The Effects of School Year Length on Fourth Grade Standardized Test Scores in Year-Round Schools and Traditional Schools

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December 7, 2015

Abstract

This research study was designed to determine if there are academic benefits in attending a school with a year-round calendar compared to a traditional school calendar. This research analysis compared the standardized mathematics and reading test scores in 100 year-round schools and 100 traditional schools and investigated the difference between standardized test scores in mathematics and reading in four different regions in the United States. This study also analyzed the effect of the percentage of students participating in a free and reduced school lunch program and the student to teacher ratio of each school. The methodology behind this analysis was to determine if there was a significant correlation between the effect of those two variables and the students' standardized mathematics and reading test scores. The study found that overall there was no academic benefit in attending either a year-round versus traditional. However, the data analysis showed that there were some advantages in attending a year-round school according to test results from specific regions in the United States, which showed improved students' mathematics standardized test scores.

1 Introduction

The public education system in the United States is constantly evolving. There are a number of new policies and strategies being implemented in school systems around the nation that are focused on increasing standardized test scores. Due to the No Child Left Behind Act of 2001, individual schools in school districts have to meet adequate yearly progress; otherwise there are consequences for successive failures for that particular school. The logic behind implementing the No Child Left Behind Act was to ensure all students are placed in an environment that promotes success. This includes students who belong to a minority, are economically disadvantaged, have special learning needs, and who have limited English proficiency. Thus, in order for schools to meet adequate yearly progress, many of the current educational reforms are focusing on how to improve standardized test scores in schools across the nation.

One potential solution that has been used to solve the problem of diminishing test scores is the implementation of year-round schools as compared to the traditional school calendar system of approximately nine months. Close to four percent of kindergarten through high school students attend a year-round school. Year-round schools claim to have a number of benefits ranging from being academically to economically beneficial. These schools provide students with shorter, but more frequent breaks, which allows more opportunities for remediation in any subject area. A year-round school calendar curriculum decreases the amount of learning loss a student may experience during the three-month summer break. Essentially, once school starts

again after summer break the classroom teacher will not have to focus a number of days each fall reviewing prior material. A year-round school strategy allows for more time to be spent on the instructional materials that will prepare students for standardized testing and the rest of their educational curriculum objectives.

Year-round schools can be found in almost all fifty states, however some states utilize this system more frequently than others. A number of year-round schools are found in the southern and western regions of the United States. One financial benefit associated with the year-round school system is the school can save money by forming a multi-tracking system. A multi-tracking system allows the school to have students on different breaks throughout the year so that when one part of the school's students are on break the other part of the school's students will be attending classes. Hence, this system allows two separate groups of students to utilize the facility at one time. This method is very popular in areas where over crowding is a definitive problem. Yet there is some debate on whether a year-round school system is in fact more effective than a traditional school calendar system. Some research suggests that year-round schools better meet the needs of students who fall into one of the four subgroups of the No Child Left Behind Act as previously mentioned.

This study investigated how fourth grade mathematics and reading standardized test scores are effected by a year-round school educational system versus a traditional school calendar system. The schools studied were either traditional calendar schools or schools that followed the year-round calendar system. Additionally, this study investigated the impact students, who participate in the free and reduced school lunch program, had on fourth grade standardized mathematics and reading test scores. Furthermore, the student to teacher ratio impact on fourth grade standardized mathematics and reading test scores in the schools was also analyzed.

2 Definitions and Development

In order to determine if year-round schools or traditional schools have a greater impact upon standardized test scores a sample of matched schools' data from 12 states was collected to perform a statistical analysis. One hundred year-round schools and one hundred comparable traditional schools from the same states were used in this study. The schools were located in twelve different states: Arkansas, California, Colorado, Illinois, Michigan, Minnesota, Nevada, New Mexico, North Carolina, Utah, Texas, and Wisconsin. The study also divided up the twelve states into four distinct regions. The West region was composed of California, Colorado, Utah, and Nevada. The Southwest region contained New Mexico, Arkansas, and Texas. Also, later in this research study the implications of placing Arkansas into the Southwest region instead of the Southeast region will be discussed. The Midwest region was composed of Illinois, Wisconsin, Michigan, and Minnesota. Lastly, the final region the Southeast only contained North Carolina. In order to keep the samples between both types of educational systems comparable, the number of traditional schools from one state is equivalent to the exact number of year-round schools from that same state and all of the schools have relatively comparable student populations. Each school chosen for this study has a comparable year-round calendar school. For instance, all of the traditional and year-round schools chosen from each state were all from similar towns or counties. This means the demographics of the traditional schools correlate to the demographics of the year-round schools. Schools chosen for this study had a diverse range of variables. Other variables collected were differing numbers of students who attended the school, minority levels, and average income for that particular area. However, the investigator wanted to keep all of the data comparable so each traditional school has a year-

round school located in a similar area with a similar student population, diversity level, and average family income.

Furthermore, the following information was collected for each school in this study:

- The total number of students who attended the school
- The percentage of students in fourth grade who met or exceeded the standards in mathematics for the school
- The percentage of students in fourth grade who met or exceeded the standards in reading for the school
- The percentage of Caucasian students
- The percentage of minority students
- The student to teacher ratio
- The average income of the town where the school is located
- The state where the school is located
- The percentage of students participating in the free and reduced school lunch program
- The standardized test the students had to complete.

Below are a number of key definitions necessary for the reader to understand the terminology in this study.

Definition 1 A **year-round school** is a school that follows a calendar system of either the 45-15, 60-90, or 90-30 plan. The first number represents the number of consecutive days the students will attend school, while the second number represents the length of the students' break.

Example 2 A year-round school that follows the 45-15 plan will have students attend class for 45 days and then allows the students a fifteen-day break.

Definition 3 A **traditional school** is a school that has less frequent breaks, but larger holiday and summer breaks. Traditional schools typically have a 10-12 week summer recession.

Definition 4 A **Free and Reduced School Lunch Program** is a federal program available to families depending on the size of the family and the average annual income of the parent(s). This program allows students to eat lunch at school for a reduced cost or for free, once again dependent on the situation of the family.

Definition 5 A **student to teacher ratio** is the total number of students divided by the total number of teachers in the individual school.

The researcher conducted a statistical analysis of the data collected by using a variety of testing procedures, which determined whether he was able to accept or reject the null hypotheses. The following are necessary statistical definitions pertinent to understanding this research study.

Definition 6 A **null hypothesis** is a statistical hypothesis that is tested for possible rejection under the assumption that the hypothesis is true.

Definition 7 A **research hypothesis** is a statistical hypothesis that is trying to prove at a given level of significance that the null hypothesis is incorrect.

The following section lists the null and research hypotheses to determine what the study data analysis will support.

Sets of Hypotheses:

Null Hypothesis 1 Attending traditional calendar schools will result in higher or equal mathematics standardized test scores when compared to schools with a year-round calendar.

Research Hypothesis 1 Attending traditional calendar schools will result in lower mathematics standardized test scores when compared to schools with a year-round calendar.

Null Hypothesis 2 Attending traditional calendar schools will result in higher reading or equal standardized test scores when compared to schools with a year-round calendar.

Research Hypothesis 2 Attending traditional calendar schools will result in lower reading standardized test scores when compared to schools with a year-round calendar.

Null Hypothesis 3 Students in traditional calendar schools where there are a higher percentage of students who participate in the free and reduced school lunch program will have higher or equal mathematics standardized test scores than similar students in year-round schools.

Research Hypothesis 3 Students in traditional calendar schools where there are a higher percentage of students who participate in the free and reduced school lunch program will have lower mathematics standardized test scores than similar students in year-round schools.

Null Hypothesis 4 Students in traditional calendar schools where there are a higher percentage of students who participate in the free and reduced school lunch program will have higher or equal reading standardized test scores than similar students in year-round schools.

Research Hypothesis 4 Students in traditional calendar schools where there are a higher percentage of students who participate in the free and reduced school lunch program will have lower reading standardized test scores than similar students in year-round schools.

Null Hypothesis 5 Students in traditional calendar schools with higher student to teacher ratios will have higher or equal mathematics standardized test scores than similar students in year-round schools.

Research Hypothesis 5 Students in traditional calendar schools with higher student to teacher ratios will have lower mathematics standardized test scores than similar students in year-round schools.

Null Hypothesis 6 Students in traditional calendar schools with higher student to teacher ratios will have higher or equal reading standardized test scores than similar students in year-round schools.

Research Hypothesis 6 Students in traditional calendar schools with higher student to teacher ratios will have lower reading standardized test scores than similar students in year-round schools.

Null Hypothesis 7 Attending traditional calendar schools in a particular region will result in higher or equal mathematics standardized test scores when compared to schools with a year-round calendar in the same region.

Research Hypothesis 7 Attending traditional calendar schools in a particular region will result in lower mathematics standardized test scores when compared to schools with a year-round calendar in the same region.

Null Hypothesis 8 Attending traditional calendar schools in a particular region will result in higher or equal reading standardized test scores when compared to schools with a year-round calendar in the same region.

Research Hypothesis 8 Attending traditional calendar schools in a particular region will result in lower reading standardized test scores when compared to schools with a year-round calendar in the same region.

In order to conduct a statistical analysis of the data a number of statistical tests were used to either accept or reject the null hypothesis. The statistical test used to determine whether to accept or reject the first six null hypotheses was a *t*-test assuming equal variances. When using this test it is important to compare the *t*-statistical value to the one-tail critical value. When the *t*-statistical value is greater then the one-tail critical value this represents a significant statistical difference in the data, which allows the researcher to reject the null hypotheses. We also conducted a series of *t*-tests in order to reject or accept the null hypotheses numbered three and four. Two *t*-tests were utilized for both sets of data to discern if there was a significance between standardized mathematics and reading test scores depending upon the percentage of students enrolled in the free and reduced school lunch program. Any school that has more than 49 percent of students who participate in the free and reduced school lunch program was labeled as a school with a high percentage of students enrolled in the program and any school that has less then 49 percent of students was labeled as a school with a low percentage of students enrolled in the program. Using the same methodology, null hypotheses numbers five and six can be accepted or rejected by performing a *t*-test on the standardized mathematics and reading test scores of schools with a high and low student to teacher ratio. A school with a ratio of 15.5 or greater was considered a school with a high student to teacher ratio and any school with a ratio of lower than 15.5 was considered a school with a low student to teacher ratio. Only a small sample of schools was used to conduct the *t*-tests for the percentage of students participating in the free and reduced school lunch program and the student to teacher ratio. Only a small sample of schools was used in order to compute the results with the least amount of error possible. The schools chosen had very similar demographics including the total number of students attending the school, the diversity factor, the percentage of students enrolled in the free and reduced school lunch program, and the student to teacher ratio.

In addition, an ANOVA test was used to compare the data between specific regions in order to reject or accept the last two null hypotheses. The study compared the mathematics and reading standardized test scores of year-round calendar schools and traditional calendar schools in four separate regions: the West, the Southwest, the Midwest, and the Southeast.

3 Results

This section reports the results from conducting the statistical analysis tests. Appendix A contains all of the information collected for the two hundred schools. Table 1.1 below shows whether according to the results of the data analysis, the investigator could accept or reject each of the null hypotheses.

The Acceptance or Rejection of the Null Hypotheses in the Research Study		
	Accept	Reject
Null Hypothesis # 1	X	
Null Hypothesis # 2	X	
Null Hypothesis # 3	X	
Null Hypothesis # 4	X	
Null Hypothesis # 5	X	
Null Hypothesis # 6	X	
Null Hypothesis # 7		X
Null Hypothesis # 8	X	
Table 1.1 Shows whether the null hypotheses in the research study were either accepted or rejected.		

Table 1.1 listed above indicates that there is no significant correlation between a student's standardized mathematics and reading test scores in year-round calendar schools compared to schools with a traditional calendar. In addition, this research study determined if having a certain percentage of students participating in the free and reduced school lunch program or having a high or low student to teacher ratio could impact standardized test scores between the two types of educational systems. As can be seen in Table 1.1 above, attending a year-round school having a high or low percentage of students in the free and reduced school program or having a high or low student to teacher ratio does not lead to educational benefits in a year round calendar school over a traditional school system. The results for all of the individual *t*-tests are found in Appendix B.

The ANOVA test results are found in Appendix C. The ANOVA test assessed the relationship between the different regions and the effect of the schools in that particular region. Reading standardized test scores prove that there is no difference between the regions and the effect of attending a year-round school as compared to a traditional school. However, the ANOVA test conducted between the different regions comparing the mathematics scores of the schools showed that attending a year-round school led to significantly higher mathematics scores. Appendix D contains the tables containing the names of the schools chosen to conduct the *t*-tests to determine whether there is a significant difference between mathematics and reading standardized test scores in a year-round calendar school compared to a traditional calendar school.

4 Conclusion and Directions for Further Research

There have been many debates arguing that a year-round education is the solution to increasing test scores and forming an educational curriculum that will allow students to succeed. A year-round education program offers shorter, but more frequent breaks as compared to a traditional school calendar that offers a three-month summer long leave from school. A year-round school calendar is supposed to offer remediation to struggling students during the short breaks and will possibly halt learning loss from occurring. Without learning loss, teachers will be able to start teaching new material immediately when school starts instead of having to provide a short review of the main concepts that were covered in the prior year.

According to the analysis of the data provided in this research study both educational calendars in the schools produced the same results. There was no significant relationship between achieving higher test scores by attending a year-round school when compared to a traditional school. However, when the schools are broken up into regions the results varied. The ANOVA test proves that for reading standardized test scores in the separate regions there is no benefit at a .05 significance level in attending a year-round school. However, the data shows a p-value of .14, which is trending toward significance. Hence, the data shows slight significant values, but does not have a large enough significance worth noting. Nevertheless, when the results of the varying regions on the ANOVA test for the region's mathematics standardized test scores were analyzed the results produced show a significant difference on the mathematics standardized test scores.

The ANOVA test found that attending a year-round school can positively impact a student's mathematics standardized test scores between regions. This means there can be an educational advantage to attending a year-round school to boost students' mathematics standardized test scores. One plausible explanation of the data could be the type of standardized test used. Each state has a unique standardized test that every student is required to take. For instance, North Carolina has the students take the End of Grade (EOG), while Illinois requires the Illinois State Achievement Test (ISAT). Most of the standardized tests are similar, but for instance one region in the United States could have a testing curriculum focused on mathematics and less on reading, thus a discrepancy can occur if a different region places more emphasis on reading than on mathematics. Henceforth, depending on a particular region, students attending a year-round school as compared to a traditional school to improve their mathematics standardized test scores can be pivotal.

Besides this one occurrence most of the data analysis found that both school calendars output similar results when viewing the information as a whole for both mathematics and reading standardized test scores. The researcher would like to note that Arkansas was grouped with the Southwestern states, even though this particular state might more often be grouped with the Southeastern section of the United States. Hence, one area for future research that could produce a new set of results could be to conduct a number of statistical tests analyzing the separate regions and fourth grade mathematics and reading standardized test scores with Arkansas included in the Southeastern region as opposed to the Southwestern region.

This study also analyzed the effects on the standardized mathematics and reading test scores of schools with a high or a low percentage of students participating in a free and reduced school lunch program. In general, the higher the percentage of students enrolled in this program means the higher number of students who are considered economically disadvantaged. There were a number of articles discussing the importance of having these students attend a year-round school to keep the students learning for the whole year and providing remedial sessions

during breaks to further assist these students. Another added benefit of a year-round school calendar is the students are able to eat school lunches more often throughout the school year as compared to having a long three-month summer break without any planned lunchtime. Yet, according to this research analysis there was no additional benefit for these students in attending a certain type of school calendar system. Both calendar systems in this study produced the same results for both mathematics and reading. Additionally, one area frequently discussed when referencing ways to improve standardized test scores is the effect of the classroom size and the student enrollment. Most articles or discussions are set on the fact that a lower student to teacher ratio can increase mathematics and reading test scores. However, when the investigator analyzed the data the results from this data analysis found there is no benefit in having a small or a higher student to teacher ratio in either type of school calendar system that can impact students' mathematics or reading test scores. Thus this implies that classroom enrollment size is not a significant factor in year-round or traditional schools and hence more in-depth ideas should be considered to determine ways to increase standardized test scores in these academic areas. School districts need to begin analyzing their mathematics and reading curriculums. If both year-round and traditional schools from the general population produce similar results, then the education systems should start analyzing why students in both types of schools are not making achievement gains.

Thus when schools are deciding whether they want to keep a traditional school calendar or switch to a year-round calendar they do not have to consider the educational advantages of either school type for fourth grade mathematics and reading achievements. The main benefits of switching to a year-round school are financially based. A year-round school allows the school district to house more students in one facility as compared to having to constantly increase the size of the school classroom enrollment or even build a whole new additional school facility to educate the increasing number of students in their district.

While this statistical data analysis provided a wealth of information regarding the mathematics and reading standardized test scores depending on the type of school calendar, the percentage of students participating in the free and reduced school lunch program, and the student to teacher ratio, there are still a number of different directions that can be taken to build upon this research study. For instance, there is discussion describing how standardized test scores of students contained in the four subcategories of the No Child Left Behind Act of 2001 will benefit greatly from a year-round education. One could potentially use the two hundred schools studied and determine the number of students who fall into the four distinct categories: limited English proficient, students who belong to a minority, students with learning difficulties, and students who are economically disadvantaged to conduct further analysis. While this research study did briefly look at the standardized test scores of students considered economically disadvantaged, another study trying to determining if a year-round education has a stronger impact on students where English is not considered their first language or students who have unique learning needs could be very useful. This further research is critical in determining if there is a positive relationship between certain demographic factors and the achievement of students on their standardized mathematics and or reading scores. This information would allow schools to develop curriculums that meet the needs of all students and determine how to develop better educational methods to increase students standardized test scores.

Another interesting question that arose form this research study is the need to determine why year-round schools in certain regions can produce an increase in students' standardized mathematics test scores. This research could lead the education system to design a standardized test applicable to all of the states or construct a way to monitor the progress of a variety of students' test scores regardless of the standardized test they have to take.

References

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Appendix A:

Year Round Schools	Caucasian %	Minority %	Avg. Income	Met or Exceeded Reading Standards (%)	Met or Exceeded Math Standards (%)	Total # of Students	Student to Teacher Ratio	State of School	Standardized Test Taken	Free and Reduced Lunch (%)
Absell Elementary School	40	60	$25,398.00	77	66	443	14.7	AR	ACTAAP	81.3
East Side Elementary School	37	63	$19,761.00	94	91	581	15.9	AR	ACTAAP	72.6
Elm Tree Elementary School	71	29	$31,667.00	99	95	610	16.3	AR	ACTAAP	14.8
R.E. Baker Elementary School	88	12	$31,667.00	94	89	561	16	AR	ACTAAP	13
Horizon Elementary School	76	24	$21,773.00	93.2	89.2	376	18.8	MI	MEAP	16.2
Sycamore Elementary School	65	35	$21,773.00	79.3	39	337	15.3	MI	MEAP	60.2
Carpenter Elementary School	82	18	$36,138.00	93.8	72.3	440	19.8	MI	MEAP	15.2
Holden Elementary School	83	17	$26,524.00	58.7	20.6	313	15.1	MI	MEAP	86.6
Siersma Elementary	58	42	$26,52	63	21.8	454	14.9	MI	MEAP	71.1

School			4.00							
Frostick Elementary School	89	11	$18,624.00	80	57.1	510	17.8	MI	MEAP	61.8
Morrisville Elementary School	55	45	$38,856.00	92.3	86.7	838	16.8	NC	EOG	6.2
Wilburn Elementary School	15	85	$25,113.00	43	48	749	13.6	NC	EOG	67.8
Skyline Vista Elementary School	12	88	$33,251.00	45.3	57.4	373	15.3	CO	TCAP	93.6
Indian Ridge Elementary School	64	36	$21,095.00	78.7	92.1	566	19	CO	TCAP	7.8
Red Hawk Ridge Elementary School	50	50	$40,366.00	68.4	74.7	769	16.6	CO	TCAP	31.9
Village East Community Elementary School	22	78	$21,095.00	47.5	50	843	14.3	CO	TCAP	64.2
Eastridge Community Elementary School	27	73	$21,095.00	45.5	53.7	885	16.3	CO	TCAP	65.9
Pear Park Elementary School	67	33	$26,792.00	66.7	69.6	492	18.6	CO	TCAP	60.6
Weldon Valley Elementary	82	18	$20,780.00	56.3	43.8	125	14.2	CO	TCAP	32.8

School										
Goodnight Elementary School	39	61	$33,784.00	67.2	65.7	711	18.6	CO	TCAP	60.6
Lincoln Mesa Orchard Elementary School	72	28	$26,792.00	76.8	75	375	22	CO	TCAP	51.5
Willow Springs Elementary School	72	28	$25,601.00	72.3	81.9	930	16	NC	EOG	30.3
Oak Gove Elementary School	73	27	$25,377.00	81.2	76.7	783	16	NC	EOG	14.4
Hillsborough Elementary School	79	21	$23,897.00	74	78.1	450	14	NC	EOG	16.2
Pearsontown Elementary School	28	72	$29,347.00	69.9	70.7	830	17.7	NC	EOG	30.7
Banks Road Elementary School	70	30	$31,145.00	69.2	70.1	704	13.5	NC	EOG	30.7
Olive Chapel Elementary School	81	19	$35,771.00	83.1	81.1	1014	17.4	NC	EOG	6.1
Herbert Akins Elementary School	67	33	$26,969.00	74	73.3	925	16.6	NC	EOG	24.4
Jones Dairy Elementary School	78	22	$33,209.00	83.1	83.1	870	16.6	NC	EOG	13.3

North Forest Pines Drive Elementary School	70	30	$31,145.00	70.9	70.2	799	15.7	NC	EOG	23.3
North Graham Elementary School	22	78	$18,276.00	37	31.5	372	12.4	NC	EOG	93.3
Graham Elementary School	30	70	$28,436.00	24.4	56.1	469	16.7	IL	ISAT	95.5
Partnership Elementary School	48	52	$31,145.00	64.7	47.1	308	12.8	NC	EOG	28.2
Green Elementary School	24	76	$31,145.00	51.3	50	566	12.7	NC	EOG	59
Harris Creek Elementary School	45	55	$31,145.00	65.1	59.6	1012	14.6	NC	EOG	33.1
Adams Elementary School	53	47	$41,554.00	67.9	73.5	780	13.5	NC	EOG	38.1
Sycamore Creek Elementary School	82	18	$31,145.00	89	89.5	1133	16.4	NC	EOG	3.5
River Bend Elementary School	18	82	$31,145.00	49.3	51	855	14.1	NC	EOG	64.9
Durant Road Elementary School	55	45	$31,145.00	72.4	67.3	968	14.8	NC	EOG	36.3
Barwell Renaissance	7	93	$31,14	44.1	32.8	821	14.5	NC	EOG	74.3

Elementary School			5.00							
Brier Creek Elementary School	47	53	$31,145.00	70.1	67.1	855	15.8	NC	EOG	20.7
Denkmann Elementary School	65	35	$25,071.00	41.7	48.8	447	21.7	IL	ISAT	49.3
Earl H. Hanson Elementary School	31	69	$25,071.00	33.3	41.9	405	14.2	IL	ISAT	67.4
Eugene Field Elementary School	73	27	$44,140.00	87.8	75.9	656	14.4	IL	ISAT	7
Frances Willard Elementary School	10	90	$25,071.00	29.8	26.5	316	15.8	IL	ISAT	91.1
Longfellow Elementary School	30	70	$25,071.00	42.1	46.1	352	18.6	IL	ISAT	75.9
Ridgewood Elementary School	58	42	$25,071.00	37.8	35.7	331	18.7	IL	ISAT	50.5
Riverton Elementary School	95	5	$22,166.00	53.1	56.1	502	13.9	IL	ISAT	56.8
Southern View Elementary School	47	53	$28,865.00	53.3	69	228	14.2	IL	ISAT	75.4
Haskell Academy	9	91	$21,579.00	21.9	30.3	296	13.3	IL	ISAT	98.6

Eagle Ridge Elementary School	54	46	$23,806.00	15.8	34.2	305	14.2	IL	ISAT	92.1
Kenwood Elementary School	39	61	$25,713.00	25.9	47.2	358	12.3	IL	ISAT	76
Landmark Elementary School	95	5	$32,341.00	86.7	73.3	254	21.1	IL	ISAT	16.9
Vernon L Barkstall Elementary School	39	61	$25,713.00	68.2	87.9	481	15.3	IL	ISAT	48.9
Iroquois Community Elementary School	57	43	$29,666.00	62.9	64.8	475	16.9	IL	ISAT	30.9
Congress Public Elementary School	4	96	$23,740.00	5	17	867	16.3	WI	WKCE	85.9
Janes Elementary School	19	81	$26,321.00	4	13	382	13.7	WI	WKCE	95.5
Lead Mine Elementary School	52	48	$31,145.00	57.6	60.6	558	15.2	NC	EOG	36.7
Wakefield Elementary School	52	48	$31,145.00	62.8	58.1	678	15	NC	EOG	33.5
Walnut Creek Elementary School	1	99	$31,145.00	50.4	29.9	737	12.5	NC	EOG	73.8
Easley Elementary	60	40	$29,34	69.1	54.3	577	16.4	NC	EOG	26.7

School			7.00							
Laurel Park Elementary School	68	32	$35,771.00	83.9	79.9	974	16.1	NC	EOG	13
Vance Elementary School	54	46	$31,145.00	651.5	50	459	13.6	NC	EOG	42.5
Heritage Elementary School	79	21	$33,209.00	87	87.7	886	16.2	NC	EOG	13.3
Middle Creek Elementary School	74	26	$35,771.00	71.8	75.2	878	16.2	NC	EOG	18.3
Tramway Elementary School	60	40	$20,572.00	73.9	56.8	694	19	NC	EOG	43.4
Turner Creek Elementary School	61	39	$43,337.00	77.9	77.1	784	15.7	NC	EOG	13
Prospect Elementary School	85	15	$19,490.00	60	49.4	476	17.6	NC	EOG	46.6
Salem Elementary School	60	40	$35,771.00	72.3	73.7	849	15	NC	EOG	24.7
Eastlawn Elementary School	11	89	$36,403.00	26.1	18.8	489	11.2	NC	EOG	99.4
Sunset Park Elementary School	21	79	$30,165.00	36.1	37.5	458	13.5	NC	EOG	90.4
Shiloh Elementary School	68	32	$19,490.00	72.4	83.7	589	15.7	NC	EOG	43.1

Hodge Road Elementary School	8	92	$29,926.00	39.2	28.6	631	12.6	NC	EOG	79.4
Wrightsville Beach Elementary School	89	11	$46,964.00	95	95	346	16.1	NC	EOG	11
Harambee Elementary School	27	73	$29,728.00	57.5	74	427	13.9	MN	MCA-III	65.1
Gonzales Elementary School	23	77	$32,138.00	45.9	19.4	510	14.2	NM	SBA	59
Duranes Elementary School	5	95	$26,163.00	23.1	20.5	307	14.4	NM	SBA	98.7
John C. Bass Elementary School	37	63	$24,457.00	69.1	74.8	859	19	NV	CRT	45.9
Harriet Treem Elementary School	36	64	$32,652.00	64.2	62.9	797	17.9	NV	CRT	59.3
John Vanderburg Elementary School	64	36	$32,652.00	94.1	96.1	878	21.6	NV	CRT	10.3
Westfield Village Elementary School	16	84	$23,657.00	27	5	445	21.1	CA	Smarter Balance Assessment	96.2
Two Rivers Elementary School	29	71	$26,736.00	47	32	583	25.9	CA	Smarter Balance Assessment	39.8

Prairie Elementary School	2	98	$26,736.00	20	32	1062	22.1	CA	Smarter Balance Assessment	73.6
Union Avenue Elementary School	0	100	$27,479.00	16	23	1058	23.5	CA	Smarter Balance Assessment	86.5
Round Meadow Elementary School	75	25	$66,103.00	72	66	559	24.3	CA	Smarter Balance Assessment	4.1
Stevenson Elementary School	4	96	$25,993.00	42	21	794	29.9	CA	Smarter Balance Assessment	94.1
Eastlake Elementary School	84	16	$30,497.00	48.8	61.5	1345	25.5	UT	SAGE	12.6
Sneed Elementary School	5	95	$29,212.00	47	71	1190	15.4	TX	STARR	87.2
Brill Elementary School	40	60	$26,095.00	87	92	738	14.8	TX	STARR	34.3
Yeager Elementary School	27	73	$29,212.00	81	85	1046	17.9	TX	STARR	49.8
Bonham Elementary School	45	55	$21,032.00	63	56	568	16.7	TX	STARR	67.4
Fiest Elementary School	32	68	$29,212.00	77	71	1129	17.7	TX	STARR	48.8

River Oaks Elementary School	11	89	$31,791.00	51	55	522	11.7	TX	STARR	79.9
Valley Crossing Elementary School	72	28	$41,537.00	76.1	88.5	707	18.6	MN	MCA-III	8.6
Byron Elementary School	92	8	$31,309.00	67.4	76.2	804	18.1	MN	MCA-III	13.6
Jordan Elementary School	83	17	$28,309.00	65.8	76.7	694	14.8	MN	MCA-III	29.5
Earle Brown Elementary School	15	85	$21,266.00	35.8	39	1054	15.9	MN	MCA-III	81.7
Meadowview Elementary School	85	15	$30,538.00	76.6	90.9	638	13.5	MN	MCA-III	11
Five Hawks Elementary School	88	12	$40,132.00	70.7	84.8	522	17.4	MN	MCA-III	20.1
Golden Lake Elementary School	67	33	$32,183.00	54.8	71	391	16.1	MN	MCA-III	45.3
				Traditional Schools						
Knapp Elementary School	25	75	$26,321.00	7	12	419	12	WI	WKCE	93.6
Leopold Elementary School	23	77	$31,801.00	17	35	713	10.7	WI	WKCE	73.8

Robert E. Lee Elementary School	23	77	$20,013.00	87	76	512	16.7	AR	ACTAAP	89.8
Bryant Elementary School	72	28	$26,443.00	89	81	713	19.8	AR	ACTAAP	53.3
Forest Park Elementary School	79	21	$29,382.00	97	93	447	18	AR	ACTAAP	18.3
Washington Elementary School	60	40	$23,251.00	83	71	361	15.8	AR	ACTAAP	60.4
Woodland Elementary School	73	27	$29,256.00	78.3	60	364	11.7	MI	MEAP	32.7
Blue Star Elementary School	89	11	$20,397.00	79.3	69.2	308	19.8	MI	MEAP	32.5
Brimley Elementary School	44	56	$21,461.00	82.9	56.1	266	13.6	MI	MEAP	59.4
Edison Elementary School	0	100	$14,721.00	53.6	14.3	281	15.6	MI	MEAP	90
Pembroke Elementary School	84	16	$37,794.00	90.2	54.6	324	13.1	MI	MEAP	11.4
Beach Elementary School	86	14	$20,621.00	78.4	45.1	335	13.9	MI	MEAP	57.6
Baxter Elementary School	93	7	$34,160.00	78.7	88.3	508	17.6	MN	MCA-III	28.5

Deephaven Elementary School	86	14	$60,029.00	86.8	86.5	659	15.8	MN	MCA-III	10.9
Oxbow Elementary School	75	25	$35,555.00	63.3	84.8	1164	17.2	MN	MCA-III	24.9
Jackson Elementary School	56	44	$31,344.00	69.1	75.8	804	16.8	MN	MCA-III	35
L. H Tanglen	45	55	$48,592.00	46.2	64.2	460	17.4	MN	MCA-III	45.4
Cherokee Heights Elementary School	12	88	$26,566.00	21.9	36.6	339	10.6	MN	MCA-III	94.1
Madison Elementary School	88	12	$21,663.00	66.6	70.6	178	12.2	MN	MCA-III	32.6
Cedar Park Elementary School	44	56	$37,443.00	61.1	81.7	706	14.8	MN	MCA-III	51.1
Ridge Circle Elementary School	26	74	$29,621.00	48.3	46.7	514	17.1	IL	ISAT	70.2
Ravenswood Elementary School	39	61	$28,548.00	62.7	76.7	500	16.3	IL	ISAT	50.4
Walker Elementary School	30	70	$40,248.00	66.6	82.6	346	12.6	IL	ISAT	47.7
Madison Elementary School	43	57	$33,954.00	67.4	77.4	460	14.3	IL	ISAT	52.2

Cotton Creek Elementary School	71	29	$27,600.00	67.7	57.2	706	16.6	IL	ISAT	23.9
Harrison Street Elementary School	74	26	$45,501.00	68.5	59.7	430	15.8	IL	ISAT	14.7
Spring Grove Elementary School	90	10	$37,930.00	67.1	61.2	333	13.3	IL	ISAT	21.3
Antioch Elementary School	73	27	$31,976.00	62.8	66.9	384	15.3	IL	ISAT	32.8
Leal Elementary School	48	52	$19,642.00	58.4	64.1	415	13.6	IL	ISAT	56.1
Lena Elementary School	95	5	$24,037.00	80	83.3	412	14.8	IL	ISAT	37.4
Heyworth Elementary School	93	7	$29,437.00	67.2	65.7	549	16.1	IL	ISAT	28.1
Nelson Ridge Elementary School	85	15	$25,161.00	62.2	73.2	479	21.7	IL	ISAT	14.2
Conklin Elementary School	32	68	$27,052.00	31.6	38.4	410	14.6	IL	ISAT	88.8
William Harris Elementary School	39	61	$22,418.00	26.9	26.9	293	23.4	IL	ISAT	91.1
Henry W. Longfellow	70	30	$43,980.00	73.5	89.2	473	17.5	IL	ISAT	20.7

South Summit Elementary School	83	17	$19,217.00	46.3	55	619	20.7	UT	SAGE	27.6
Acoma Elementary School	28	72	$26,163.00	58.6	72.4	162	14.4	NM	SBA	67.3
Rio Rancho Elementary School	38	62	$27,079.00	63.7	53.2	636	13.7	NM	SBA	59
Zavala Elementary School	2	98	$32,297.00	76	91	340	12	TX	STAAR	96.5
West Texas Elementary School	72	28	$23,424.00	95	78	301	11.5	TX	STAAR	49.2
Kolter Elementary School	41	59	$27,989.00	86	89	614	17	TX	STAAR	25.1
Carrillo Elementary School	1	99	$27,989.00	71	73	608	16.4	TX	STAAR	90.5
Houston Elementary School	2	98	$27,989.00	67	56	789	14.4	TX	STAAR	96.5
Polk Elementary School	21	79	$19,687.00	96	92	618	17	TX	STAAR	34.1
Sanchez Elementary School	2	98	$51,686.00	21	13	243	16.2	CA	Smarter Balance Assessment	91.4
Grattan Elementary School	56	44	$51,686.00	75	59	390	20.7	CA	Smarter Balance Assessm	21

									ent	
Simonds Elementary School	47	53	$34,977.00	80	67	721	27.8	CA	Smarter Balance Assessment	3.2
Ruskin Elementary School	2	98	$34,977.00	73	67	663	25.5	CA	Smarter Balance Assessment	20.5
Newcastle Elementary School	80	20	$35,256.00	50	55	156	16.5	CA	Smarter Balance Assessment	34.6
Rockdale Elementary School	12	88	$27,778.00	40	49	227	22.1	CA	Smarter Balance Assessment	66.4
Thomas O'Roarke Elementary School	60	40	$24,457.00	88.1	89.5	785	18.9	NV	CRT	20.1
John F. Mendoza Elementary School	11	89	$24,457.00	70.3	73	806	19.1	NV	CRT	75.6
Rita Cannan Elementary School	14	86	$27,027.00	40	57.1	781	17.5	NV	CRT	67.5
Wildflower Elementary School	30	70	$29,030.00	84	82.7	489	18.8	CO	TCAP	67.5
Scott Elementary School	65	35	$29,030.00	84.2	88.4	686	18.3	CO	TCAP	35.6

Silverthorne Elementary School	29	71	$34,950.00	56.8	64.9	300	12.9	CO	TCAP	64.3
Edgewater Elementary School	13	87	$24,309.00	55.4	59.5	506	19.3	CO	TCAP	87.7
Meeker Elementary School	81	19	$27,463.00	82.7	82.7	366	19.7	CO	TCAP	26
Burlington Elementary School	48	52	$19,956.00	73.1	67.3	388	17.6	CO	TCAP	48.2
Soda Creek Elementary School	86	14	$31,117.00	94.3	85.4	555	15.1	CO	TCAP	18.9
Basalt Elementary School	44	56	$38,116.00	63.3	73.2	670	14	CO	TCAP	40
Palmer Elementary School	37	63	$33,995.00	47.5	62.5	337	16.8	CO	TCAP	48.4
York Elementary School	42	58	$31,145.00	62.1	51.5	532	13.5	NC	EOG	46.8
Poe Elementary School	22	78	$31,145.00	48.1	44.2	354	12.6	NC	EOG	59
Leesville Elementary School	54	46	$31,145.00	75.5	72.3	964	16.9	NC	EOG	27.7
Baileywick Elementary School	42	58	$31,145.00	53.3	61.3	433	12.5	NC	EOG	48.7
Stough	28	72	$31,14	50	50	614	13.4	NC	EOG	49.2

Elementary School			5.00							
Lynn Road Elementary School	28	72	$31,145.00	55.3	52.6	512	13.3	NC	EOG	54.1
North Ridge Elementary School	51	49	$31,145.00	60.2	57.1	769	15.6	NC	EOG	38.6
Brentwood Elementary School	9	91	$31,145.00	59.4	60.9	428	10.5	NC	EOG	77.1
Elizabeth Cashwell Elementary School	18	82	$23,362.00	44.3	34.9	679	13.8	NC	EOG	84.7
Sherwood Park Elementary School	29	71	$23,362.00	33.3	33.3	417	12	NC	EOG	82.3
Ashley Elementary School	34	66	$23,362.00	55.9	38.2	242	13	NC	EOG	57
Long Hill Elementary School	57	43	$23,362.00	74.8	65	478	16.2	NC	EOG	35.6
Wingate Elementary School	21	79	$17,583.00	58.8	71.8	599	10	NC	EOG	86.8
Porter Ridge Elementary School	64	36	$26,530.00	71.3	73.6	582	15.3	NC	EOG	45.2
Jones Elementary School	67	33	$21,551.00	63.3	60.2	344	14.6	NC	EOG	67.4

Brightwood Elementary School	11	89	$27,202.00	40	16.4	573	13.3	NC	EOG	95.2
William Falkener Senior Elementary School	2	98	$27,202.00	39.4	25.5	588	12.9	NC	EOG	99.5
Morehead Elementary School	40	60	$27,202.00	63.7	72.5	573	16.1	NC	EOG	57.6
Root Elementary School	67	33	$31,145.00	73.8	68.8	515	13.2	NC	EOG	26.6
Conn Elementary School	34	66	$31,145.00	59.1	54.8	605	12.4	NC	EOG	46.9
Fox Road Elementary School	8	92	$31,145.00	32.5	38.8	755	13.3	NC	EOG	77.2
Forestville Road elementary School	24	76	$29,926.00	46.2	62.2	697	13.1	NC	EOG	57.4
Cary Elementary School	52	48	$43,337.00	66.3	76.3	579	14.1	NC	EOG	42.5
Knightdale Elementary School	13	87	$29,926.00	37.2	43	730	13.5	NC	EOG	68.6
Northwoods Elementary School	40	60	$43,337.00	55.1	58.4	541	12.8	NC	EOG	40.1
Millers Creek Elementary	84	16	$16,02	59.7	66.4	809	15.5	NC	EOG	72.2

School			7.00							
Farmington Woods Elementary School	50	50	$43,337.00	74.6	70.5	823	14.4	NC	EOG	25.8
Reedy Creek Elementary School	33	67	$43,337.00	56.6	56.6	703	14.1	NC	EOG	49.4
Vandora Springs Elementary School	35	65	$29,482.00	57.6	57.6	543	13.3	NC	EOG	51.9
Oak Grove Elementary School	7	93	$30,808.00	32.7	42.6	577	13.8	NC	EOG	78.3
Rand Road Elementary School	64	36	$29,482.00	69.1	68.1	543	13.7	NC	EOG	32.2
Bethesda Elementary School	7	93	$30,808.00	38.7	33.6	680	15.2	NC	EOG	79.7
Davidson Elementary School	82	18	$46,849.00	87.8	87.8	725	16.3	NC	EOG	12.4
Coddle Creek Elementary School	80	20	$26,644.00	71.6	64.2	515	15.8	NC	EOG	27.4
Torrence Creek Elementary School	71	29	$37,831.00	70.9	68.4	527	16.9	NC	EOG	18.8
Weldon Elementary School	1	99	$20,468.00	26.9	28.4	399	15.9	NC	EOG	99.2

Fred A. Anderson Elementary School	66	34	$11,391.00	55.6	41.1	259	12.6	NC	EOG	62.9
Loyd E. Auman Elementary School	17	83	$23,362.00	40.7	41.7	537	13.9	NC	EOG	71.5

Appendix B:

Fourth Grade Students' Mathematics Test Scores in Traditional Schools Compared to Year-Round Schools

	Variable 1	*Variable 2*
Mean	59.977	61.514
Variance	518.8785566	361.8923273
Observations	100	100
Pooled Variance	440.3854419	
Hypothesized Mean Difference	0	
df	198	
t Stat	-0.517895804	
P(T<=t) one-tail	0.302554574	
t Critical one-tail	1.652585784	
P(T<=t) two-tail	0.605109148	
t Critical two-tail	1.972017478	

Table 1.2 This table contains the *t*-test results for the standardized test scores of fourth grade students' mathematics scores in traditional schools versus year-round schools.

Fourth Grade Students' Reading Test Scores in Traditional Schools Compared to Year-Round Schools		
	Variable 1	*Variable 2*
Mean	66.689	62.07
Variance	3973.233716	360.4073737
Observations	100	100
Pooled Variance	2166.820545	
Hypothesized Mean Difference	0	
df	198	
t Stat	0.701651555	
P(T<=t) one-tail	0.241860196	
t Critical one-tail	1.652585784	
P(T<=t) two-tail	0.483720391	
t Critical two-tail	1.972017478	

Table 1.3 This table contains the *t*-test results for the standardized test scores of fourth grade students' reading scores in traditional schools versus year-round schools.

Comparison of Year-Round and Traditional Schools with a High Percentage of Students in the Free and Reduced School Lunch Program and the effect on the Students' Mathematics Standardized Test Scores

	Variable 1	*Variable 2*
Mean	48.56666667	42.97777778
Variance	515.4775	251.2994444
Observations	9	9
Pooled Variance	383.3884722	
Hypothesized Mean Difference	0	
df	16	
t Stat	0.605497295	
P(T<=t) one-tail	0.276670611	
t Critical one-tail	1.745883676	
P(T<=t) two-tail	0.553341221	
t Critical two-tail	2.119905299	

Table 2.1 This table contains the *t*-test conducted to determine the significance between a high percentage of students in the free and reduced school lunch program and the students' mathematics achievement between year-round and traditional calendar schools.

Comparison of Year-Round and Traditional Schools with a Low Percentage of Students in the Free and Reduced School Lunch Program and the effect on the Students' Mathematics Standardized Test Scores

	Variable 1	*Variable 2*
Mean	67	72.75555556
Variance	112.21	314.4227778
Observations	9	9
Pooled Variance	213.3163889	
Hypothesized Mean Difference	0	
df	16	
t Stat	-0.835952105	
P(T<=t) one-tail	0.207745984	
t Critical one-tail	1.745883676	
P(T<=t) two-tail	0.415491968	
t Critical two-tail	2.119905299	

Table 2.2 This table contains the *t*-test conducted to determine the significance between a low percentage of students in the free and reduced school lunch program and the students' mathematics achievement between year-round and traditional calendar schools.

Comparison of Year-Round and Traditional Schools with a High Percentage of Students in the Free and Reduced School Lunch Program and the effect on the Students' Reading Standardized Test Scores

	Variable 1	*Variable 2*
Mean	49.25555556	50.35555556
Variance	714.6977778	391.9177778
Observations	9	9
Pooled Variance	553.3077778	
Hypothesized Mean Difference	0	
df	16	
t Stat	-0.099200887	
P(T<=t) one-tail	0.461105516	
t Critical one-tail	1.745883676	
P(T<=t) two-tail	0.922211032	
t Critical two-tail	2.119905299	

Table 2.3 This table contains the *t*-test conducted to determine the significance between a high percentage of students in the free and reduced school lunch program and the students' reading achievement between year-round and traditional calendar schools.

Comparison of Year-Round and Traditional Schools with a Low Percentage of Students in the Free and Reduced School Lunch Program and the effect on the Students' Reading Standardized Test Scores

	Variable 1	*Variable 2*
Mean	71.05555556	74.74444444
Variance	137.4627778	203.9777778
Observations	9	9
Pooled Variance	170.7202778	
Hypothesized Mean Difference	0	
df	16	
t Stat	-0.598906845	
P(T<=t) one-tail	0.278810088	
t Critical one-tail	1.745883676	
P(T<=t) two-tail	0.557620176	
t Critical two-tail	2.119905299	

Table 2.4 This table contains the *t*-test conducted to determine the significance between a low percentage of students in the free and reduced school lunch program and the students' reading achievement between year-round and traditional calendar schools.

Comparison of Year-Round and Traditional Schools with a Low Student to Teacher Ratio and the effect on the Students' Reading Standardized Test Scores

	Variable 1	*Variable 2*
Mean	123.4555556	49.82222222
Variance	39602.31778	392.0444444
Observations	9	9
Pooled Variance	19997.18111	
Hypothesized Mean Difference	0	
df	16	
t Stat	1.104577845	
P(T<=t) one-tail	0.142838646	
t Critical one-tail	1.745883676	
P(T<=t) two-tail	0.285677293	
t Critical two-tail	2.119905299	

Table 3.1 This table contains the *t*-test conducted to determine the significance between a low student to teacher ratio and the students' reading achievement between year-round and traditional calendar schools.

Comparison of Year-Round and Traditional Schools with a High Student to Teacher Ratio and the effect on the Students' Reading Standardized Test Scores

	Variable 1	*Variable 2*
Mean	66.94	68.61
Variance	709.1293333	277.9787778
Observations	10	10
Pooled Variance	493.5540556	
Hypothesized Mean Difference	0	
df	18	
t Stat	-0.168086994	
P(T<=t) one-tail	0.434194522	
t Critical one-tail	1.734063607	
P(T<=t) two-tail	0.868389044	
t Critical two-tail	2.10092204	

Table 3.2 This table contains the *t*-test conducted to determine the significance between a high student to teacher ratio and the students' reading achievement between year-round and traditional calendar schools.

Comparison of Year-Round and Traditional Schools with a Low Student to Teacher Ratio and the effect on the Students' Mathematics Standardized Test Scores

	Variable 1	*Variable 2*
Mean	52.66666667	53.44444444
Variance	439.9775	456.3477778
Observations	9	9
Pooled Variance	448.1626389	
Hypothesized Mean Difference	0	
df	16	
t Stat	-0.07793705	
P(T<=t) one-tail	0.469422239	
t Critical one-tail	1.745883676	
P(T<=t) two-tail	0.938844477	
t Critical two-tail	2.119905299	

Table 3.3 This table contains the *t*-test conducted to determine the significance between a low student to teacher ratio and the students' mathematics achievement between year-round and traditional calendar schools.

Comparison of Year-Round and Traditional Schools with a High Student to Teacher Ratio and the effect on the Students' Mathematics Standardized Test Scores

	Variable 1	*Variable 2*
Mean	67.27	65.44
Variance	437.7356667	287.9804444
Observations	10	10
Pooled Variance	362.8580556	
Hypothesized Mean Difference	0	
df	18	
t Stat	0.214816535	
P(T<=t) one-tail	0.416162682	
t Critical one-tail	1.734063607	
P(T<=t) two-tail	0.832325364	
t Critical two-tail	2.10092204	

Table 3.4 This table contains the *t*-test conducted to determine the significance between a high student to teacher ratio and the students' mathematics achievement between year-round and traditional calendar schools.

Appendix C:

Comparison of Students' Standardized Reading Test Scores between the Four Different Geographical Regions

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	23376.486	7	3339.498	1.5764714	0.1444	2.057530808
Within Groups	406720.73	192	2118.337			
Total	430097.22	199				

Table 4.1 Shows the critical and statistical values conducted for the ANOVA test determining the significance between fourth grade students standardized reading test scores in four distinct regions: the Southeast, the Southwest, the West, and the Midwest.

Comparison of Students' Standardized Mathematics Test Scores between the Four Different Geographical Regions

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	7339.831333	7	1048.5473	2.5173127	0.016	2.0575308
Within Groups	79974.604	192	416.53439			
Total	87314.435	199				

Table 4.2 Shows the critical and statistical values conducted for the ANOVA test determining the significance between fourth grade students standardized mathematics test scores in four distinct regions: the Southeast, the Southwest, the West, and the Midwest.

Appendix D:

Year-Round and Traditional Schools with Comparable Percentages of Students Who Participate in the Free and Reduced School Lunch Program

Year-Round Schools	Traditional Schools
Morehead Elementary School	Wrightsville Beach Elementary School
Washington Elementary School	Oak Gove Elementary School
Rio Rancho Elementary School	Elm Tree Elementary School
Rita Cannan Elementary School	Brier Creek Elementary School
Bethesda Elementary School	North Forest Pines Drive Elementary School
Sherwood Park Elementary School	Easley Elementary School
Robert E. Lee Elementary School	Iroquois Community Elementary School
Knapp Elementary School	Weldon Valley Elementary School
Weldon Elementary School	Vernon L Barkstall Elementary School
Pembroke Elementary School	Green Elementary School
Nelson Ridge Elementary School	Sycamore Elementary School
Harrison Street Elementary School	Goodnight Elementary School
Thomas O'Roarke Elementary School	Wilburn Elementary School
Cotton Creek Elementary School	Hodge Road Elementary School
Root Elementary School	Absell Elementary School
Rand Road Elementary School	Sunset Park Elementary School
Madison Elementary School	North Graham Elementary School
Baileywick Elementary School	Duranes Elementary School

Table 5.1 is a list of the schools used in the sample to determine the significance between high and low percentages of students in the free and reduced school lunch program and the effect on students' standardized mathematics and reading test scores.

Year-Round and Traditional Schools with Comparable Student to Teacher Ratios

Year-Round Schools	Traditional Schools
Turner Creek Elementary School	North Ridge Elementary School
Shiloh Elementary School	Coddle Creek Elementary School
Frances Willard Elementary School	Weldon Elementary School
R.E. Baker Elementary School	Heyworth Elementary School
Jones Dairy Elementary School	Cotton Creek Elementary School
Graham Elementary School	Robert E. Lee Elementary School
Morrisville Elementary School	Jackson Elementary School
Prospect Elementary School	Baxter Elementary School
Carpenter Elementary School	Meeker Elementary School
Denkmann Elementary School	Grattan Elementary School
North Graham Elementary School	Knapp Elementary School
Hodge Road Elementary School	Conn Elementary School
Vance Elementary School	York Elementary School
Harambee Elementary School	Loyd E. Auman Elementary School
River Bend Elementary School	Reedy Creek Elementary School
Earl H. Hanson Elementary School	Madison Elementary School
Absell Elementary School	Conklin Elementary School
Brill Elementary School	Cedar Park Elementary School
Sycamore Elementary School	Antioch Elementary School

Table 5.2 is a list of the schools used in the sample to determine the significance between high and low student to teacher ratios and the effect on students' standardized mathematics and reading test scores.