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Balanced School Calendar and its Effects on Student Achievement in Two Rural Georgia Schools

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THE BALANCED SCHOOL CALENDAR AND ITS EFFECTS ON STUDENT
ACHIEVEMENT IN TWO RURAL GEORGIA SCHOOLS

by

ERNESTINE R. JACKSON

(Under the Direction of Linda M. Arthur)

ABSTRACT

This study analyzed the impact of the balanced calendar on reading, English/language arts, mathematics, social studies, and science achievement. Performance data on third- and fifth-grade students enrolled in a school implementing a balanced calendar for three years were compared with the performance data on third- and fifth-grade students enrolled in a similar school utilizing the traditional calendar. The population in this causal-comparative study was third- and fifth-grade students in these two schools. The over-riding research question was: To what extent does a balanced calendar affect student academic achievement? Independent-samples *t* tests were conducted to determine statistically significant differences in reading achievement, English/language arts achievement, mathematics achievement, social studies achievement, and science achievement. The results indicated no statistically significant findings.

INDEX WORDS: Index term, Academic achievement, Balanced calendar, School schedules, Year round schools

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DEDICATION

This dissertation is dedicated to administrators and teachers everywhere who wish to improve student academic achievement in their schools.

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CHAPTER 1

INTRODUCTION

Year-round education, also referred to as the balanced calendar, reorganizes the school year to provide more continuous learning by spacing the long summer vacation into shorter, more frequent vacations throughout the year. It does not eliminate the summer vacation, but rather reduces and redistributes it as vacation or intersession time during the school year (Johnson, 2000). The balanced calendar is an alternative schedule for learning that minimizes learning loss that occurs during a typical three-month summer vacation (Alcorn, 1992; McMillen, 2001). Students in a year-round or balanced calendar program attend the same classes and receive the same amount of instruction as students on a nine-month calendar (usually 180 days).

Because the effectiveness of the traditional nine-month calendar in facilitating student achievement and motivation has been questioned, revision of the school calendar from the traditional nine-month calendar to a balanced or year-round calendar has been proposed to address issues associated with the goals of increasing student achievement and lowering the dropout rate (Kneese, 1996; Winters, 1995; Worthen & Zsiray, 1994; Winters, 1995). Advocates of the balanced calendar see benefits for students of all abilities, potential for uplifting the profession, and a fiscal advantage to the taxpayer. Opponents question these merits and claim that research is sparse and inclusive. Either way, acceptance and implementation of the balanced calendar seem to be on the rise. Consequently, a closer look at the balanced calendar is warranted.

Background of the Study

A balanced calendar, or year-round, school is one in which the students attend school for 180 days but have extra breaks built in such as intercession, enrichment or remedial teaching. The balanced calendar has been successful where it is offered as an option or on a voluntary basis along with the traditional calendar. According to the National Association for Year-Round Education (2006a), there are more than 3,000 schools nationally utilizing a balanced calendar. During the 2005-2006 school year, there were 96 balanced-calendar schools in Georgia, enrolling 61,157 students (National Association for Year-Round Education, 2006a).

While studies related to the balanced calendar report mixed results, overall they favor the balanced calendar over traditional ones. In addition, the literature demonstrates that balanced calendar participants, their parents, and their teachers perceive their experiences more positively than those in traditional programs. Numerous researchers have found that balanced calendars have positive effects on student achievement (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996; Kneese, 2000; Winters, 1995). Bradford (1995) reported improved scores (between 12 and 20 percentile points) for eleventh-grade students attending four-quarter continuous year-round programs between 1974 and 1986. Brekke (1984) reported higher third-grade test scores in a year-round site than in a site with a traditional calendar. In a review of studies during the 1970s and 1980s, Moreno (1983) found that only three of nine studies with experimental and matched control groups showed significant gains in favor of year-round schools.

Other research shows little or no significant increase in achievement through the use of a balanced calendar compared to the traditional school year calendar. Campbell

(1994) found no significant improvement in achievement scores as measured by the California Test of Basic Skills when this test was administered at the end of two consecutive school terms. According to a review completed by the National Education Association (1997), inconclusive evidence was found linking year-round schools to an increase in student academic achievement. The review also found a general tendency toward acceptance of the program by parents of children in year-round schools.

Naylor's (1995) research revealed that many students demonstrated no difference in learning outcomes in a year-round school, and the Houston Independent School District report also found no difference in test scores between students who attended year-round schools and those who attended traditional-calendar schools. However, the latter finding was contradicted by Shields and Oberg (2000), who reported increased achievement for year-round schools. Further, numerous other studies have found no significant difference in achievement between groups of students following year-round calendars and students following traditional calendars (Carriedo & Goren, 1989; Kreitzer-Glass, 1990; Zykowski, Mitchell, Hough, & Gavin, 1991).

While some researchers (e.g., Kneese, 1994, 2000; Kneese & Knight, 1995; Moore, 2002; Shields & Oberg, 2000) have reported improvement in student achievement due to year-round schooling, others have suggested that one possibility for increased achievement in year-round schools might be that these schools use intercessions to provide enrichment and remediation, which gives the students more exposure to the curriculum, thereby increasing achievement (McMillen, 2001).

The Los Angeles school system currently follows the year-round calendar exclusively. Ballinger (1995) concluded that Los Angeles' year-round schools yielded

test scores that were higher than comparable scores in traditional-calendar schools. He also reported that year-round schools were very beneficial for ESOL students and claimed that year-round schools reduced both summer learning loss and the sense of failure that is an inherent side effect of the traditional-calendar system.

In summation, the general overall consensus, according to several published reviews, has been that the outcomes of year-round education are at least as good as those achieved under the traditional school calendar. Kneese (1996) concluded that achievement in year-round schools appears to be slightly higher than in traditional-calendar schools.

Naylor (1995) concluded in his review that year-round schooling produces educational benefits for students that are reflected in improved test scores. He found that long summer breaks in traditional-calendar schools are harmful, as students forget previous material covered and valuable time is taken up in reviewing curriculum at the start of a new academic year. Further, Naylor asserted that year-round school calendars reduce review time as students have less time to forget material. However, Naylor also concluded that the case for improved educational achievement resulting from the implementation of year-round calendars is not proven and should be treated with skepticism for six reasons: 1) Many of the studies which show increased educational achievement for students in year-round schools are published by the National Association for Year-Round Education (NAYRE); Naylor says the approach of the NAYRE appears to be that if findings are favorable to year-round schools, but statistically insignificant, they are reported to be favorable; 2) there is a substantial number of studies conducted by researchers with no vested interest in either supporting or opposing year-round schooling

which conclude that there appears to be no significant difference in achievement between students attending year-round schools and students attending traditional-calendar schools; 3) one of the methodological problems with many of the studies, whatever their conclusions, is the difficulty of isolating the variable of school calendar in relation to student achievement; 4) of the studies which conclude that students in year-round schools achieve at a higher level than students in traditional-calendar schools, the differences in achievement are rarely significant. A further concern is the narrowness of the measurement comparing year-round with traditional calendars, with test scores used in all cases; 5) year-round schools are predominantly located in disadvantaged communities in many American districts; and 6) there appears to be little examination of alternatives to year-round schools, or even posing of basic questions. Naylor concluded that perhaps the problem needs to be restated within a local context rather than pursuing the analysis of a single answer from a foreign country which has many educational, social, climatic, demographic, and political differences. In addition, according to *Georgians Need Summers* (2005), evidence supporting the efficacy of year-round schools is limited, and shows that the year-round calendar offers no benefit to students either socially or academically.

Statement of the Problem

Public education in the United States has gone through many eras of reform and rebuilding. It is faced with an increase in student populations with diverse abilities and needs, a lack of classrooms and limited resources to solve current problems. Educators are challenged to provide the best opportunity for students to learn and be successful, and are held accountable for student achievement (proficiency on performance assessments

and graduation rates). The revision of the school calendar from the traditional nine-month to a balanced or year-round calendar is a reform idea proposed to meet these needs. Year-round schools were implemented to help reduce student loss of previous learning over the long summer break and to decrease valuable time used to review material at the start of a new academic year. Since the *No Child Left Behind Act of 2001* (NCLB, 2002) requires students to show academic improvement, many leaders have been looking to year-round schools as part of the solution to the problem of bridging the gap to increase academic achievement. It is with this question in mind that the present study was launched, to investigate the extent to which the balanced calendar influences standardized test scores.

Although there have been many studies of the balanced calendar, they are geared more towards the at-risk or disadvantaged child rather than on the whole population. These special needs students are less likely to retain information over the summer month and are also less likely to be challenged academically when not in the academic environment. However, the researcher set out to study the affects of a balanced calendar on all students to cover all domains and subgroups. This study compared CRCT results for all students in all subject areas in third and fifth grade who attended schools following both a balanced calendar and a traditional calendar.

Research Questions

The overarching research question addressed in this study was: To what extent does a balanced calendar affect student academic achievement? Based on the assumption that the balanced calendar does affect student academic achievement, the following hypothesis was studied.

Null Hypotheses

The following null hypotheses were tested in this investigation:

1. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the reading content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced school calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the reading content area of the Georgia CRCT in a similar school utilizing a traditional calendar.
2. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the English/language arts content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the English/language arts content area of the Georgia CRCT in a similar school utilizing a traditional calendar.
3. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the mathematics content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the mathematics content area of the Georgia CRCT in a similar school utilizing a traditional calendar.
4. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the social studies content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of

implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the social studies content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

5. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the science content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the science content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

Significance of the Study

This study will add to the current body of balanced calendar or year-round education research. A study determining the efficacy of a balanced calendar system can be very useful to administrators, teachers and parents because (a) administrators are constantly exploring ways to increase academic achievement; (b) teachers, who are held accountable for their students' achievement or lack of achievement, seek innovative ways to raise test scores; and (c) parents want their children to have the best education possible. This study can also benefit school board members, school superintendents, and state superintendents in that it provides data that can be assessed as decisions are being made to determine if balanced school calendars are in the best interest of the school population. This study can also possibly be used by other states with similar demographics to determine if a balanced calendar would be beneficial.

This study is significant for formulating educational policy because it studies the effects of differing calendars on academic achievement through the use of CRCT test

scores. Calendar makeup has become a hot topic with the State Department of Education, as they are currently trying to align all school calendars in the state. With the onset of Performance Standards and the movement of students between schools, it would be beneficial to have schools working on similar instructional calendars to ease transition difficulties between schools and provide benchmark alignment.

This study is significant for the teaching profession because it allows for the study of traditional calendars versus balanced calendars for all student achievement. As previously stated, teachers and administrators are constantly looking for ideas to improve all student performance and academics. With the new tiers of intervention and level of support for different students, it is important to document any and all helpful strategies for student success. It is also important to document that the new teacher evaluation is based on academic goals and student achievement. Teachers who do not reach their student achievement goals do not receive a satisfactory overall rating on their annual evaluation. Therefore any strategies for raising student achievement are very valuable to the profession and to individual teachers.

This study is significant to the researcher as she was employed in a balanced calendar school for several years, and has had the experience of teaching in both a traditional and a balanced calendar setting. Even though the personal feelings of the researcher are that the balanced school year was very beneficial to faculty, staff, and students, she took care to ensure that this bias did not affect her research and she strove to document the differences found in academic achievement for all students in the traditional versus the balanced school calendar.

Limitations

The researcher examined two schools in rural Georgia and thus the findings may not be applicable to other counties in the state or nation. The two schools may have different curricula, enrichment programs and parental involvement levels. Geographically, Georgia's overall ranking is low; thus, the use of rural schools in this study poses the question of how urban schools with a traditional or balanced calendar would fare. Nationally, Georgia ranked low, so these findings may not be extrapolated to districts and states with higher academic achievement.

The researcher was not able to obtain de-identified individual student performance data due to sensitivity and school districts' policies regarding the use and release of test score data. Thus, school-level data obtained from the Georgia Department of Education's web site were utilized.

Delimitations

The delimitations of the study include limited geographic boundaries in which the study took place. As a result, the data may not be transferable to other school districts.

Procedures

The researcher used a quantitative comparable analysis design for the study. This type of research design was selected because the researcher will examine the standardized test scores of third- and fifth-grade students in Georgia who attended a charter school for two years or more and the researcher will also examine the standardized test scores of third- and fifth-grade students in Georgia who attended a traditional-calendar school.

Population

The online web site of the Georgia Report Card provided the researcher with Annual Report Cards of each of the two middle Georgia school districts. Additional

information was obtained by the researcher from the principals of each school that was examined.

The rural Georgia charter school has been on a balanced calendar since 2002, and the school's enrollment has been consistent for the past three years. The enrollment ranges between 103-111 students in pre-kindergarten through Grade 12. All students (100%) were eligible for free or reduced-price meals. During the 2006-2007 school year, the racial composition of the student body was 78.09% Black, 13.94% White, 7.57% Multiracial, and 0.40% Asian. Forty-three percent of the school population was female; 56.57% of the school population was male. The school is not a Title I school; there are no students in an ESOL (English for Speakers of Other Languages) program. The school met AYP (adequate yearly progress) requirements during the 2005-2006 school year.

During the 2006-2007 school year, the school employed 26 full-time and 3 part-time PK-12 teachers. Fifty-five percent of teachers have earned bachelor's degrees; 34% of teachers have earned master's degrees. Seven percent of teachers hold specialist degrees, and 3% hold one- and two-year vocational certificates. The teaching staff was composed of 10 males and 19 females. The average length of service for teachers was 12.24 years. Forty-eight percent of the student population was female; 52% of the student population was male.

The second middle Georgia rural school selected by the researcher has always been a traditional-calendar school. The school is a school-wide Title I school. Student enrollment for the past three years has been stable, with about 450 students. The school houses grades PK through 5. Ninety-five percent of students are eligible for free or reduced-price meals. During the 2006-2007 school year, the racial composition of the

school was 56.95% Black, 37.44% Hispanic, 3.27% White, 2.18% Multiracial, and 0.27% Asian. Thirteen percent of students participated in the ESOL (English for Speakers of Other Languages) program. The school did not meet AYP requirements and was in Needs Improvement status.

During the 2006-2007 school year, the school employed 41 full-time and 6 part-time teachers. Thirty-four percent of teachers held only the bachelor's degree; 55% held master's degrees. Nine percent of teachers held specialist degrees; 2% of teachers held doctorate degrees. The teaching staff was composed of 4 males and 43 females. The average length of service for teachers was 9.70 years.

Definitions

Balanced School Calendar

The term refers to a variation of the year-round calendar which organizes the school schedule by reducing the summer vacation and redistributing those vacation weeks throughout the year. The curriculum and the number of days of instruction are generally identical to the traditional calendar (NAYRE, 2000).

Intersession

The term refers to intervals of time between instructional sessions used for educational related services. These might include remedial activities, enrichment activities and recreational activities or camps (Kneese, 2000).

Multi-track

A multi-track schedule staggers the instructional and vacation/intersession periods of each track throughout the entire year so that some students are receiving instruction while others are on vacation (Kneese, 2000).

Single-track

A single-track schedule generally calls for an instructional year of 180 days, with short breaks (intersessions) interspersed throughout the year (Kneese, 2000).

Track

A track schedule involves a group of students who are assigned to attend school during the same instructional session. These students are on track and off track at the same time (Kneese, 2000).

Traditional Calendar

The term refers to an academic schedule that usually begins after Labor Day and ends early in the summer, with a break at Christmas, designated holidays, and a long summer vacation (Shields & Oberg, 2000).

Year-round Education and Year-round Schooling

The terms are often used interchangeably in the literature, but differ technically. Year-round education means shortening the summer vacation to add more school days to the school year. Year-round schooling, on the other hand, is a change of schedule that does not materially increase the days each child spends in school (National Association for Year-Round Education, 2006b).

Summary

A good deal of controversy surrounds the debate over the relative merits of year-round or balanced calendar schools and traditional-calendar schools and the issue of whether following a balanced calendar actually has significant positive effects on student achievement. Because schools are undergoing pressure to increase test scores, some states are now opting for some variant of year-round education as a strategy to boost student achievement.

Because this topic has generated a great deal of interest, several studies are being conducted around the country to determine if the use of year-round calendars increases

students' retention of material, thereby increasing test scores. This study analyzes the student achievement between students attending a school operating with a balanced calendar and students attending a traditional-calendar school.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter presents a review of literature that relates to the issues and research associated with year-round education, and is organized under the following headings: (a) History of Year-Round Education, (b) Definition of Year-Round Education, (c) Types of Year-Round Schools, (d) Research Studies on Academic Achievement in Balanced Calendar Schools, and (e) Summary.

Research by Harp and Kneese (1993; 1996) shows that overall findings from year-round schooling studies have been inconclusive because interpretation of study results has been severely limited by such methodological flaws as lack of a comparable control group, lack of pretest scores in a longitudinal framework, and failure to account for intercession schooling influences in year-round programs (Kneese, 1996; Six, 1993; Winters, 1994). As a result, no body of solid empirical evidence exists to support the proposition that year-round schooling improves achievement. Underlying logic implies extended-year schooling claims that increasing the number of instructional days will lead to measurable gains in academic achievement.

Indirect support for the extended-year schooling proposal comes from findings that other industrialized nations that demonstrate higher levels of achievement than the United States in international comparisons require twice as much core instruction time as does the United States (NECTI, 1994). Although the idea of lengthening the school year appeals to common sense and focuses on salient differences between American schools and their foreign counterparts, implementation of this reform measure has not received

enthusiastic support from all professionals. Many have expressed skepticism about any direct relation between instruction time and achievement, calling instead for more efficient use of time in the current school year (Adelman & Pringle, 1995, Karweit, 1985, Mazzarella, 1984; Pearman, 1987). Glines (1995) revealed that extending the school year would increase educational expenditures at all levels of government and could disrupt other segments of society such as family vacations. Consequently, the number of schools in the United States mandating a school year significantly longer than 180 days is relatively small (roughly 100 schools nationwide) (NAYRE, 1996).

One study in the past fifty years has attempted to directly assess the relations between school year extension and achievement (University of the State of New York & New York State Department of Education, 1968). Although this study concluded that extended-year schooling increased achievement, the results were compromised due to at least two serious methodological limitations—lack of a comparable control group and lack of pretest scores.

On the other hand, some researchers suggest that a longer academic year may boost student achievement. Julie Frazier (1996) followed the academic achievement of students in an extended-year school. She observed that the students in the extended year-school outpaced their counterparts in math and reading achievement by the beginning of first grade and maintained their “achievement gap” to the end of that year. Moreover, several reviews of year-round education (Kneese, 1996, Merino, 1983, Worthen & Zsiray, 1990) have arrived at the general consensus that the outcomes of year-round education are equal to or better than those achieved under the traditional school calendar.

Although researchers have not adequately offered reasons why achievement may be slightly higher in year-round schools, one possibility is that year-round schools can use intersessions to provide remediation and enrichment activities. Another possible explanation is that splitting up the long summer vacation into smaller pieces helps to alleviate some of the “forgetting” that has been shown to occur with the traditional school calendar (Cooper, Nye, Charlton, Lindsay & Greathouse, 1996).

Overall, research on year-round education suggests that students in year-round schools will perform as well as or better than their traditional calendar counterparts. However, according to research done in North Carolina in 1997, the results did not imply any clear advantage or disadvantage to year-round education with respect to student achievement in either reading or math.

Carroll’s theory (1963) serves as the theoretical framework for this study. Carroll’s theory emphasizes the importance of students experiencing academic success if there is sufficient time spent on what is to be learned. Conceptually, the balanced calendar offers the needed time for additional learning through scheduling variations (Kneese, 2000; Shields & Oberg, 2000; Stenvall & Stenvall, 2000). Carroll’s theory relates to the balanced calendar in that it is most important that students attend the intersessions where additional learning opportunities occur (Kneese, 2000; Stenvall & Stenvall, 2000).

History of Year-Round Education

Year-round school (YRS) programs date back to colonial days when the town of Dorchester, Massachusetts implemented the first YRS program (Zykowski et al., 1991).

According to Howell (1988), the records of the early 1900s show YRS programs being implemented in a variety of communities, including Bluffton, Indiana (1904); Gary, Indiana (1907), Amarillo, Texas (1910); Newark, New Jersey (1912); Minot, North Dakota (1917); Omaha, Nebraska (1925); Nashville, Tennessee (1926); and Aliquippa, Pennsylvania (1928) (Baker, 1990; Glines, 1992; Zykowski et al., 1991).

Superintendent William Wirt is credited with introducing the first officially accepted year-round program in 1904 in Bluffton, Indiana. Though a small rural community, Bluffton had outgrown its space. Wirt developed a rotating four-season schedule (fall, winter, spring, and summer) to address the space issue but also to improve the quality of education. The move in 1904 served as a vision or focus for the rest of the nation in regard to a balanced calendar (Glines, 1992). From 1912 to 1931, Superintendent Addison Poland conducted a K-12 year round program in Newark, New Jersey to accelerate learning. Based on the Bluffton, Indiana design, students could earn 1-1/3 credits by attending all four quarters. English classes were offered several months per year for many European immigrants (Glines, 1992).

In 1925, Superintendent Harold Weber of Nashville, Tennessee implemented a four-quarter system to provide non-graded continuous progress learning opportunities for students. Later, William Wirt became superintendent in Gary, Indiana and organized the platoon system to increase space and improve the quality of education by reducing classroom enrollments. He wrote *The Great American Lockout* in the early 1930s, in which he protested the fact that students were denied continuous learning opportunities. As a result, during the Depression, the Gary community created a school that operated

seven days a week for 50 weeks. It closed only two weeks in August. J. Loyd Trump, the national innovation leader of the 1960s and 1970s, was the principal of this Gary school.

These year-round school (YRS) programs began for a variety of reasons: (a) improve curriculum and learning, (b) provide options for families and students, (c) help immigrants learn English, (d) provide continuous vocational training, (e) improve the quality of education, and (f) provide additional space (Howell, 1988). According to Mutchler (1993), YRS proposals initially addressed two purposes: 1) the development of a more efficient use of school facilities and 2) a system for maximizing the outcomes of student learning.

Definition of Year-Round Education

Two different concepts prevail in the literature related to year-round education. One concept emphasizes year-round education as an extended year for students who attend school for more days than do students who follow the traditional calendar. The other concept simply involves rearrangement of the school calendar, with no net change in days of attendance or curriculum. However, none of the existing literature focuses specifically on the latter concept. From this perspective, the qualifying difference between year-round schools and traditional-calendar schools is the length of vacation and when it occurs. The reviewed research considers whether changing the period of instruction, thereby eliminating a portion of the long summer break, impacts student achievement. Conceptualizations of the traditional and the balanced calendars are graphically depicted in Figure 1 and Figure 2, respectively.

Traditional Calendar

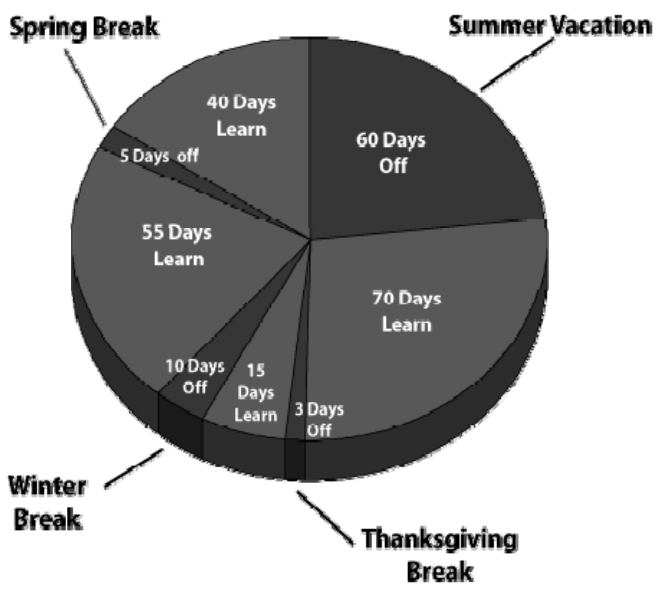


Figure 1. Conceptualization of the Traditional Calendar

Balanced Calendar

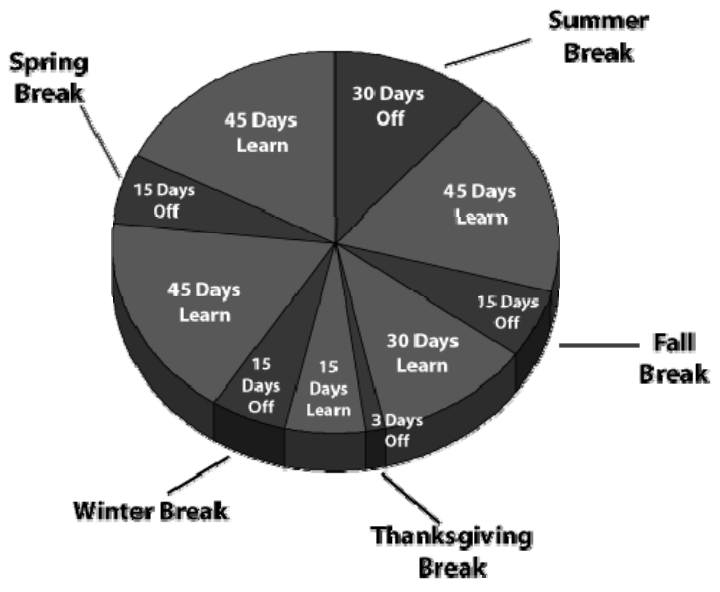


Figure 2. Conceptualization of the Balanced Calendar

The National Association of Year-Round Education (NAYRE) defines year-round education (YRE) as a concept that reorganizes the school year to provide more continuous learning by spacing the long summer vacation into shorter, more frequent vacations throughout the year. It does not eliminate the summer vacation, but reduces it and redistributes it as vacation or intersession time between the school year (National Association of Year-Round Education, 2006b). The revision of the school calendar from the traditional nine-month calendar to a year-round calendar is a reform that has been proposed to address issues associated with increasing student achievement, lowering the dropout rate and increasing academic achievement.

Types of Year-Round Schools

According to Goren and Carriendo (1985), there are two organizational types of year-round schools: single-track and multi-track. While single-track designs simply provide an alternative schedule to the traditional calendar, multi-track designs save space and accommodate more students. In addition, single-track designs are generally implemented to provide curricular enrichment and increase student retention of knowledge often believed to be lost during the lengthy summer vacation typical of the traditional calendar. Multi-track designs are generally implemented to reduce overcrowding in the schools without incurring the additional expense of new buildings. Schools can alternate between multi-track and single-track designs, depending on fluctuations in enrollment. For example, when enrollment is low, a school can follow the single-track design, then switch to the multi-track plan when enrollment rises. Both tracks of year-round education provide periods of instruction and vacation that alternate

throughout the calendar year, and both tracks can be implemented on either a voluntary or mandatory basis.

Within the framework of the two organizational types of year-round education, designs have included a multiplicity of configurations. The designs often vary according to the frequency and length of the vacation breaks, called intersessions (see Table 1).

Following are brief discussions of the more common configurations:

Table 1

Comparison of Traditional Versus Balanced Calendars

Calendar	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Traditional												
45-15												
60-20												
Key	Vacation/Intersession						In school					

Single-Track Calendar

The single track provides a balanced calendar for a more continuous period of instruction. Students and all school personnel follow the same instructional and vacation schedule. Single track does not reduce class size, nor does it allow a school to accommodate more students. The longer summer vacation is shortened, with additional vacation days distributed throughout the school year into periods called “intersessions.” Intersessions allow time for remediation and enrichment throughout the school year. The

most common types of single-track calendars are the 45-15 plan, the 60-20 plan and the 90-30 plan (Glines, 1992; Mussatti, 1981).

Multi-Track Calendar

A multi-track calendar is used primarily to alleviate overcrowding, although it also incorporates the educational values of single track year-round education, including intercessions. It is designed specifically for schools with a shortage of classroom space. A multi-track calendar is used to avoid holding double sessions, avoid building new schools and avoid the use of temporary structures. It not only saves on capital construction costs, but on the ongoing costs that are part of operating a new school. The multi-track calendar divides students and teachers into groups, or tracks of approximately the same size. Each track is assigned its own schedule. Teachers and students assigned to a particular track follow the same schedule and are in school and on vacation at the same time. The multi-track calendar creates a “school-within-a school” environment (Glines, 1992; Mussatti, 1981).

Four-Track Design

The more popular four-track plan in current use at the elementary school level is the 45-15 plan (Association of California School Administrators, 1988), which divides the calendar into four nine-week quarters of instruction, each followed by three weeks of vacation. If enrolled in a multi-track plan, students attend school on a staggered basis, which divides the students into four quarter tracks, and is in continuous operation throughout the year, with only 75% of the students in school at one time. Thus, when tracks A, B, and C are attending school, track D is on vacation. This plan enables a school to increase its capacity by 25%, and students still receive the traditional two-week

break during winter along with a one-week spring vacation, with an additional 10-week break before beginning the new term in July. Conversely, if enrolled in a single-track plan, the entire student body and staff share the same schedule of nine weeks of school and three weeks of vacation throughout the year (Glines, 1992; Mussatti, 1981).

The four-track design can follow the format of 60/20 or 90/30. In the 60/20 plan, students follow a schedule where they attend school for 60 days and then vacation for 20 days until they have attended three terms. The length of the 60/20 terms can be varied because of the holidays in order to meet state attendance regulations. This plan has been popular for districts that want 12-week grading periods along with longer vacation or intersession periods. Moreover, the 60/20 plan can be implemented with either a single-track or a multi-track design (Glines, 1992; Mussati, 1981).

Five-Track Design

The most common five-track plan is commonly called the Orchard Plan (Gandara & Fish, 1994). In this plan, students attend three 60-day terms, separated by three 15-day vacation periods. If used with the multi-track design, this design increases the faculty capacity by 25%. Track A begins the school year during the third week of August and ends the last week of June; then there is a spring break of one week, with a common four-week summer break for all students. An advantage of the Orchard Plan is that it provides a lower average class size as well as increases capacity (Gandara & Fish, 1991, 1994).

Three-Track Plan

A three-track plan which increases the facility capacity by 50% is commonly known as the Concept 6 Plan (Ballinger, Kirschenbaum, & Poimbeauf, 1987). With this plan, the school calendar is divided into six terms of approximately 43 days each. Students attend four of the six terms, two of which must be consecutive. Students are divided into three groups, one of which is always on vacation. This plan can also be implemented with a single-track design (Ballinger et al., 1987).

Dual-Track Plan

The dual-track plan is one in which some classes in the same school attend on a year-round single-track calendar, while the others attend on a traditional calendar. Generally, the students participate on a voluntary basis. Both tracks attend school the same number of days; the vacations are distributed in blocks of 10 days, except for longer breaks at December and August. All other aspects of the curriculum remain the same, including beginning the school year on the same day and using the same six-week reporting period (Glines, 1992; Mussati, 1981). The calendar developed for the school district in this study follows the 30/10 dual-track plan.

Other Designs

There are numerous other year-round education (YRE) plans available that are less frequently used. Each school district appears to have special needs and motives that demand a different design, and Ballinger et al. (1987) have encouraged school districts to design their own calendars.

Of these additional designs, the Quarter Plan, used in colleges, is perhaps the most recognized plan. This plan divides the calendar into four 12-week periods in the fall,

winter, spring, and summer. If the program is voluntary, students attend any three of the four sessions and may elect to attend the fourth. If mandatory, students are assigned by the school to three of the four sessions. When mandatory, this plan can accommodate a gain of 25% in enrollment (Association of California Administrators, 1988).

Another design, the Quinmaster Plan, divides the calendar into five nine-week semesters, called “quins.” If voluntary, students may attend any four of the five semesters but they are assigned specific semesters if mandatory. This calendar is most often used at the secondary level and also can be used with a single track (Glines, 1992; Mussati, 1981).

Research Studies on Academic Achievement in Balanced Calendar Schools

Advantages

Bradford (1996) described the Buena Vista planning process and outcomes in a 20-year review of a single-track four-quarter high school. Results include staff and student support, increased student achievement, increased student attendance and lower dropout, opportunity for remediation and enrichment. The program was voluntary. Over 50% of students consistently attended the fourth quarter.

Roby (1995) compared sixth-grade students’ mathematics and reading achievement at year-round and traditional schools in the same Ohio school district. A randomized, control-group, posttest only design was used controlling for the effects of history, maturation and pre-testing. The statistical and practical results favored the year-round calendar, particularly when the verbal covariate and the effect size analysis were considered.

In a study of six year-round elementary schools in North Carolina, Prohm and Baenen (1996) found that multi-track schools were at least as effective as traditional schools. Student achievement was above the district average, attendance was higher, and staff and parent attitudes were more positive.

Disadvantages

Just as the advantages of year-round education are numerous, so are the disadvantages (Mussati, 1981). Naylor (1995) discussed year-round education and the associated problems. He reported that year-round education has not been proven to be beneficial for students or parents, nor to be cost-effective.

Rasberry (1994) reviewed research on year-round elementary schools, noting that although proponents of year-round schooling emphasize cost savings, student achievement gains, and increased attendance, most studies and reports contradict these claims. Most of the studies reviewed found no significant increase in the educational benefits of year-round calendars.

Dossett and Munoz (2003) examined the impact of year-round scheduling on student achievement and attendance. Participants were 95 fourth- and fifth-grade students attending year-round schools and 95 students who attended schools with traditional calendars. Students were matched on third-grade test scores and socioeconomic status. Findings revealed no significant differences between students attending year-round schools and those attending schools with traditional calendars in both reading and math achievement and attendance.

Inconclusive

Ananda (1997) examined one program in a multi-track year-round elementary school, a tutoring program delivered during the students' intersession. Students, parents and teachers were surveyed and tests evaluated. Survey results were positive for achievement, enjoyment and confidence building. Report card analysis did not show significant increases. Levels of mastery in test results were high. Transportation availability and no additional costs to parents were also significant factors contributing to program benefits.

Campbell (1994) summarized a mixed-method study that examined year-round schooling compared to a traditional school-year schedule to see if year-round schooling would affect the achievement and attendance of a group of at-risk Texas elementary students. Student, teacher and parents perceptions were measured. There were no significant differences in students' outcomes, but students and parents perceived year-round education benefits.

Greenfield (1994) reported on the experience of a Maui school district implementing a year-round education program. Only a suggestion of academic improvement was provided. Testing showed learning loss was less for YRE students. Student, teacher, administrator, and parent preferences for YRE grew over time. Actual cost increases decreased over time, but annual costs remained about the same.

Summary

The preponderance of literature indicates there is no conclusive evidence to support or dispute the value of the balanced calendar. While it is still not clear whether the balanced calendar improves student achievement, it appears that it does not bring about significant decline in achievement.

CHAPTER 3

METHODOLOGY

Introduction

The purpose of this causal-comparative study was to analyze the impact of the balanced calendar on the reading achievement, English/language arts achievement, mathematics achievement, social studies achievement, and science achievement at a middle Georgia charter school. This chapter discusses the sample population, measures used, data collection procedures, and data analysis procedures followed to answer the research questions posited in Chapter 1.

Research Design

The study utilized a causal-comparative or *ex post facto* research design, which means that all of the information was previously collected and is being recalled to perform a new analysis of the data. Isaac and Michael (1995) state:

Causal-comparative research is *ex post facto* in nature, which means that data are collected after all events of interest have occurred. The investigator then takes one or more effects (dependent variables) and examines the data by going back through time, seeking out causes, relationships, and their meanings. (p. 54)

Data were collected from the Georgia Department of Education's web site for the period 2003-04 through 2005-06.

Population

The population in this study consisted of two public elementary schools in middle Georgia. Students in these schools were administered the Georgia Criterion-Referenced Test (CRCT) in reading, English/language arts, mathematics, social studies, and science at the third and fifth grade levels. Third- and fifth-grade students in these two schools

constituted the target population. The balanced calendar school was selected on the basis of its academic calendar, while the comparison school was selected on the basis of similarities in demographic characteristics. The choice of schools was based on convenience and expediency.

Instrumentation

Archival data, specifically the percentage of students meeting and exceeding standards on the Georgia Criterion-Referenced Competency Tests (CRCT) in the reading, English/language arts, mathematics, social studies, and science content areas were utilized. The Criterion-Referenced Competency Tests (CRCT) are based on Georgia's Quality Core Curriculum (QCC) and the Georgia Performance Standards (GPS). Georgia educators worked with the Georgia Department of Education and its contractors in the development of these tests. The assessments yield information on academic achievement at the student, class, school, system, and state levels. This information is used to diagnose individual student strengths and weaknesses as related to the instruction of the GPS/QCC, and to gauge the quality of education throughout Georgia (Georgia Department of Education, n. d.). These tests provide thorough and reliable data that can be used with confidence to make instructional and program improvement decisions. School performance data (summaries) were obtained from the Georgia Department of Education web site. Individual student data were not available to the researcher.

Data Collection

A post-hoc analysis was done on the impact of the balanced calendar on third- and fifth-grade students' achievement in the reading, English/language arts, mathematics, social studies, and science content areas. Data were collected and analyzed on third- and fifth-grade students enrolled in a school implementing a balanced calendar and third- and fifth-grade students attending a traditional-calendar school. The Georgia CRCT is administered each spring as part of the state's accountability plan. The researcher studied approximately 125 students in both the traditional calendar school setting and the balanced calendar school setting.

Data Analysis

Data were analyzed using version 12.0 of the Statistical Package for the Social Sciences (SPSS). An alpha level of .05 was employed to test for statistical significance. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to organize and summarize the data. The null hypotheses were tested using independent-samples *t* tests.

Tests for Research Questions

The research questions were tested as described:

Research Question 1 asks, "Is there a significant difference between reading scores of students on a balanced school calendar and students on a traditional school calendar?"

The following null hypothesis was formulated to address Research Question 1:

H_01 : There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the reading

content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced school calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the reading content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

Research Question 2 asks, “Is there a significant difference between English/language arts scores of students on a balanced school calendar and students on a traditional school calendar?”

The following null hypothesis was formulated to address Research Question 2:

H_02 : There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the English/language arts content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the English/language arts content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

Research Question 3 poses, “Is there a significant difference between mathematics scores of students on a balanced school calendar and students on a traditional school calendar?”

The following null hypothesis was formulated to address Research Question 3:

H_03 : There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the mathematics content area of the Georgia Criterion-Referenced Competency Test

(CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the mathematics content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

Research Question 4 poses, “Is there a significant difference between social studies scores of students on a balanced school calendar and students on a traditional school calendar?”

The following null hypothesis was formulated to address Research Question 4:

H_04 : There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the social studies content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of students meeting and exceeding standards in the social studies content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

Research Question 5 asks, “Is there a significant difference between science scores of students on a balanced school calendar and students on a traditional school calendar?”

The following null hypothesis was formulated to address Research Question 5:

H_05 : There is no significant difference in the percentage of third- and fifth-grade students meeting and exceeding standards in the science content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage

of students meeting and exceeding standards in the science content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

Summary

The research methodology was described in this chapter. Archival student assessment data were utilized to evaluate the impact of the balanced school calendar. Data collection and data processing methods were described. Null hypotheses were tested using independent-samples t tests. Findings of the study, including tables and supporting narratives, are presented in Chapter 4. The summary, conclusions and recommendations are presented in Chapter 5.

CHAPTER 4

DATA ANALYSIS

The purpose of the study is to analyze the impact of the balanced calendar on reading, English/language arts, mathematics, social studies, and science achievement. This purpose was accomplished through the compilation of data on third- and fifth grade students enrolled in a school implementing a balanced calendar for three years and compared to similar third- and fifth-grade students enrolled in a traditional-calendar school.

This chapter first summarizes the descriptive characteristics of students in each group upon which information was obtained. Second, results of analyses are provided to address each of the five posited null hypotheses tied to reading achievement, English/language arts achievement, mathematics achievement, social studies achievement, and science achievement.

Descriptive Characteristics

Data were collected and analyzed for cohorts of third- and fifth-grade students enrolled during the academic years 2003-04, 2004-05, and 2005-06. The percentage of students meeting and exceeding standards in reading, English/language arts, mathematics, social studies, and science were collected and analyzed for the school implementing a balanced calendar and compared to the percentage of students meeting and exceeding standards in reading, English/language arts, mathematics, social studies, and science for a similar school operating with a traditional calendar. In the following tables, N represents the number of variables studied by subject areas: reading, English/Language Arts, mathematics, social studies, and science.

School A

The rural Georgia charter school has been on a balanced calendar since 2002, and the school's enrollment has been consistent for the past three years. The school met AYP (adequate yearly progress) goals during the 2005-06 school year. The school is not a Title I school. The enrollment ranged between 103-111 students in Grades PK-12. All (100%) of the students were eligible for free or reduced-price meals. During the 2006-07 school year, the racial composition of the school was 78.08% Black, non Hispanic; 13.94 White, 7.57% Multiracial, and 0.40% Asian or Pacific Islander. Over half the school population was female (57.66%); 42.34% was male.

School B

The second middle Georgia school chosen by the researcher has operated on a traditional school calendar since its inception. The enrollment for the past three years has been consistently around 450 students. The school houses Grades PK-5. Ninety-five percent of students were eligible for free or reduced-price meals. The school did not meet AYP requirements and was in Needs Improvement status during 2006-07. The school is a school-wide Title I school. Thirteen percent of students participate in the ESOL (English for Speakers of Other Languages). During the 2006-07 school year, the racial composition of the school was 56.95% Black, non Hispanic; 37.44% Hispanic, 3.27% White, 2.18% Multiracial, and 0.27% Asian.

Data Analyses

Reading Achievement

Table 2

Independent Samples t-Test Analysis for Percentage of Third- and Fifth-Grade Students Meeting and Exceeding Standards in Reading in Balanced Calendar and Traditional Calendar Schools

Group	<i>N</i>	Mean percentage meeting/Exceeding standards	<i>SD</i>	<i>df</i>	<i>t</i> -value	Sig. of <i>t</i>
Balanced calendar	125	63.17	22.44	10	.016	.988
Traditional calendar	125	63.33	13.53			

In Chapter 1, a research question tied to the investigation of reading achievement was posited. One null hypothesis was formulated to address this research question. The difference in means reported above does not show statistical significance between academic achievement for students in the balanced calendar versus the traditional calendar.

Null hypothesis one. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the reading content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced school calendar and the percentage of third- and fifth-

grade students meeting and exceeding standards in the reading content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

The t test for independent samples was used to test this null hypothesis. Levene's test for equality of variances was not statistically significant ($F = 1.130, p = .313$). The assumption of equal variances was met and a pooled t test was used. There was no statistically significant difference at the .05 level, $t(10) = .016, p = .988$, between the two groups (see Table 2).

As shown in Table 2, the results indicated there was no statistically significant difference between the means of the two groups at the .05 level. Specifically, the percentage of third- and fifth-grade students meeting and exceeding reading content standards in the balanced calendar school was similar to the percentage of third- and fifth-grade students meeting and exceeding reading content standards in the traditional calendar school. Based on these findings, the null hypothesis of no significant difference was accepted.

English/Language Arts Achievement

Table 3

Independent Samples t-Test Analysis for Percentage of Third- and Fifth-Grade Students Meeting and Exceeding Standards in English Language Arts in Balanced Calendar and Traditional Calendar Schools

Group	<i>N</i>	Mean percentage meeting/Exceeding standards	<i>SD</i>	<i>df</i>	<i>t</i> -value	Sig. of <i>t</i>
Balanced calendar	125	59.83	15.72	8.776	-.022	.983
Traditional calendar	125	59.67	10.61			

In Chapter 1, a research question tied to the investigation of English/language arts achievement was posited. One null hypothesis was formulated to address this research question. The difference in means reported above does not show statistical significance between academic achievement for students following the balanced calendar versus the traditional calendar.

Null hypothesis two. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the English/language arts content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the English/language arts content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

The t test for independent samples was used to test this null hypothesis. Levene's test for equality of variances was statistically significant ($F = 5.433, p = .042$). The assumption of equal variances was not met and thus the t test for unequal variances was used. There was no statistically significant difference at the .05 level, $t(8.776) = -.022, p = .983$, between the two groups (see Table 3).

As shown in Table 3, the results indicated there was no statistically significant difference between the means of the two groups at the .05 level. Specifically, the percentage of third- and fifth-grade students meeting and exceeding English/language arts content standards in the balanced calendar school was similar to the percentage of third- and fifth-grade students meeting and exceeding English/language arts content standards in the traditional calendar school. Based on these findings, the null hypothesis of no significant difference was accepted.

Mathematics Achievement

Table 4

Independent Samples t-Test Analysis for Percentage of Third- and Fifth-Grade Students Meeting and Exceeding Standards in Mathematics in Balanced Calendar and Traditional Calendar Schools

Group	N	Mean percentage meeting/Exceeding standards	SD	df	t -value	Sig. of t
Balanced calendar	125	61.67	13.09	10	1.159	.273
Traditional calendar	125	68.67	6.89			

In Chapter 1, a research question tied to the investigation of mathematics achievement is posited. One null hypothesis was formulated to address this research question. The difference in means reported above does show statistical significance between academic achievement for students in the balanced calendar versus the traditional calendar.

Null hypothesis three. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the mathematics content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the mathematics content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

The t test for independent samples was used to test this null hypothesis. Levene's test for equality of variances was not statistically significant ($F = .688, p = .426$). The assumption of equal variances was met and a pooled t test was used. There was no statistically significant difference at the .05 level, $t(10) = 1.159, p = .273$, between the two groups (see Table 4).

As shown in Table 4, the results indicated there was no statistically significant difference between the means of the two groups at the .05 level. Specifically, the percentage of third- and fifth-grade students meeting and exceeding mathematics content standards in the balanced calendar school was similar to the percentage of third- and fifth-grade students meeting and exceeding mathematics content standards in the traditional calendar school. Based on these findings, the null hypothesis of no significant difference was accepted.

Social Studies Achievement

Table 5

Independent Samples t-Test Analysis for Percentage of Third- and Fifth-Grade Students Meeting and Exceeding Standards in Social Studies in Balanced Calendar and Traditional Calendar Schools

Group	<i>N</i>	Mean percentage meeting/Exceeding standards	<i>SD</i>	<i>df</i>	<i>t</i> -value	Sig. of <i>t</i>
Balanced calendar	125	64.67	9.93	10	.924	.377
Traditional calendar	125	69.50	8.09			

In Chapter 1, a research question tied to the investigation of social studies achievement was posited. One null hypothesis was formulated to address this research question. The difference in means reported above does not show statistical significance between academic achievement for students in the balanced calendar versus the traditional calendar schools.

Null hypothesis four. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the social studies content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of students meeting and exceeding standards in the social studies content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

The t test for independent samples was used to test this null hypothesis. Levene's test for equality of variances was not statistically significant ($F = .034, p = .857$). The assumption of equal variances was met and a pooled t test was used. There was a statistically significant difference at the .05 level, $t(10) = .924, p = .377$, between the two groups (see Table 5).

As shown in Table 5, the results indicated there was no statistically significant difference between the means of the two groups at the .05 level. Specifically, the percentage of third- and fifth-grade students meeting and exceeding social studies content standards in the balanced calendar school was similar to the percentage of third- and fifth-grade students meeting and exceeding social studies content standards in the traditional calendar school. Based on these findings, the null hypothesis of no significant difference was accepted.

Science Achievement

Table 6

Independent Samples t-Test Analysis for Percentage of Third- and Fifth-Grade Students Meeting and Exceeding Standards in Science in Balanced Calendar and Traditional Calendar Schools

Group	N	Mean percentage meeting/Exceeding standards	SD	df	t -value	Sig. of t
Balanced calendar	125	62.33	14.08	10	-.460	.655
Traditional calendar	125	58.67	13.53			

In Chapter 1, a research question tied to the investigation of science achievement is posited. One null hypothesis was formulated to address this research question. The difference in means reported above does not show statistical significance between academic achievement for students in the balanced calendar versus the traditional calendar.

Null hypothesis five. There is no significant difference in the percentage of third- and fifth-grade students meeting and exceeding standards in the science content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of students meeting and exceeding standards in the science content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

The t test for independent samples was used to test this null hypothesis. Levene's test for equality of variances was not statistically significant ($F = .009, p = .927$). The assumption of equal variances was met and a pooled t test was used. There was a statistically significant difference at the .05 level, $t(10) = -.460, p = .655$, between the two groups (see Table 6).

As shown in Table 6, the results indicated there was no statistically significant difference between the means of the two groups at the .05 level. Specifically, the percentage of third- and fifth-grade students meeting and exceeding science content standards in the balanced calendar school was similar to the percentage of third- and fifth-grade students meeting and exceeding science content standards in the traditional calendar school. This t -test analysis shows that, while no statistically significant differences existed between balanced calendar and traditional calendar students, those in

the balanced calendar school had a higher percentage meeting science content standards than their traditional-calendar peers (62.33 vs. 58.67, respectively). Based on these findings, the null hypothesis of no significant difference was accepted.

Summary

Chapter 4 presented the results of the data analyses that were used to test four null hypotheses posited for this study. A summary of the findings and conclusions and recommendations that were developed from the findings is presented in Chapter 5.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This final chapter summarizes the results of the study and presents conclusions as they relate to the existing body of related literature. Furthermore, recommendations are offered for schools implementing a balanced calendar, educational practitioners and future researchers.

Summary

The researcher examined the over-arching question: To what extent does a balanced calendar affect student academic achievement? The researcher collected data from the online DOE website and from the principals from each school investigated. The data that were examined by the researcher in the study were gathered from the Georgia Criterion- Referenced Competency Test (CRCT). Each subject area of the CRCT was analyzed for third- and fifth-grade students for each prospective school studied. The analysis proved that there is no significant difference between third and fifth grade students meeting and exceeding standards in all areas of the CRCT.

Discussion

The purpose of this study was to determine the impact the balanced calendar had on the academic achievement of third- and fifth-grade students as measured by performance on the Georgia Criterion-Referenced Competency Tests (CRCT) in the reading, English/language arts, mathematics, social studies, and science content areas. The following null hypotheses were tested:

1. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the reading content area of the

Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced school calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the reading content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

2. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the English/language arts content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the English/language arts content area of the Georgia CRCT in a similar school utilizing a traditional calendar.
3. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the mathematics content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the mathematics content area of the Georgia CRCT in a similar school utilizing a traditional calendar.
4. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the social studies content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the social studies content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

5. There is no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the science content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the science content area of the Georgia CRCT in a similar school utilizing a traditional calendar.

A causal-comparative research design was used. Quantitative academic data were collected from the Georgia Department of Education's web site and analyzed using independent-samples *t* tests. The population consisted of third- and fifth-grade students who attended a school implementing a balanced school calendar and third- and fifth-grade students attending a similar school utilizing a traditional school calendar.

An analysis of data with regard to testing of hypotheses was provided in Chapter 4. A summary of the results of those tests are presented as follows:

Reading Achievement

The first null hypothesis, which predicted no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the reading content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced school calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the reading content area of the Georgia CRCT in a similar school utilizing a traditional calendar was accepted. No significant difference was found between groups.

English/Language Arts Achievement

The second null hypothesis, which predicted no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the English/language arts content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the English/language arts content area of the Georgia CRCT in a similar school utilizing a traditional calendar, was accepted. No significant difference was found between groups.

Mathematics Achievement

The third null hypothesis, which predicted no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the mathematics content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the mathematics content area of the Georgia CRCT in a similar school utilizing a traditional calendar, was accepted.

Social Studies Achievement

The fourth null hypothesis, which predicted no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the social studies content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the social studies content area of the Georgia CRCT in a similar school utilizing a traditional calendar, was accepted.

Science Achievement

The fifth null hypothesis, which predicted no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the science content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the science content area of the Georgia CRCT in a similar school utilizing a traditional calendar, was accepted.

The research revealed there was no significant difference in the achievement of students who attend a balanced calendar school and students who attend a traditional calendar school because balanced calendar schools are geared more towards the at-risk or disadvantaged child rather than on the whole population. These special needs students are less likely to retain information over the summer months and are also less likely to be challenged academically when not in the academic environment. Naylor (1995) reported that year-round education has not been proven to be beneficial for students, or parents, nor to be cost-effective. Another researcher, Raspberry (1994), reviewed research on year-round elementary schools, noting that although proponents of year-round schooling emphasize cost savings, student achievement gains, and increased attendance, most studies and reports contradict these claims.

The researcher would like to add that after working in a school that followed a balanced calendar for three years, she tends to agree with the research that there are benefits to a balanced calendar for low socio-economic students. The students, faculty, and staff also felt that the calendar was a benefit to the students who attended this school. In a study conducted by Campbell (1994), after examining year-round schooling

compared to a traditional school year, student, teacher, and parent perceptions were measured. Campbell stated there was no significant difference in students' outcomes, but students and parents perceived year-round education benefits. However, on the other hand, some of the parents and the community failed to see the positive impact that the balanced calendar had on the students, so as a result, after three years the balanced school calendar was abandoned for the traditional calendar.

Conclusions

The first null hypothesis, which predicted no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the reading content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced school calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the reading content area of the Georgia CRCT in a similar school utilizing a traditional calendar, was accepted. Next, the second null hypothesis, which predicted no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the English/language arts content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the English/language arts content area of the Georgia CRCT in a similar school utilizing a traditional calendar, was accepted. The third null hypothesis, which predicted no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the mathematics content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the

balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the mathematics content area of the Georgia CRCT in a similar school utilizing a traditional calendar, was accepted. The fourth null hypothesis, which predicted no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the social studies content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the social studies content area of the Georgia CRCT in a similar school utilizing a traditional calendar, was accepted. Lastly, the fifth null hypothesis, which predicted no significant difference between the percentage of third- and fifth-grade students meeting and exceeding standards in the science content area of the Georgia Criterion-Referenced Competency Test (CRCT) after three years of implementation of the balanced calendar and the percentage of third- and fifth-grade students meeting and exceeding standards in the science content area of the Georgia CRCT in a similar school utilizing a traditional calendar, was accepted.

Results of the study indicated no statistically significant differences in academic achievement between third- and fifth-grade students attending a school implementing a balanced calendar and third- and fifth-grade students attending a traditional-calendar school. In this study sample, the science achievement of students attending a balanced calendar school was higher, but it was not statistically significant. With a causal-comparative research design, it was surprising no significance was found which caused the researcher to speculate further which factors might have contributed to no significant findings.

Although no significant differences in academic achievement were found between the school implementing the balanced calendar and the school implementing the traditional calendar, continued research in the area of balanced school calendars and their impact on academic achievement is necessary to enhance the body of literature.

Recommendations

The current study relied on quantitative data to determine program impact. Future studies examining balanced school calendars are encouraged to use a multi-faceted methodological approach (e.g., mixed-methods). In future studies, it is recommended that individual student data (i.e., scaled scores, standard scores) be gathered and analyzed. In this study, an attempt was made to gather de-identified student level data, but due to districts' policies regarding the use and release of student test score data, the researcher had to rely on aggregate, school-level data available from the Georgia Department of Education's web site. In the current study, student performance data from one school implementing the balanced calendar and one comparison school utilizing the traditional calendar were collected and analyzed. Future studies are encouraged to use a larger sample size than that utilized in this study such that generalizations of the results may be made. Because the study yielded results that suggested no significant difference in student performance in a balanced calendar school, it is the final recommendation of this study that factors other than the school's designation as balanced calendar or traditional calendar be explored.

The researcher might share the findings of this study through an abstract or overview sent to the principal or district office of each school studied. The researcher could possibly write and submit an article concerning the study and its findings in a

professional magazine. The researcher could also participate in forums to share the findings of this study.

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