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# The Effects of Summer Vacation on Learning: A Look at Interrupted Instruction

Jennifer Hagen
*The College at Brockport*, jenhagen85@yahoo.com

# The Effects of Summer Vacation on Learning: A Look at Interrupted Instruction

Thesis

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Jennifer Hagen
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College at Brockport
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SUBMITTED BY:

Jennifer Hagen 5/8/02
Candidate Date

APPROVED BY:

[signature] 5/9/02
Thesis Advisor Date

[signature] 5/9/02
Second Faculty Reader Date

[signature] 5-9-02
Director of Graduate Studies Date

## Abstract

The purpose of this study was to examine the effects of interrupted instruction, in the form of summer vacation, on reading achievement of high, middle, and low achieving students. The researcher determined the loss or gain by using Running Reading Records (RRR) from the ending of first grade moving to the beginning of second grade. A discussion of the relevance of year-round education (YRE) is included as well.

This study revealed that 15 of the 62 students lost according to RRR levels while 47 of the 62 either maintained or gained levels. It was determined that interrupted instruction did not necessarily impede student performance in reading.

Research on the topic of YRE shows very slight loss or gain in academic performance over time.

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# CHAPTER I

Statement of the Problem

## Purpose

The purpose of this study was to examine the effects of interrupted instruction, in the form of summer vacation, on reading achievement of high, middle and low achieving students moving from first to second grade.

## Introduction

Teachers have long discussed the effects of summer vacation on student achievement. Some say that students come back refreshed and ready to learn. Others teachers say they spend quite a bit of time reteaching or reviewing.

The current school calendar debate continues. In 1999, some 597 districts in the United States and Canada practiced year-round education (YRE). However, the traditional school year, from September to June, still operates as the norm across the continent (Shields & Oberg, 1999). Therefore a discussion to determine which is best for students arises. Does the traditional calendar support learning and retention over the summer months? Is YRE a more or less effective method of teaching children when looking at retaining learning over time?

## Research Question

What will be the effects on reading achievement of high, middle, and low achieving students, moving from first to second grade, as measured by running reading records after interrupted instruction in the form of a summer vacation with no instruction?

## Definitions

Running Reading Records (RRR): a shorthand system of recording oral reading. The teacher is a neutral observer and uses a RRR to capture the reading behaviors of a student to be analyzed at a later time.

## Need for the Study

In Gwinnett County, Georgia schools currently offer free summer school to elementary and middle school children who need help. But some students have fallen so far behind by the beginning of summer that teachers cannot get them up to speed (Puckett, 1999). The summer break does not allow sufficient time for students to catch up. Advocates for the implementation of year-round schooling propose that this is one possible way to help students maintain their level of learning.

Interrupted instruction plays a part in summer loss. So what is the solution to this problem? Most research points to an increase in school days or year-round schooling as a solution. Other aspects that seem to impact summer loss are widely disputed by authors. Some predicate loss on other factors such as economic status, intelligence scores, grade level, or concept-based, factual, or procedural learning. In any event, a need is evident to seek out how educators and communities can best sustain and support the needs of their students.

# CHAPTER II

## Review of the Literature

### Purpose

The purpose of this study was to examine the effects of interrupted instruction, in the form of summer vacation, on reading achievement of high, middle and low achieving students moving from first to second grade.

### Introduction

Summer vacation has long been a time to enjoy the warm summer days with friends and family. Children look forward to the lazy days of summer and activities that await them outside of school in June.

Today there are two camps that seem to exist about the current school calendar debate. One proponent backs the extended school calendar, which would increase the number of instruction days. The other calls for year-round education (YRE) that does not necessarily extend the number of days, rather readjusts its timeline. Year-round education proponents may back one of a few timeline scenarios. Many back the 45 instructional days to 15 vacation day timeline, while others

prefer the 60/15, or 90/30 day models. Imbedded in the YRE option is the further decision to use single-tracking or multi-tracking. In a single-tracking model all students are on the same schedule (for example, School "X" adheres to the 45/15 model for all students all year long). In contrast, the multi-tracking model, most commonly used as a means of solving school overcrowding, may also use the 45/15 schedule, but have three tracks of students rotating during the year. The multi-track model in School "X" would have the school open all year, but with only a portion of the students there at any given time. As of 1992, it was estimated that 1.3 million students in 23 states were being educated in some form of year-round education (Mydans, 1991).

Regardless of the position either group holds, a consensus exists about the possible negative effects of summer vacation on learning.

> They suggest that children learn best when instruction is continuous, and a 3-month break is simply too long. The long vacation breaks the rhythm of instruction, leads to forgetting, and requires that a significant amount of time be spent on review of old material when students return to school in the fall. (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996).

Shields and LaRocque (1996) explained that in both single and multi-track models of YRE greater student retention should be the pay-off due to changes in organization of curriculum.

## Early Research (Prior to 1975)

In the early years of American schooling, calendars were designed to fit the needs of particular communities. In agricultural areas it was typical for children to attend school for six months so that they were free to participate in the farming economy, from planting to harvesting. During the same time, urban schools operated on an 11-12 month schedule (Association of California School Administrators, 1988). By the turn of the century, the present 9-month schedule evolved at a time when 85% of the country was working in agriculture. Looking at present day numbers, about 3% of American livelihoods are linked to it (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996).

Up until 1996, thirty-nine studies had been conducted concerning the decline in achievement scores after summer vacation. Of the twenty-six studies conducted prior to 1975, Cooper et al. (1996) found it difficult to include these findings in their meta-analysis due to the nature of inquiry and relevance to today's school children. Shields and LaRocque (1996) discovered that despite their efforts to find factual data on YRE, many previous articles were flawed in terms of research

methodology and/or analytical procedures. This is true of reports both pre and post-1975. At times it is difficult to distinguish the most solidly-based information from those that are merely conceptually biased. Therefore, many contradictory statements and "studies" exist in the fields of interrupted instruction and year-round education. Upon further research it should be noted that the nature of a study, its perameters and collection of mathematical information must be taken into consideration as to the relevance in today's discussion of interrupted instruction and year-round education.

Some of the earliest reported studies of the 1900's assessed students in math, reading, and spelling. Brueckner and Distad (1924) examined the June to September reading scores of 315 first graders. They reported that no significant loss was found. They did note however that the lowest intelligence group had the greatest loss, but that no statistical tests were conducted. A 1928 study by Nelson reported a summer loss for third, fifth, and seventh graders in math computation and spelling. Several fall retests revealed that the losses took from 2-6 weeks to recoup depending on the subject matter and grade. By the 1930's Kolberg (1934) and Schrepel and Laslett (1936) demonstrated differing effects based on students' intelligences and mental age with students of lower intelligence showing more negative effects. These students ranged from grade 7-8.

By the 1960's measurement instruments were dramatically improved, sample sizes were considerably larger, and the use of inferential statistics was commonplace (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996). Beggs and Hieronymus (1968) compared the spring and fall scores of the Iowa Test of Basic Skills (ITBS) with a sample of 2,160 fifth and sixth graders. Their results indicated losses in math concepts and problem solving, reading comprehension, spelling and English usage. More substantial losses were reported by students who scored in the lower percentiles, while gains were made by students at the other end of the spectrum.

Early YRE programs conducted in the 1960's and 1970's were found to be well conducted, but again caution should be taken when interpreting data. Keep in mind the very different social and ethnic contributors in those days. YRE during the sixties and seventies looks quite different than more recent models, largely in part to immigration, our current work force, expectations regarding schooling, a tighter job market, and the need for different programs like English as a Second Language (ESL) and special education implementation (Shields and LaRocque, 1996).

Tests or studies prior to the more advanced and statistically sound work should be suggestive at best. While they did provide some historical insight on the topic

of interrupted instruction from summer vacation and the implementation of YRE, care should be taken when generalizing their findings.

## More Current Research (post 1975)

In a study conducted by the New York Board of Regents in 1978, it was reported that students forgot much of what they learned in schools while on summer vacation. This is particularly true of students who do not use English as the primary spoken language in their household. This report stated that with YRE, less is forgotten over shorter vacations and teachers spend less time reviewing (Weaver, 1992). It was found that advantaged students learn an average of one year and three months "worth of knowledge" during the school year and an average of one month's growth over the summer for a total of one year and four months growth. A disadvantaged student learns an average of one year and one month's growth and then loses three to four months during the summer, for a net growth of seven to eight months. Further into a student's education the advantaged student will score at the ninth grade level and the disadvantaged student at the forth or fifth grade level. In addition the New York Board of Regents also found that migrant and disadvantaged students lose about 27% more learning during the summer months than their peers (Brekke, 1992).

A study conducted in Wisconsin (Rude, 1975) took a sample size of 545 first graders and sought out to find if there were differences between spring and fall norm-referenced reading tests, differences between male or female retention, and differences in retention of above-average, average, and below average students mental ability. The researcher determined slightly significant gains moving from spring to fall on norm-referenced reading scores. It was determined that the sex of the subject had very little to do with retention of learning. Finally, there was no apparent difference in mental ability of subjects, too. Rude (1975) stated that in an average class of thirty students, his study determined that about four or five students would need to be retested in the fall because they would have moved from the "mastery level" to the "nonmastery" level by the fall of the following school year. Perez (1978) also found that there was no difference between spring and fall scores using the Gates-MacGinitie or Wisconsin Test of Reading Skill Development standardized test. Perez used a sample size of eighty-four first through fifth graders in Utah.

The National Institute of Education addressed the issue of summer loss in the context of Compensatory Education (CE) students. This address was presented to Congress in 1978 and included a sample of 3,000 first and third graders. Upon examining the effects of summer on reading and math scores, an overall conclusion determined that CE students showed a greater change in scoring than

non-CE students. The Comprehensive Test of Basic Skills (CTBS) was used for testing.

A review of literature revealed that studies on any effects of summer vacation on learning disabled students were quite minute. Shaw (1982) conducted a study to discover if there was a relative variance for learning disabled students compared to their non-disabled regular education counterparts. In his study it was demonstrated that regular education students made gains of five months and learning disabled a loss of one month. Shaw clarifies this by stating that regular education students may have read more during the summer because they found more success with it than learning disabled students. This lack of practice may have also contributed to the loss.

A study conducted by Heyns in 1978 took a sample of approximately 1,600 fifth, sixth, and seventh graders from Atlanta. She compared test score changes in word recognition using the Metropolitan Achievement Test (MAT). The subtest of word recognition was used due to its high degree of reliability compared to all nine subtests. Heyns found not only going to school improved achievement but also that "summer learning is considerably more dependent on parental status than learning during the school year." (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996). A study of Canadian students in grades one, three and five, also using the

MAT, concluded that summer vacation provided gains in raw achievement in word knowledge, reading and math concepts (Wintre, 1986).

Studies and implementation of year-round education since 1990 have identified few studies in which there was no gain in achievement, and in most cases no decline either. Therefore it can be interpreted that year-round education does not have a negative impact on student achievement, and in several cases actually has a positive impact (Shields et al. 1996). Where gains have occurred, the literature offers two possible explanations. One research theory explains the impact of remembering and forgetting on learning. Some authors believe that students in the year-round education model have gains because of more frequent but shorter breaks or intersessions. These students are less likely to lose what they have been taught previous to intersession. Teachers reported spending less time reteaching and the majority of time in new concept learning. This is believed to be a factor in student gains in achievement. Ananda (1997) used her study to see if the use of an intersession tutoring program would prove worthwhile in maintaining students grades. Language arts scores using the statewide criterion-referenced test, Texas Assessment of Academic Skills (TASS) was used. Fifty-nine percent of students who participated in the intersession achieved mastery on the TAAS. This program boosted that its model provided for remediation at three months instead of nine months because of the multi-track year-round education

model their elementary students followed. Students perceived they made academic progress as a result of the program.

There is much debate over the cause of student loss. Some researchers state that forgetting occurs during the first two weeks of non-learning, therefore loss should be similar for year-round and traditional school calendar students. Others add to the discussion by stating that the issue of forgetting /retention of learning is multi-dimensional and involves more than just loss over time (Allinder, Fuchs, Fuchs, & Hamlett, 1992).

The other theory states improved academics is due to the focus on changing curriculum and instructional practices. Since less time is spent reviewing, students are more engaged to learn new curriculum and this accounts for better attitudes toward learning and better test scores.

The state of Virginia in a 1992 document recalled that although some regression in student learning during school has been documented, the issue of forgetting is linked more directly to lack of practice or opportunity to practice. Therefore it would seem that summer school programs would have the potential to maintain or improve reading achievement. The state of Virginia believed this in 1992, but limited evaluation of this hypothesis was available (Brekke, 1992).

A six-year study by Shields (1996), sought to compare student achievement in terms of traditional and year-round education schedules. A sample of 114 fifth-grade students provided data. Over the six-year period, the multi-track year-round education school had a slightly superior experience in terms of reading ability. The Stanford Achievement Test (SAT) was administered annually and provided the data for this research study. As Shields states "the strength of this form of assessment is that it enables examination of trends over time." Based on the raw scores, Shield found that achievement gains surpassed those found in traditional schools when compared to multi-tracked year-round schools. According to parent surveys, parents felt that their children remembered and retained information better, and that they were more focused when they returned after the shorter breaks instead of the whole summer.

Finally, Sheilds and Oberg (1999) conducted a six year study comparing the academic and non-academic outcomes between YRE and traditional calendar schools. Their study discovered that over the six year span, 4% of YRE schooling scores and 21% of traditional schooling scores fell below their states predicted ranges. The Utah Statewide Testing Program and Stanford Achievement Test were used to test student growth. This study took into consideration the socio-economic status of this urban area. It was clearly shown that year-round multi-track schools outperformed traditional schools with more of their scores falling

within predicted ranges. The authors attest to the increase in scores due to the organizational effect on student achievement. These organizational changes lead to modified teaching techniques which seem to benefit student achievement. When socio-ecomonic factors are taken into consideration, the analysis of the 31,000 fifth-graders in these schools support the notion that year-round schooling is statistically as good as or better than traditional schools. No differences were found in non-academic areas.

In conclusion, care should be taken when interpreting data on the topic of interrupted instruction and year-round education. Careful separation should be made of fact from opinion. Starting in the early 1900's and leading up to most recent research, this researcher has found thus far that only slight gains in retention and achievement can be given credit to the year-round education model. Also, a review of the literature has determined that interrupted instruction also has varying degrees of importance on student achievement. It has shown no significant loss or slight loss on student achievement. A need to reevaluate the current school calendar and continued effects of summer loss for elementary school children is needed.

# CHAPTER III

## Design of the Study

### Purpose

The purpose of this study was to examine the effects of interrupted instruction, in the form of summer vacation, on reading achievement of high, middle, and low achieving students moving from first to second grade

### Research Question

What will be the effects on reading achievement of high, middle, and low achieving students, moving from first to second grade, as measured by running reading records after interrupted instruction in the form of a summer vacation with no instruction?

# Methodology

## Subjects

The researcher conducted the study using a sample of 62 students. All students attend the same suburban elementary school in Upstate New York. No students received any summer instruction.

## Materials

The researcher collected data using Running Reading Records to determine the instructional reading level of all targeted students leaving school in June and then upon re-entry in September. In order to collect these data the researcher distributed a letter to the second grade teachers (Appendix).

## Procedures

Fourteen second-grade teachers were given the form to collect the needed data. They were given nine days to complete the form and return it to the researcher. The children were selected randomly and categorized by one of three groups: high, middle, or low achieving. Each of these subsets was specifically defined by Running Reading Record Levels. They were as follows...

Second Grade

High achieving: Level 24-30+

Middle achieving: Level 18-23

Low achieving: Non-reader to Level 17

Teachers were asked to indicate if a child selected was an identified student. An identified student was determined to be one with an existing Individual Education Plan (IEP) and in an inclusion classroom. This group provided an additional subgroup of the study.

## Analysis of Data

The data were examined to determine if there were gains or losses in high, middle, or low achievement groups. The data are reported using a descriptive statistic.

# CHAPTER IV

## Analysis of the Data

### Purpose

The purpose of this study was to examine the effects of interrupted instruction, in the form of summer vacation, on reading achievement of high, middle, and low achieving students moving from first to second grade.

### Findings and Interpretations

After collecting all the data, a total of 62 students were used in this study. Of those 62 students randomly selected, only seven were identified students. Upon gathering the data it was determined that a total of 15 students regressed according to their Running Reading Record scores. A total of 22 students gained levels according to RRR, and 25 students maintained the level they were at when they left first grade.

The tables that follow show the breakdown of low, middle, and high achieving students according to their degree of loss, gain, or ability to maintain their RRR level.

**Table 1**

**Students who Lost (Regressed)**

| *Low | **Middle | *** High |
|---|---|---|
| 8 | 5 | 2 |

**Table 2**

**Students who Gained**

| *Low | **Middle | ***High |
|---|---|---|
| 10 | 6 | 6 |

**Table 3**

**Students who Maintained**

| *Low | **Middle | ***High |
|---|---|---|
| 6 | 6 | 13 |

* A Low student was identified as being a non-reader to level 17 at the conclusion of first grade.
**A Middle student was identified as reading at or between levels 18-23 at the conclusion of first grade.
***A High student was identified as reading at or between levels 24-30 at the conclusion of first grade.

The identified students were included in the data on the previous page. However it should be noted that this subgroup contributed to seven of the students in the low achieving group. Of those seven identified students, the table below shows how they performed.

**Table 4**

**Performance of Identified Students in Low Grouping**

| Loss | Gained | Maintained |
|---|---|---|
| 0 | 3 | 4 |

Of the seven students, three were non-readers who were included in the maintained group, two read at a level one RRR (one student maintained while the other gained), and two read at a level six RRR (both gained).

This study seems to be representative of the research in the field of interrupted instruction. While losses and gains have been reported, neither are solely the result of interrupted instruction in the form of summer vacation. It can be concluded that of the students who lost during the summer months, the majority

of them came from the low achieving group (8/15). On the otherhand, of the students that gained RRR levels upon returning to school in September, many came from the low achieving group (10/22). The remaining students in the gain group were evenly split between middle and high achieving students (6 middle achieving and 6 high achieving). This study revealed that of the students that maintained the same exact level, the majority of them came from the high achieving group (13/25). The low and middle achieving groups were again evenly split at 6 each.

Therefore this study can conclude that interrupted instruction in the form of a summer vacation does not, for the most part, affect students' RRR levels. While the researcher found that 15/62 lost, she also found that 47/62 either gained or maintained their reading levels! These data support the research that students show little or no loss during interrupted instruction.

When considering if YRE is a probable avenue to help students maintain their skills, this study concluded that it is not necessary. The majority of students are able to maintain or even gain reading skills during interrupted instruction.

# CHAPTER V

Conclusions and Implications

## Purpose

The purpose of this study was to examine the effects of interrupted instruction, in the form of summer vacation, on reading achievement of high, middle, and low achieving students moving from first to second grade.

## Conclusions and Implications

This study found that the misconceived notion that students lose ground in reading over the summer months is not altogether true. While the data support previous research that interrupted instruction shows no significant or slight loss on student achievement; the data also support previous thoughts that approximately five students in a primary classroom will have enough summer loss to drop from a mastery level to non-mastery level in reading (Rude, 1975). In this study it was found to be true also. While the students were not labeled mastery or non-mastery, they were reassessed using RRR to determine their instructional level in reading. Hypothetically then, if these 62 students were divided into three

classrooms, statistics would show that 15 of the students loss over the summer months. This calculates into five per classroom.

This study also found that because students for the most part were able to maintain or gain reading levels, interrupted instruction does not drastically affect reading achievement. This study showed that 15/62 students lost, while 47/62 either maintained or gained reading levels upon entry to second grade. The debate over whether year-round education helps students perform better and at a more consistent rate, still rages on. This study showed that students were still able to maintain or even gain levels with interrupted instruction in the form of a summer vacation.

Let us not throw out the theory behind year-round education though. Keep in mind that research shows that districts consider YRE for several reasons. Some feel space constraints and look to YRE as a possible first answer. Others feel that YRE forces changes in organizational arrangements, social climate, and conceptions of curriculum and instruction. Many schools that change their calendar also focus on modifying some of their curriculum and instructional practices; thus achievement gains may be attributed to changes in programs and pedagogical practices. Shields and Oberg (1999) found in their study that teachers agreed that they needed to be better organized to eliminate any wasted time by

focusing on 3 or 9-week units under the YRE method. A more regular "learning rhythm" is beneficial to many students because it reduces review time. The redistribution of vacation time seems to reduce loss for some students. This is one notion that justifies slight increases in academic achievement from YRE.

According to my study's finding then, YRE would not necessarily play a roll in reading achievement as measured by RRR, but this is not to say that YRE would not benefit students outside the realm of RRR.

## Further Research

When looking at the relationship between interrupted instruction and its relation to YRE further research is needed to see the long term effects of both over time. The conceptual and structural issues surrounding YRE warrant that considerable further research is needed to better understand the impact of change in school calendar to changes in teaching and learning based on student performance. It has been argued that increase in performance of YRE students is due in part to the belief by teachers that students have forgotten less, therefore teachers spend less time in repetitious review. This allows for increased instructional time for new learning. This researcher found that the majority of the 62 students in her study were able to maintain or gain their level of reading with interrupted instruction.

A question arises then, do students retain reading ability no matter what their school calendar is? How do older primary and secondary students perform with interrupted instruction and without? This researcher feels that it seems evident to look into the field of learning, forgetting and retention more deeply. More insight into the field of learning, forgetting and retention could be concentrated with a sample of less-advantaged students and their effects over time. Since studies have shown that this group sometimes has more difficulty retaining learning, it may be a good basis for in depth study.

Continued research in the field of interrupted instruction and its relation to YRE needs to continue. The public should be provided with more studies that compare overall academic progress with and without interrupted instruction. Within these perameters what are the long-term effects of interrupted instruction and YRE according to academic progress, social outcome, and organizational outcomes?

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**Appendix**

Teacher_____

Please list 6-9 students running reading record levels moving from first to second grade. Do not include any student names, just which category they fall under. If you select an identified student please put an asterisk at the beginning of the line.

**Low achieving** (ended 1st between non-reader and level17)

| | Ending 1st | Beginning 2nd |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |

**Middle achieving** (ended 1st between levels 18-23)

| | Ending 1st | Beginning 2nd |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |

**High achieving** (ended 1st between levels 24-30+)

| | Ending 1st | Beginning 2nd |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |