The Influence of Placement in an Inclusive Classroom on the Academic Performance of Non-disabled Eleventh Grade Students in A Suburban New Jersey School District

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The purpose of this study was to determine the influence, if any; assignment to an inclusive secondary language arts classroom setting has on the academic performance of grade 11 non-disabled general education students in two suburban New Jersey High Schools. Using a sampling process known as Propensity Score Matching (PSM), a statistical technique that greatly reduces the influence of selection bias endemic to most observational designs, a sample of 214 grade 11 students' 2013 NJHSPA Language Arts Literacy performance scores were analyzed to see what influence placement of non-disabled students in inclusion classes has on performance while controlling for ethnicity, gender, socioeconomic status, time in district, attendance, and past academic performance. Results suggested that placement in an inclusive classroom did have a slight, yet statistically significant, negative influence on non-disabled grade 11 student performance on the language arts literacy section of the 2013 New Jersey HSPA. Additionally, further analysis indicated that this effect could be exacerbated by the number of years a non-disabled student has been assigned to an inclusive language arts classroom environment and the school they attend.

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Due to initiatives such as Race to the Top, teacher and administrator evaluations have been linked to student performance on test scores in many states (U.S. Department of Education, n.d.). With high stakes accountability policies such as value-added measures of teacher and administrator effectiveness at the center of a national movement to evaluate, promote, compensate, and dismiss teachers, it is necessary for educators and policy makers to be informed of effective educational practices that benefit all students (Tamayo, 2010).

With the increased responsibility of school administrators and teachers to improve student outcomes on assessments, school leaders are faced with the challenge to develop programs that will allow students of varying needs to be successful (Corcoran, 2010). Although legislation places an emphasis on developing inclusive practices that meet the needs of students with disabilities, it is necessary to ensure that the needs of non-disabled students are also addressed.

School leaders have access to an abundance of research on the influence of inclusion classes on classified students when making decisions. However, they have minimal access to literature addressing its influence on students without disabilities (Daniel & King, 1997; Gattuso, 2008; St. John & Babo, 2015). Educators tend to focus on the benefits of inclusion for students with special needs; however, with the diverse needs of students in most classrooms, it is also necessary to measure the influence of inclusion practices on general education students. Providing the most appropriate environment in which to learn to all students will help to increase student achievement and consequently prevent negative outcomes for administrators, schools and students.

Brief Review of the Literature

Educators rely on current research to make informed decisions on the placement of students with special educational needs as well as those without. Current policy requires that students be placed in the least restrictive environment (LRE), which oftentimes for students with special needs, is an inclusion setting. Therefore, it is necessary for educators and policy makers to understand the influence of such an environment on students with special needs as well as non-disabled students.

It is difficult to draw clear conclusions about the potential benefits or drawbacks about this method of instruction based upon available research (McDonnell, Thorson, Disher, Mathot-Buckner, Mendel & Ray, 2003; Ruijs & Peetsma, 2009). Those in support of the practice of inclusion argue that students who are educated in an inclusion classroom setting may benefit both socially and academically from the environment (McDonnell et al., 2003). Those who advocate for inclusion contend that non-disabled students who are educated with students who have special needs are more tolerant of differences, and students with disabilities who are educated with typical peers are exposed to peers who demonstrate and model appropriate social behavior (Daniel & King, 1997; Lindsay, Prolux, Thomson & Scott, 2013).

Educators who oppose the practice of inclusion argue that non-disabled students who are educated among their disabled peers experience negative consequences. For instance, opponents state that when educated among students with disabilities, regular education students imitate undesirable behaviors displayed by their disabled peers (Ruijs & Peetsma, 2009). Additionally, those who do not support the practice of inclusion make the argument that non-disabled students become bored with the pace of instruction when educated among students with disabilities, while students with disabilities struggle to keep up with the pace of instruction (Daniel & King, 1997).

The majority of studies have found that there are no statistically significant differences in the performance of non-disabled students when placed in an inclusion setting (Ruijs & Peetsma, 2009). In an exploratory study by McDonnell et al. (2003) of the influence inclusive educational

practices had on the achievement of students with disabilities and their non-disabled peers, it was determined that the placement of students with developmental disabilities in an inclusion setting did not have a statistically significant negative impact on their non-disabled peers as measured by state mandated assessments in language arts or math. These results are consistent with the research that indicates neutral academic outcomes for non-disabled students who are educated in classrooms with peers who have special needs (Ruijs & Peetsma, 2009).

Several factors in addition to classroom setting may have an influence on student achievement. Such variables may include socioeconomic status (SES), gender, ethnicity, and attendance (Coleman, 1966). The combination of these variables in addition to placement in an inclusive setting may potentially influence student achievement. The current study contributes to the small body of research that exists on the factors that may influence the academic achievement of regular education students. It is important to explore this area further due to federal law requirements that students be educated within the regular education classroom when appropriate. In addition, with the increased accountability of educators to ensure that students perform at a proficient level on standardized tests, research on the effects of inclusive practices must be conducted and understood by individuals in the field.

Problem

The national movement to utilize value-added measures to promote, evaluate, compensate, and dismiss teachers and administrators has increased the importance of Federal, state and local policy makers to be informed of effective practices that benefit all students. Therefore, school leaders have begun to measure teacher effectiveness based on student achievement instead of teacher input (Corcoran, 2010). The shift in attention to teachers' impact on student growth is largely based upon research that indicates that individual teachers are the most influential component of an effective school (Marzano, 2007).

Recent policies of high-stakes accountability such as Race to the Top, a four billion dollar competitive government grant program aimed at systemic education reform that requires teacher evaluations to be linked to student progress, and foundations such as the Bill & Melinda Gates Foundation which provide financial support for teacher evaluation reform efforts, have increased pressure on school leaders to measure the academic performance of students (Corcoran, 2010). In addition to Race to the Top requirements that teachers and administrators be evaluated on the academic performance of students on high-stakes tests, Federal policies such as No Child Left Behind (NCLB) and Individuals with Disabilities Education Improvement Act (IDEIA) require that students with disabilities have access to the same curriculum as their non-disabled peers in the LRE to the maximum extent possible. In some instances, the LRE for disabled students is in an inclusion classroom with typically developing peers.

School leaders have been charged with the task of developing programs that most appropriately meet the needs of students with varying abilities so they may attain a passing score on state assessments. Therefore, educators must foster an academic environment that meets the needs of all students. Although NCLB emphasizes developing inclusive practices to address the needs of students with disabilities, it is also necessary to ensure that the needs of regular education students are met. Many educators question whether inclusion settings are beneficial to all students, including those who do not have a disability, however school leaders must determine the appropriate placement for all students, with and without a disability.

Research on the influence of inclusion on the non-disabled students' academic performance yields varied results (Daniel & King, 1997; Idol, 2006; McDonnell et al., 2003). A great deal of

quantitative evidence suggests that students with disabilities benefit socially from being educated in an inclusion classroom setting. A smaller body of evidence, however, examines the effect of being in an inclusion classroom setting on students without disabilities. Within the research that exists on this topic, the variables that may influence the academic achievement of regular education students in an inclusive classroom such as ethnicity, socioeconomic status, gender, attendance, and free and/or reduced lunch eligibility are rarely identified (Daniel & King, 1997).

Purpose and Research Questions

The purpose of this study was to examine the influence of an inclusive classroom setting on the academic performance of general education secondary students on the language arts literacy section of the 2013 New Jersey High School Proficiency Assessment (NJ HSPA). In addition, this study examined the dependent variable of performance on the language arts literacy section of the 2013 NJ HSPA, while controlling for the independent variables of socioeconomic status, ethnicity, gender, attendance, past academic performance, length of time in district, placement in an inclusive language arts classroom setting, and number of years in an inclusive language arts classroom setting.

The overarching question that guided this study was: What influence, if any, does placement in an inclusive language arts classroom setting have on Grade 11 non-disabled students' academic performance in Language Arts Literacy as measured by the Language Arts Literacy section of the 2013 NJ HSPA when controlling for gender, student ethnicity, SES, student attendance, and academic past performance?

Methodology

Population

The participants of this study were selected from a suburban middle to upper middle class PreK-12 school district located in central New Jersey. The school district is comprised of 17 schools and serves approximately 10,500 students. The school district contains two PreK-5 elementary schools, ten K-5 elementary schools, three 6-8 middle schools, and two 9-12 high schools.

The sample was limited to two high schools, MTN and MTS. MTN High School had approximately 1,474 students, 373 in grade nine, 363 in grade ten, 364 in grade eleven, 350 in grade twelve, and 24 students who were repeating grade 12. About 88.2% of the students in MTN were classified as white, 2.8% were African American, 6.3% were Hispanic, 2.7% were Asian, 0.3% American Indian, 0.6% Pacific Islander, and 0.1% were of two or more races. Approximately 16% of students in the school had been classified as having special educational needs, and 13.6% of students qualified for free or reduced lunch.

MTS High School consisted of about 1,364 students with 344 in grade nine, 329 in grade ten, 323 in grade eleven, 344 in grade twelve, and 25 students repeating grade twelve. 91.6% of the students were classified as white, 1.4% African American, 3.8% Hispanic, 2.7% Asian, 0.3 % American Indian, and 0.1% Pacific Islander. Sixteen percent of students in the school had been classified as having a disability, and 5.4% of the students qualified for free or reduced lunch.

Participants in the study met the following criteria: students in the sample were in the eleventh grade during the 2012-2013 school year at MTN High School or MTS High School, each student had valid overall and cluster scores in language arts literacy on the 2010 NJ ASK 8 and the

2013 NJ HSPA state assessments, each student was enrolled in the district during grades 8-11, and each student in the sample was considered a general education student and was deemed ineligible for special education services.

Students were assigned to either a College Prep I (CPI) or College Prep II (CP II) level English course based on standardized test data from the previous year, teacher recommendations based on course performance and district requisites, and parent input. Students who did not perform on at least the proficient level on standardized tests or did not receive the requisite course grade were recommended to the CP II English level. The CPII level courses were inclusion classes where general education and classified students were taught in the same classroom. Two certified teachers, one content expert, and one special education teacher, taught the students in the class. Both general education and special education students in the classes were exposed to the same curriculum and assessments, and were taught in the same classroom at all times. Students who received a score of proficient or above and received the requisite course grade in language arts were recommended for the CPI level. During their junior year, CPI and CPII classes were merged because both courses provided students exposure to the same curriculum and common assessments. Therefore, in their junior year, students were assigned to a general college preparatory level English course by the computer, rather than by their counselor.

Propensity Score Matching (Sampling)

The sample used for statistical analysis was obtained through the use of Propensity Score Matching (PSM). Developed by Rosenbaum and Rubin (1983), PSM attempts to increase the validity of causal inference from observational studies by balancing the distributions of the observed covariates between the treatment and control groups (Bai, 2011). A propensity score is used to reduce the selection bias by balancing groups and allowing direct comparisons of the observational data, according to Bai (2011). In other words, PSM allows one to compare groups as if conducting a randomized experiment (Olmos& Govindasamy, 2015). We decided to use PSM for two primary reasons. First, PSM assists in marginalizing the influence of selections bias, which in turn reduces the possibility of a Type I error (the probability of rejecting a null hypothesis that is true). Second, the study was based on data obtained from students attending two separate schools. Therefore, we would have been obliged to run the analysis separately for each school. However, PSM allowed us to better control for the school as a nested community and to identify the effects of condition on an individual student's performance. Consequently, we were able to combine both school samples into one overall sample since PSM controlled not only for school factors but also for individual student factors.

PSM has been widely used in many fields of study, however it is a method that is relatively new to the field of education (Lane & Henson, 2010). Randomly assigning students to inclusion classrooms in a school is impractical and most often unethical; therefore, an alternative method of reducing selection bias is necessary. PSM allows statistically equivalent groups to be developed through matched sampling. Group differences due to demographic characteristics rather than treatment effects are eliminated by utilizing matched sampling (Hahs-Vaughn & Onwuegbuzie, 2006). In order to study the effect of the independent variables on the student achievement of eleventh grade students at two schools, a quasi-experiment was designed where students from one school were matched with students from another based on relevant characteristics. In addition to what was previously stated as the rationale for using PSM in a quasi-experimental design correlation study, is the implication that PSM provides an artificial condition of a randomized design type methodology. Randomized design is one of the strongest methodologies of all

research designs (Cresswell, 2012; Gall, 2012).

Results

A simultaneous multiple regression was run to determine the amount of influence the independent variables gender, race, SES, time in district, attendance, academic past performance as measured by the NJASP 8 LAL, and placement in an inclusive English classroom had on eleventh grade students' performance on the 2013 NJ HSPA Language Arts Literacy section (see Table 1).

Table 1

Variables in Model 1 Regression

Variable	Variable Type	Measurement
Gender	Categorical/Dichotomous	0 = male; 1 = female
Race	Categorical/Dichotomous	0 = non-white; 1 white
SES	Categorical/Dichotomous	0 = not on Free & Reduced Lunch; 1 = on Free & Reduced Lunch
TID (Time in District)	Scale	# of years in school district
Attendance	Scale	# of days absent from school
NJASK 8 LAL	Scale	Composite Score from 100 - 300
Inclusion	Categorical/Dichotomous	0 = gen. ed. student not in inclusive classroom; 1 = gen. ed. student in inclusive classroom

Model 1 involved 214 eleventh grade students. In multiple regression Model 1, the dependent variable was the 2013 NJ HSPA Language Arts Literacy scaled score for eleventh grade students. In this model, the value of R^2 was .377, which indicated that 37.7% of the variance in performance on the Language Arts Literacy section of the 2013 NJ HSPA was attributed to the independent variables. The Durbin-Watson score was 2.215, which indicated that the residuals of the variables were not related and this assumption for regression was met. The Model 1 regression was statistically significant ($F = 17.795$, df=7,206, $p < .001$)

Examination of the standardized beta coefficients table (see Table 2) indicated that the three statistically significant predictors of performance on the Language Arts Literacy section of the 2013 NJ HSPA were inclusion, attendance, and past performance, which accounted for 34% of the variance in this regression model. Multicollinearity was not of concern because all predictor variables included in the regression met the tolerance level threshold for this model, .644 (>1-R^2) (Leech, Barrett, & Morgan, 2011).

Student attendance was a significant predictor of performance on the Language Arts Literacy section of the 2013 NJ HSPA ($\beta = -.175$ $t = -3.147$, $p<.05$). Attendance contributed to 3.1% of the variance in this regression model. The negative beta indicated that as number of days absent increased, performance on the Language Arts Literacy section of the 2013 NJ HSPA decreased.

Past academic performance was a statistically significant predictor of performance on the Language Arts Literacy section of the 2013 NJ HSPA (β=.542, t=9.610, $p< .001$). According to the analysis in this model, past performance accounted for 29.4% of the variability in Grade 11

students' performance on the Language Arts Literacy section of the 2013 NJ HSPA. The positive beta indicated that as student performance on the Language Arts Literacy section of the 2010 NJ ASK 8 increased, performance on the Language Arts Literacy section of the 2013 NJ HSPA also increased.

Placement in an inclusive English classroom setting was a statistically significant predictor of performance on the Language Arts Literacy section of the 2013 NJ HSPA for non-disabled students in Grade 11 (β= -.125, t= -2.260, $p<.05$). Placement in an inclusion classroom setting contributed to 1.6% of the variance of eleventh grade students' performance on the Language Arts Literacy section of the 2013 NJ HSPA. The negative beta indicated that general education students placed in a non-inclusive classroom setting performed higher on the Language Arts Literacy section of the 2013 NJ HSPA than general education students who were placed in an inclusive English classroom setting.

Of the three statistically significant variables, student attendance, past performance, and placement in an inclusion classroom setting for Language Arts Literacy, past performance was the strongest predictor of performance on the Language Arts Literacy section of the 2013 NJ HSPA. Past performance was a stronger predictor of performance on the Language Arts Literacy section of the 2013 NJ HSPA than the variables student attendance and placement in an inclusion classroom setting.

Table 2

Model 1 Coefficients Table for 2013 NJHSPA Language Arts Literacy

Model 1 Variables	B	SEB	β	t	Sig.	95% Lower	95% Upper	Tolerance
Gender	-1.380	1.583	-.049	-.872	.384	-4.501	1.741	.951
Race	-2.979	2.457	-.072	-1.212	.227	-7.823	1.865	.850
SES	-.463	2.459	-.011	-.188	.851	-5.311	4.385	.823
TID	-2.007	8.121	-.014	-.247	.805	-18.017	14.00	.927
Attendance	-.953	.303	-.175	-3.147	.002*	-1.550	-.356	.973
NJASK 8 LAL	.421	.044	.542	9.610	.000*	.335	.508	.951
Inclusion	-3.427	1.516	-.125	-2.260	.025*	-6.416	-.438	.985
Constant	157.281	26.89		5.848	.000	104.25	210.3	

Based on this analysis, it was found that placement in an inclusive language arts classroom setting had a statistically significant influence on Grade 11 non-disabled students' Language Arts Literacy academic performance as measured by the 2013 NJ HSPA when controlling for gender, race, SES, student attendance, and academic past performance as measure by the NJASK 8.

Factorial ANCOVA

In order to determine if "school" might serve as a treatment factor, a Factorial Analysis of Covariance (ANCOVA) was performed. The Factorial ANCOVA allowed us to determine if there was a significant interaction between the two schools and the number of years a general education

student was placed in inclusion. This analysis was run based on the results of Robinson (2012), which indicated that differences in the academic performance of general education students placed in inclusion classrooms may exist based on school and possibly attributable to school factors alone. Consequently, we looked at two main effects, school and number of years in an inclusive classroom setting, while controlling for student academic past performance (NJASK 8 LAL). Student academic past performance was included in the analysis as a covariant or control variable, because it accounted for the largest percentage of variance in performance on the Language Arts Literacy section of the 2013 NJ HSPA in the Model 1 regression.

This Factorial ANCOVA included 68 students from MTS and 141 students from MTN. Table 3 displays descriptive statistics by school assignment and number of years a general education student was assigned to an inclusion class for the Language Arts Literacy section of the 2013 NJ HSPA. This table displays mean performance before the covariate was taken into consideration.

Table 3

Descriptive Statistics of School and Inclusion Years

Inclusion Years	School	Mean	Std. Deviation	*N*
0.00	MTS	238.2424	15.16993	33
	MTN	243.1757	12.76807	74
	Total	241.6542	13.67418	107
1.00	MTS	239.8929	11.51276	28
	MTN	239.2000	11.18195	40
	Total	239.4853	11.23892	68
2.00	MTS	219.2857	26.91167	7
	MTN	234.7407	11.22015	27
	Total	231.5588	16.46519	34
Total	MTS	236.9706	16.28567	68
	MTN	240.4326	12.40467	141
	Total	239.3062	13.84363	209

In the Factorial ANCOVA analysis (see Table 4), the covariate NJASK 8 LAL, past academic performance, was found to have a statistically significant influence on Grade 11 Language Arts Literacy performance (F (1, 202) = 97.375: p<.001). The index for the effect size for each independent variable and the interaction between school and inclusion, partial eta^2, for past academic performance is .325. Therefore, past academic performance is accountable for 32.5% of Language Arts Literacy achievement on the 2013 NJ HSPA. The influence of inclusion years was also found to have a statistically significant influence on the dependent variable of Language Arts Literacy performance on the 2013 NJ HSPA (F (2, 202) =6.230; p = *002*). The partial eta^2 for inclusion years was .058, indicating that 5.8% of Language Arts Literacy achievement on the 2013 NJ HSPA can be predicted by inclusion years. In addition, school was

found to have a statistically significant influence on the dependent variable (F (1, 202) =13.702; p <.001). The partial eta^2 for school was .064, which indicates that 6.4% of performance on the Language Arts Literacy section of the 2013 NJ HSPA can be predicted by past academic performance. Finally, the interaction term between inclusion years and school was found to have a statistically significant effect on the dependent variable (F (2, 202) = 3.159; p= .045). The partial eta^2 for the interaction between inclusion years and school was .030, which indicates that 3% of the variance in Language Arts Literacy performance on the 2013 NJ HSPA could be predicted by the interaction between inclusion years and school.

Table 4

Tests of Between-Subjects Effects School and Inclusion Years When Controlling for Past Performance on NJHSPA Grade 11 Language Arts Literacy

Variables & Source	***df***	**Mean Square**	***F***	**Sig.**	**Partial Eta Squared**
NJASK 8 LAL	1	11494.225	97.375	.000	.325
School	1	1617.336	13.702	.000	.064
Inclusion Yrs.	2	735.412	6.230	.002	.058
School * Inclusion Yrs.	2	372.858	3.159	.045	.030
Error	202	118.041			

Since it was determined that the interaction between school and number of inclusion years was statistically significant, a variable labeled "School Interact" was created in order to identify precisely where the significant differences between the cross categories took place. Six new groups were created accounting for all possible combinations of the interaction terms. These new groups were formed in order to examine differences between the interactions of the specific group designations and were coded as follows:

School MTS, 0 years of inclusion (n=33)
School MTN, 0 years of inclusion (n=74)
MTS, 1 year of inclusion (n=28)
School MTN, 1 year of inclusion (n=40)
School MTS, 2 years of inclusion (n=7)
School MTN, 2 years of inclusion (n=27)

The initial analysis was a Factorial ANCOVA where the NJASK 8 LAL student performance scores were used to control for student past academic performance, therefore an Analysis of Covariance (ANCOVA) was performed on the main effect "School Interact" while controlling for student NJASK 8 LAL performance and significant differences between groups were found (F (5, 202) = 4.562; p = .001). Table 5 displays the adjusted means for each level of the main effect, "School Interact." Table 6 displays the actual results of the ANCOVA.

Table 5

Adjusted Means for School Interact Categories for the NJHSPA Gd. 11 LAL when Controlling for NJASK 8

School Interact	*N*	Mean	Std. Error
MTS, 0 years of inclusion	33	237.806	1.892
MTN, 0 years of inclusion	74	242.528	1.265
MTS, 1 year of inclusion	28	237.505	2.067
MTN, 1 year of inclusion	40	239.173	1.718
MTS, 2 years of inclusion	7	223.424	4.128
MTN, 2 years of inclusion	27	238.492	2.125

Table 6

Tests of Between-Subjects Effects on School Interact Main Effect on NJHSPA Grade 11 Language Arts Literacy when Controlling for Past Performance on the NJASK 8 LAL

Variables & Source	*df*	Mean Square	*F*	Sig.	Partial Eta Squared
NJASK 8 LAL	1	11494.225	97.375	.000	.325
School Interact	5	538.473	4.562	.001	.101
Error	202	174.081			

A Tukey's Post hoc analysis (see Table 7) was computed showing statistically significant mean differences in NJHSPA Grade 11 Language Arts Literacy performance between general education students at MTS and MTN who were never assigned to inclusion classes when controlling for past academic performance (p = .039). For students assigned to an inclusion classroom for one year there were no significant difference in performance between the schools yet there was for those assigned to inclusion classrooms for two years.

Results within the MTS school indicate that whether a student was never assigned to an inclusion class or assigned for one year, average performance was almost identical, which was not the case at MTN; however, the slight difference in scores at MTN was not statistically significant. Interesting to note is that within the MTS school there was a statistically significant difference between one and two years of a general education student being assigned to an inclusive classroom indicating the more years a student was assigned to an inclusive classroom at MTS the lower his/her performance on the NJHSPA Grade 11 Language Arts Literacy assessment. This was not the case within the MTN school. Average performance differences across all three levels were not statistically significant.

Table 7 indicates that all of the significant difference in the adjusted mean scores actually occurred in the differing years of inclusion at MTS or between the MTS and MTN schools with MTN students scoring consistently higher than MTS students. The pairwise comparisons indicate that the general education students at MTN never score significantly different from one another

whether they were never in an inclusive classroom or in for one or two years. This is not the case with MTS. Statistically significant differences were found between zero and two years and one and two years of a general education student being assigned to an inclusive classroom. Consequently, variability in student performance at the MTS school is much more prevalent than that of students at the MTN school.

Table 7

Tukey HSD Post Hoc Significant Results for NJHPA Gd. 11 LAL Performance based on the Main Effect School Interact

(A) School Interact	(B) School Interact	Mean Difference (A-B)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
MTS, 0 years of inclusion	MTN, 0 yrs. of inclusion	-4.722	2.274	.039	-9.207	-.238
	MTS, 2 years of inclusion	14.382	4.545	.002	5.420	23.343
MTN, 0 years of inclusion	MTS, 1 yr. of inclusion	5.023	2.417	.039	.257	9.789
	MTS, 2 years of inclusion	19.104	4.324	.000	10.579	27.629
MTS, 1 year of inclusion	MTS, 2 years of inclusion	14.081	4.639	.003	-4.935	23.227
MTN, 1 year of inclusion	MTS, 2 years of inclusion	15.748	4.471	.001	6.932	24.565
MTS, 2 years of inclusion	MTN, 2 years of inclusion	-15.068	4.608	.001	-24.155	-5.982

Conclusions, Discussion and Recommendations

Results of this study indicate that placement in an inclusion language arts literacy classroom setting had a statistically significant influence on eleventh grade non-disabled students' language arts literacy performance as measured by the 2013 NJHSPA when controlling for gender, race, socioeconomic status, student attendance and academic past performance (NJASK 8 LAL). It appears that non-disabled students who were placed in an inclusion English classroom setting did not perform as well on the language arts literacy section of the 2013 NJ HSPA as their peers who were not placed in an inclusion classroom. Regular education students who were placed in inclusion classes had lower mean scores on the assessment than students who were not. However, it was evident by the results of this study that the school a student attended had a statistically significant influence on student performance based on the differences between the MTS and MTN

schools. This finding was congruent with the findings of earlier research completed by Robinson (2012) and St. John (2015), which showed that school level factors contributed to the academic performance of middle school general education students who were assigned to inclusive classrooms. As with Robinson and St. John's research, school factors that might have contributed to the lower mean scores on the language arts literacy section of the 2013 NJ HSPA for students at MTS were not identified in this study since it was not its primary focus. Further research will need to be conducted to determine what those school factors might be.

According to the literature on the influence of inclusion on regular education students, differences in schools is an important factor in the academic achievement of regular education students who are educated in an inclusion classroom (Ruijs & Peetsma, 2009; Robinson, 2012). Although the same demographic variables were explored at MTS and MTN, students performed differently on the language arts literacy section of the 2013 NJ HSPA at each school when taking past performance into consideration. The effect size was small in some cases, however this may indicate that school-based factors other than those explored in this study are influencing the academic performance of non-disabled students who are placed in an inclusive language arts classroom setting. These school-based factors could be quality of instruction, class size, curricula, scheduling, student classroom assignment, etc.

Findings of this study suggest that as the number of years a student spends in an inclusion classroom setting increases, academic achievement as measured by the language arts literacy section of the 2013 NJ HSPA declines. In other words, students who spent more years in an inclusion language arts classroom did not perform as well as their peers who spent fewer years in an inclusion setting. This was specifically evident in the MTS school where those differences were statistically significant. Although the findings were statistically significant, the effect of inclusion on student performance in this study was small (β=-.117, which indicates that 1.37% of the variance in academic performance can be explained by inclusion). More research should be conducted on this topic using a larger and more heterogeneous sample. The sample used in this study was a small sample from an upper middle class, suburban school district and the results may only be generalized to a similar population.

The findings of this study may provide school leaders with information about the importance of addressing the academic needs of all students, specifically general education students assigned to inclusive classrooms. There are several socio-structural barriers that educators may encounter when establishing inclusive programs, however. Such barriers may include lack of training, scheduling challenges, and lack of collaboration (Lindsay, Prolux, Thomson & Scott, 2013). In order to establish successful inclusion programs, instructors must receive training on methods for working with diverse learners during their pre-service training, as well as throughout their tenure as a teacher. According to researchers, general education teachers are expected to be prepared to teach diverse groups of students, however many pre-service and in-service do not equip educators with the necessary knowledge and skills to do so. As a result, teachers are entering classrooms each year unprepared to teach students in an inclusion setting (LeDoux, Graves & Burt, 2012). With this understanding, school leaders must seek and provide appropriate professional development opportunities to general education and special education teachers. The areas that administrators may consider providing support to general education teachers working in an inclusion classroom may include the understanding of various disabilities, behaviors and federal laws (LeDoux, Graves & Burt, 2012). This practice will ensure that teachers receive the support they need in order to meet the needs of all of their students, regardless of their classification.

Policy makers and post-secondary school leaders bear the responsibility to ensure that pre-

service programs provide teachers with practical strategies and support to more effectively instruct diverse learners so that they may obtain the skills necessary to become successful adults (Jones, Weber & McLaughlin, 2013). For instance, it is important that educators employ differentiated strategies to meet the varying needs of students in the inclusive classroom (Obiakor, Harris, Mutua, Rotatori & Algozzine, 2012). By providing opportunities for teachers to learn more effective, research-based practices to implement, the academic achievement of all students may improve.

It is also recommended that school leaders examine scheduling and recommendation processes and protocols for placing regular education students into inclusive classrooms (St. John & Babo, 2015). Practices must be implemented that allow educators to appropriately place students in inclusion or non-inclusion classes based upon their needs as well as multiple data points. It is further recommended that once placed in an inclusion setting, the performance of non-disabled students be frequently reviewed and monitored by instructors, administrators and support personnel and adjustments be made when warranted. Instructional leaders must also ensure that all students placed in inclusion or non-inclusion settings receive the same access to qualified teachers, curricula and standards. Finally, school administrators are encouraged to take into consideration teacher interests and strengths when developing teacher schedules. This practice will allow district administrators to transform their districts into more effective, inclusive school communities that are conducive to the success of all students (Bublits, G., 2016).

Developing an inclusive environment that meets the needs of all students requires strong, visionary leaders committed to sharing the ideology of inclusion to all staff (Lindsay, Prolux, Thomson & Scott, 2013); Al-Natour, M., Amr, M., Al-Zboon, E., & Alkhamra, H. , 2015; Shani & Ram, 2015). Likewise, Yeung (2012) states that a strong leader promotes a collaborative school culture, fosters professional partnerships and facilitates the learning of students. Successful collaboration requires schedule time allocated for collaboration and willingness of teachers to share responsibility for what takes place in the classroom (Al-Natour, M., Amr, M., Al-Zboon, E., & Alkhamra, H. 2015). The authors argue that if collaboration is promoted and facilitated by the instructional leader, and appropriate decisions are made by teachers regarding instructional methods, positive student outcomes will be achieved.

In closing, the results of this research suggest that in the climate of high stakes accountability policies requiring that all students receive a minimal level of academic success, it becomes increasingly more important that school administrators remain abreast of practices that lead to the success of all students. They may consider providing relevant and on-going professional development to educators during their pre-service programs and during their professional tenure, strategic scheduling of students and teachers, and creating an atmosphere of collaboration. With the adoption of these critical strategies, school leaders may establish an inclusive environment that will lead to the success of all students.

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