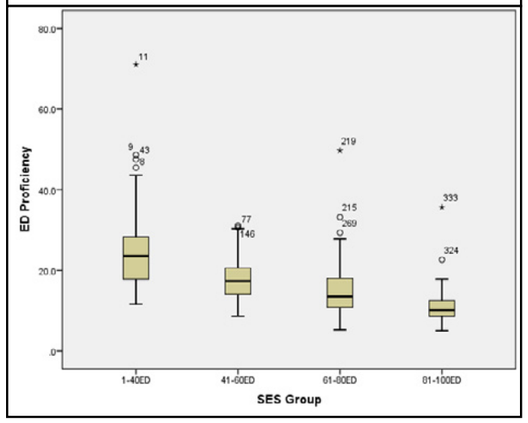
Because the overall F test was significant, post hoc multiple comparisons were conducted to evaluate pairwise difference among the means of the three groups. A Dunnett C procedure was selected for the multiple comparisons because equal variances were not assumed. There were significant differences between the means of economically disadvantaged students passing both the reading and math standardized assessments at every socioeconomic level. Schools with more students on free/reduced cost lunch scored significantly lower than schools with fewer students on free or reduced cost lunch. Schools with 1%-40% of students receiving free or reduced cost lunch scored significantly higher than schools with 41%-60% of students receiving free or reduced cost lunch, and the 41%-60% socioeconomic bracket scored significantly higher than schools with 61%-80% of the student population receiving free or reduced cost lunch. Likewise, schools in the 61%-80% socioeconomic bracket scored significantly higher than schools with 81%-100% of the student population receiving free or reduced cost lunch. The circles on the box plots denote outliers that are farther than 1.5 interquartile ranges (and closer than 3 interquartile ranges), and the stars on the box plots denote outliers that are farther than 3 interquartile ranges. The numbers next to the circles and stars indicate the case number of the outlier. The 95% confidence intervals for the pairwise differences, as well as the means and standard deviations for the four socioeconomic levels, are reported in Table 14, and a box plot comparing the means between the groups is reported in Figure 16.

Table 2
95% Confidence Intervals of Pairwise Differences in Mean Proficiency Scores in Reading and Mathematics Standardized Tests of Middle Grades Students Among Different Levels of Socioeconomic Status

SES Level	N	M	SD	1%-40% ED	41%-60% ED	61%-80% ED
1%-40% ED	62	25.37	10.60			
41%-60% ED	121	17.83	4.98	[3.79, 11.29]*		
61%-80% ED	126	15.04	6.34	[6.48, 14.17]*	[0.90, 4.67]*	
81%-100% ED	54	11.04	4.79	[10.38, 18.29]*	[4.70, 8.88]*	[1.74, 6.28]*

*Significant at the .05 level

Figure 4.
2013 Proficiency levels of middle grades students according to socioeconomic group.



DISCUSSION AND IMPLICATIONS FOR FUTURE RESEARCH AND PRACTICE

After analyzing these data, it becomes apparent that student socioeconomic status and academic achievement continue to be negatively correlated, supporting earlier research by Sirin (2005) and White (1982); that is, the higher the poverty level within a school, the lower the academic achievement based on standardized test scores. However, the question still remains regarding the relationship between the new Common Core curriculum and standardized test scores. Although test scores with the new curriculum were significantly lower in 2013 than in 2012, correlation does not equal causation. One cannot prove that the Common Core curriculum caused lower test scores. Furthermore, it is often anticipated that test scores are lower the year a new curriculum is implemented, so the findings of this research are consistent with this expectation. It is this researcher's recommendation that this study be replicated longitudinally over the course of 5 years (a normal curriculum cycle) to determine whether standardized test scores continue to be significantly lower with the Common Core curriculum than they were with the previous North Carolina Standard Course of Study. Five-year trend evidence would provide appropriate evidence for the effects of the Common Core curriculum on high poverty students.

Additionally, those in control of the educational system must not continue to ignore the host of research that warns against using only standardized testing as the only means of measuring the quality and effectiveness of schools and student achievement. Kohn (2000) reminded the public that Piaget warned schools not to rely heavily upon standardized test scores and grades, as they do not serve as predictors for future success in the adult workplace. Popham (2001) argued that educators must also accept blame for placing too much emphasis on standardized testing because teachers and principals did not take a more aggressive stance against testing when the accountability movement gained momentum. Furthermore, Wiggins (2012) pointed out that there are always outliers regarding standardized testing trends. There are some high poverty schools that score much higher than schools of similar demographics, and occasionally, there are low poverty schools that do not score as well as other wealthy schools. It is crucial that researchers study the high poverty outliers--that is, those schools that outperform schools with similar demographics, in order to determine which measures or programs educational leaders ascribe to the school's academic success.

One such outlier, Grassy Fork School in eastern Tennessee, became acclaimed for its academic turnaround because of its focus on differentiated instruction, differentiated (and quality) professional development, and attitude in its school leaders that changed the culture and climate in the school (Thomas, 2009). As a result, this school went from nearly being taken over by the state department of education to an example the rest of high poverty schools strive to follow. Educators and policymakers must stop being tolerant and accepting of the link socioeconomic status and student achievement by referring to it as a truth of our system (Wiggins, 2012).

Lastly, but perhaps most importantly, schools cannot effectively improve student academic achievement without dealing with one of the most critical issues in our schools today: student poverty. Just as a doctor cannot treat a patient's symptoms without attacking the infection, teachers cannot improve academic achievement in students without addressing the underlying economic issues that affect the student and family. Schools in high poverty areas already have difficulty in hiring and retaining high quality teachers due to the inherent difficulty in these positions and cycle of low expectations and poor performance (Potter 2013). When the deck is already stacked against high poverty schools and students, high quality instruction is paramount.

Some researchers suggest introducing socioeconomic integration by busing, much like what was implemented during the Civil Rights movement, to bring in better teachers and enhance parent engagement. A 2010 meta-analysis suggested that students in socioeconomically integrated schools performed better in mathematics achievement testing than nonintegrated schools (2013). It is important to note that because poverty is an issue that exists outside the control of our schools, "...no policy improves 'socioeconomic status' directly....good policy is based on an understanding of causal relationships between family background and children outcomes, as well as cost-effectiveness" (Duncan & Magnuson, 2005, p. 35). However, there are several ways schools can positively impact our high poverty students to address issues that stem from a low socioeconomic level:

- Provide access to high quality, experienced teachers;
- Provide access to school resources (both at school and at home);
- Maintain high expectations and high quality curriculum;
- Provide parent education and assistance from social services;
- Facilitate community services provided to families through the school (i.e., free dental clinics, parent education workshops, food pantry for families, etc.);
- Focus on early education programs (like Pre-Kindergarten/Head Start programs) and interventions for all at-risk students;
- Provide specialized training and high quality professional development for faculty and staff in best practices for high poverty students;
- Focus on the school becoming a community of learners;
- Improve parent involvement;
- Improve relationships between school and community;
- Increase school funding from local, state, and federal agencies;
- Offer summer enrichment and summer school programs; and
- Maintain for small school and class size (Brooks-Gunn & Duncan, 1997; Jensen, 2009; Muijs, Harris, Chapman, Stoll, & Russ, 2009; Reardon, 2013; Sirin, 2005).

While this list is not all-inclusive, it provides a beneficial starting point for schools that have a large population of high poverty students. However, improving academic achievement in the high poverty school is often an uphill battle.

Sadly, the founder of the Educational Testing Service, Henry Chauncey, has been quoted as saying "if there is anything in heredity (such as tall parents having tall children), one would expect children of high socioeconomic group parents to have more ability than children of low socioeconomic group parents" ("No Child Left Behind?," n.d.). In other words, according to the architect behind a multi-billion dollar standardized testing company, public schools are now a Darwinian model of survival of the fittest--or perhaps the richest. If this is the mantra behind standardized testing and accountability in our country, our schools, and therefore our nation's future, are in dire straits.

DISCUSSION AND IMPLICATIONS FOR TEACHER PREPARATION PROGRAMS

The Common Core movement, along with what we know as educational researchers about the effects of poverty on student achievement, has a significant impact on how we are preparing our future teachers as undergraduate stu-

dents at the collegiate level. Schools with high levels of poverty score very low on current measures of effectiveness which are primarily based on standardized tests. Reeves (2000) recognized exceptions to this in his study of 90-90-90 schools; 90% poverty, 90% ethnic minority, and 90% proficient on state assessments. Jenson (2009) identified five key factors in meeting the needs of students from poverty. Jenson used the SHARE acronym:

- Support of the Whole Child
- Hard Data
- Accountability
- Relationship Building
- Enrichment Mindset.

In addition to recommendations from Reeves and Jenson, Marzano (2004) discussed closing gaps of children from poverty with specific approaches to teaching. And finally, Payne (1996) offered schema to understand the experiences and thinking of families in generational poverty. Are these resources being used in teacher preparation?

An informal survey of five teacher preparation programs in the Appalachian area revealed no explicit approach to preparing teacher candidates for teaching students of poverty. All five schools rely on the broad diversity statements in each syllabi, field experiences, and the candidate's final portfolio for evidence of the candidate's preparation in this area. We, the authors, make the assertion that this is not enough.

We recommend a deep look at course syllabi to identify where approaches to teaching students of poverty can be included. We recommend that teacher preparation programs identify assessment measures for student learning in this area. The academic gap for children of poverty is too obvious for this to be ignored by teacher preparation programs.

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