

# Research Articles

## GCTE

### I. The Impact of Looping on Reading Achievement

By Christy Kelley

Christy Kelley is currently a second grade teacher at Cheatham Hill Elementary in Cobb County, Marietta, Georgia. She has taught first grade for three years and second grade for two years. She holds a Bachelor's of Science degree in Elementary Education from Augusta State University and her Master's in Education degree from Kennesaw State University. She resides in Marietta, Georgia.

#### Abstract

*This quantitative research was conducted to discover the effect of looping (remaining with a group of students for a two year cycle) on student test scores. A looped class of first to second graders was compared to a matched sample of non-looping students. Their reading achievement scores were compared for the end of both years, and the results were significantly different. This research assists in supporting the positive correlation between looping and student achievement.*

#### Review of Literature

Looping is a model of teaching that is sometimes referred to as multi-year instruction, teacher rotation, two-cycle teaching, and student progression (Gaustad, 1998). The teacher advances from one grade level to the next with her students, and at the end of the "loop" will begin another cycle with a new group of students. Most literature states that looping allows students to "gain a month of learning time at the start of the second year" (Gaustad, 1998) and those students "exhibit substantially higher test scores on standardized tests than [those] in the traditional grade organization" (Burke, 1997).

There are many positive changes associated with looping. Some teachers reported positive changes in school climate, teachers who loop are calmer, students are more collaborative, and more learning time results in higher student achievement (Black, 2000). According to Black, the positive changes are both affective and academic.

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Looping is still considered “innovative” in the United States today. In Project FAST (Families are Students and Teachers), schools reported dramatic effects on both student academic achievement and parental involvement due to looping. They cited benefits such as an additional month of teaching time, more time for at-risk kids to master skills, and stronger relationships with parents and students. Two similar schools were studied: one that practiced looping and one that didn't. The study found that extended relationships resulted in kids finding school less boring and they outperformed the other school on basic skills tests (Burke, 1997).

More research states that teachers and students who loop do not have to start over the second year, and the teachers can acquire more knowledge of students. Additional effects of looping include improved behavior and attitudes and reducing retention and special education referrals (Gaustad, 1998). Looping goes hand in hand with using authentic assessment, inclusion models, and team-teaching. Mostly done in primary grades, researchers find it would be most beneficial in middle school years. Gaustad states that there are some problems associated with looping: emotional hardship leaving each other, weaknesses of a teacher for two years, and it may be a hard adjustment on any newcomers. However, he still implies that looping is an overall effective model for improving student learning and teacher effectiveness.

One study on this teaching practice involved a school that wanted to solve the problem of lost instructional time at the beginning of the school year. They considered their students' poor family life and decided to implement looping as a strategy. A study was conducted on middle class students from first to second grade, and all the results obtained were positive. Test scores were higher than non-looping students, parent/student/teacher attitudes were better, and learning time was increased. They used interviews and surveys and some standardized test data to compile the results (Kroggman & Van Sant, 2000).

Milburn (1981) sought to understand what children gain by being with the same teacher for several years. He studied two similar schools: one with traditional grade-level structure and one using an extended teacher-student relationship model. The results showed a slight difference in basic skills achievement tests but significant differences in attitudes about school. This implies that looping may not result in higher test scores but will certainly result in better attitudes about school and learning (Milburn, 1981).

In 1995 a study was conducted on two grade levels to determine the impact of looping on achievement (Yang, 1997). The standardized test scores showed that the looping students outperformed the non-looping students on both test scores and attitude surveys.

Most of the research investigated is qualitative and seems to indicate many positive affective outcomes. Very little evidence has been gathered to show academic achievement outcomes or quantitative data to support the looping model for teaching. The purpose of this research was to discover if looping would have any impact on reading comprehension scores directly. The intent was to support the idea that looping has a positive academic outcome for students, not just a positive social outcome.

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## Methods

### Participants

The experimental group involved was composed of 16 second grade students for the 2002-2003 school term. They attended a suburban neighborhood school comprised of 1012 students, largely upper middle class, with both parents working. This school was relatively new and had a strong and active Parent-Teacher Association (PTA), which had won many prestigious awards for support and involvement. The school had approximately 33% minority and 67% Caucasian students in grades K-5; approximately 18% of students were on free or reduced lunch; 13% of the population was in the gifted program; and 16% of students received special education services. About 40% of the staff had advanced degrees. This particular group of 16 students was not racially diverse; all 16 children were Caucasian. There were six girls and 10 boys involved in the looping class study. Four students were in the gifted program and four students received additional reading support through EIP (Early Intervention Program). One student was classified as learning disabled (LD), and two more were on SST (Student Support Team) for learning difficulty review. There was very strong parental support and a high level of school involvement in this group.

The control group was selected from the remainder of the school's second grade student population that was not looping (traditional grade organization). A match sample of sixteen students from the other classrooms was selected based on the following criteria: gender, race, and STAR reading test scores from their first grade year. Every effort was made to match student to student based on those criteria, so that the control group could be directly compared to the experimental group.

### Instrumentation

A single instrument was used for data collection in this study. The STAR Reading Software yielded quantitative data for each student in the study.

### STAR Reading Software

The STAR is a computerized reading assessment program administered to the student by a teacher. The STAR Reading Software is the only nationally normed, computer-adaptive, classroom reading assessment available to schools for classroom use. It is a fast and reliable assessment of reading ability in a short time frame (less than 20 minutes). Any student with at least a 100 word reading vocabulary can take this test. It is comprised of fill in the blank questions with multiple-choice answers that progressively increase in difficulty based on the student's accuracy. The test continues to increase in difficulty until the student misses a predetermined number of questions. The program, based on accuracy and increase in difficulty, determines the student's reading level. The score is given in grade equivalent format, with the year and month.

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## Design

This research involved comparing the calculated gain scores of the experimental group (the looping class) to the gain scores of the control group (the non-looping class). The gain scores were calculated from the end of first grade STAR scores compared to the end of second grade STAR scores.

Matching the sample groups as closely as possible to one another minimized contamination to the study. The children of the control and experimental groups were not in the same classrooms. The control group population was selected from various second grade classrooms, thereby minimizing the perceived teacher effect, which might have resulted from selecting a control group from one classroom.

In this case, the first grade class was comprised of 20 students originally. When parents were given the opportunity to have their children loop up with the teacher for second grade, two chose to put their children with a different teacher for social reasons. Another two students moved out of the district over the summer. Thus, leaving 16 students to loop to second grade with the same teacher.

There are several perceived limitations to this study. One is the inexperience of the researcher. Another is the small sample size that was studied. There was no way to control the size of the experimental group; therefore the control group was small. As with any educational research, this study cannot prove or disprove the given theory, but one may venture to say this teaching method may indeed support higher student achievement.

## Analysis

The pre- and post-test scores were entered into a database using JMPIN Software for Statistical Visualization (SAS Institute, 2001). A control group (non-looping students) of 16 students was compared to an experimental group (the looping students) of 16 students. The pre-test was from the end of first grade (year 2002) and the post-test was from the end of second grade (2003). The difference scores were then compared with a one-way ANOVA, or "T-test" (*See Figures 1 and 3*).

## Results

Data from the STAR test was analyzed to determine a p-value, which is a statistic measuring if the probability that the results found could have been due to chance or not. The smaller the p-value, the greater the probability that the results were not due to chance alone. By convention, a relationship is judged statistically significant when the corresponding p-value is .05 or less. The analysis of variance of the STAR test yielded a probability of  $p= 0.0158$ ; these results could occur merely by chance (*See Figure 3*). Results indicate a significant difference in reading comprehension scores between the experimental (looping) and control (non-looping) groups.

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Grade Equivalent STAR Test Data

<u>S No.</u>	<u>Group</u>	<u>End First</u>	<u>End Second</u>	<u>Difference</u>
1	Experimental	1.2	2.7	1.5
2	Experimental	1.7	2.6	0.9
3	Experimental	3.2	3.5	0.3
4	Experimental	1.6	2.9	1.3
5	Experimental	3	4	1
6	Experimental	3.3	4.5	1.2
7	Experimental	4.1	5.1	1
8	Experimental	2.1	3.9	1.8
9	Experimental	1.8	3	1.2
10	Experimental	2.1	3.7	1.6
11	Experimental	2	3	1
12	Experimental	3.1	6	2.9
13	Experimental	2.9	4.3	1.4
14	Experimental	1.9	2.4	0.5
15	Experimental	2.2	3.2	1
16	Experimental	1.4	3.1	1.7
1	Control	1.1	1.6	0.5
2	Control	1.7	2.7	1
3	Control	3.2	4.6	1.4
4	Control	1.6	2.2	0.6
5	Control	2.9	3.6	0.7
6	Control	3.3	3.9	0.6
7	Control	4	4.4	0.4
8	Control	2.1	3.6	1.5
9	Control	1.8	2.2	0.4
10	Control	2.1	3.2	1.1
11	Control	2	2.6	0.6
12	Control	3.1	4.5	1.4
13	Control	2.9	3.6	0.7
14	Control	1.9	2.3	0.4
15	Control	2.2	3.3	1.1
16	Control	1.4	2.1	0.7

FIGURE 1

<b>Group</b>	<b>Mean (avg.) pre-test First Grade STAR</b>	<b>Mean (avg.) post-test Second Grade STAR</b>	<b>Mean (avg.) Gain or Difference</b>
<i>Control (non-looping)</i>	2.33125	3.15000	.81875
<i>Experimental (looping)</i>	2.35000	3.61875	1.26875
			Diff.= 4 ½ months

Figure 2

As evidenced in *Figure 2*, the group of looping students had an average gain of one year and two and a half months, while the non-looping control group’s average gain was only eight months. This results in a difference of four and a half months reading comprehension growth between looping and non-looping students.

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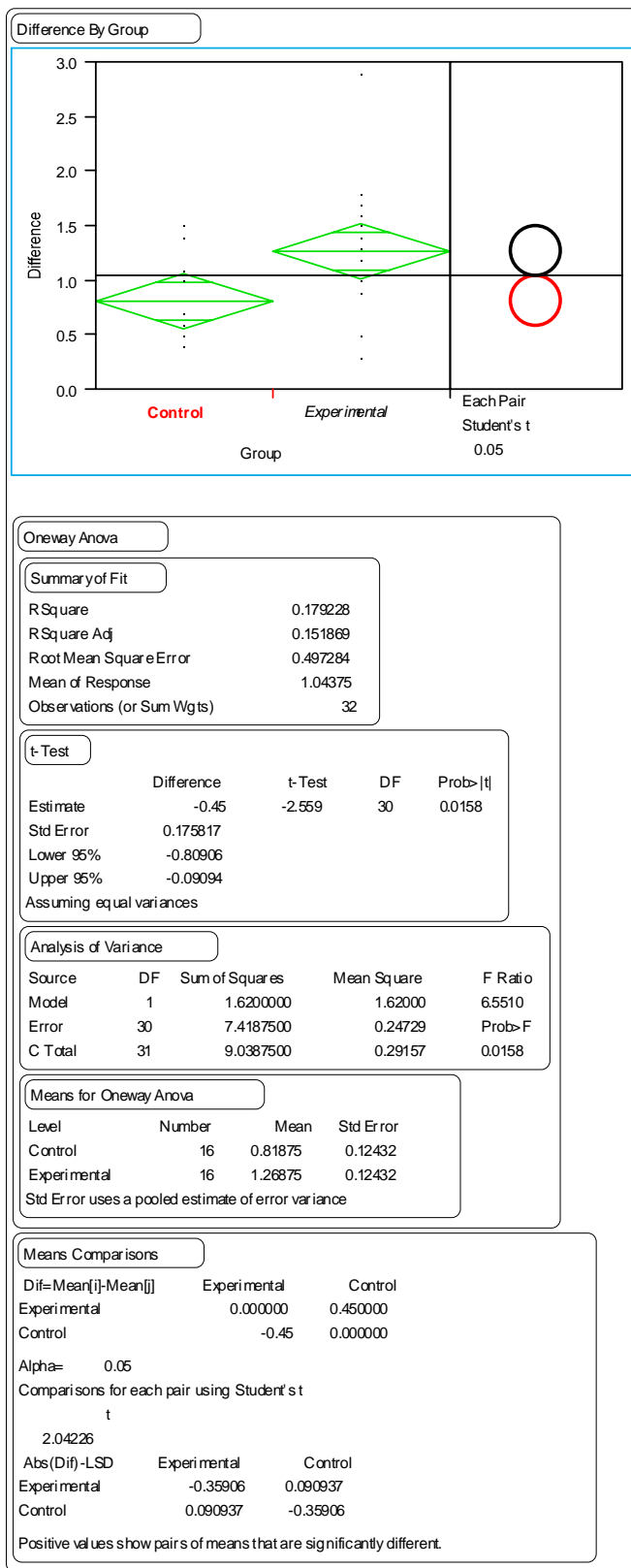


FIGURE 3

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## Definition of Terms

<i>Control</i>	The matched sample group of 16 students for the STAR data.
<i>Experimental</i>	The 16 students involved in the looping class, from first to second grade.
<i>P-Value</i>	A statistic measuring the probability that the results found could have been due to chance. The smaller the p-value, the greater the probability that the result was not due to chance alone. By convention, a relationship is judged statistically significant when the corresponding p-value is .05 or less.
<i>Gain Score</i>	Difference between a posttest and pretest score.
<i>Grade Equivalent</i>	A norm-referenced score: the grade and month of the school year for which a given score is the actual or estimated average, based on a 10-month school year.
<i>Mean</i>	The average of scores.

## **Conclusions**

These research results were similar to previous research done on the looping model of teaching. Yang (1997) and Burke (1997) discovered that looping did in fact have a positive impact on student achievement test scores as well as on students' attitudes about school. Milburn (1981) discovered a positive affective outcome as well. Their results are then supported by the data from my research project as evidenced by the reading achievement gain shown in Figure 2. Based on my research, there is a direct positive correlation between looping and reading achievement. The four and a half month difference between looping and non-looping student test scores shows that the teaching strategy is worth implementing. The probability of this difference occurring by chance is extremely small (0.0158), which implies that the looping strategy is an effective way to increase student achievement.

## **Implications**

Not only did this research indicate that looping had a positive impact on student achievement, it was my personal observation that there were many positive social effects as well. My students came to school more confident and more relaxed than their peers. They came to school feeling a strong sense of community and responsibility. Also they were familiar with routines and expectations; they felt comfortable with their peers and teacher. There were no surprises, and learning began immediately at the start of the new school year.

My hope is that the data from this research will encourage other educators to explore the looping model and record their results in an effort to accumulate more research data on this model of teaching. Perhaps as more positive data is collected, more administrators and teachers will be persuaded to try new models of teaching in order to increase student achievement and attitudes about school. This is a cost effective way to have a direct influence on achievement.

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My goal is to return to the year's data and compile attendance patterns for both groups of students in order to possibly show a positive impact on school attendance. It would have been interesting to discover the impact on math scores; however, we did not give a standardized test that year (such as ITBS or SAT-9) to use for comparisons. If I were to attempt this research again, I would include a survey in order to compile some qualitative data as well to support my strong belief that looping does in fact have a direct, positive impact on student achievement (academic and social).

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## II. The Impact of Looping on Student Reading Achievement

By Jody L. Carothers

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### Abstract

*The purpose of this research was to collect data to support the theory that the practice of looping has a positive effect on student achievement. Data was collected from a class that looped from second to third grade. The data collected consisted of third grade STAR computer reading assessment and first and third grade Iowa Test of Basic Skills (ITBS) scores. The data were then analyzed to determine if there was a significant difference in student reading achievement between the looping and non-looping students selected for the study.*

### Review of Literature

Looping is a teaching process in which the teacher and students stay together for at least two years. This practice dates back to the times of the one-room schoolhouse. The most important variable in a positive elementary school program is the constant attention of a single teacher/caregiver with whom the child can develop a predictable and meaningful relationship (Wood 1994). Many educators believe that looping is an easy, inexpensive reform. It gives teachers more time. Most teachers, when talking about looping, mention time as a factor: a month of learning time built into the second and sometimes third year at the beginning of school, another month built into the end of the first year, as students end the year on a high note. But time is a tool, to be used with other child-friendly strategies, to promote what is at the core of the looping – relationship (Grant, Johnson, Richardson 1996).

The implication for most of the research done on looping is that more caring, positive, longer relationships with teachers can produce higher ratios of student satisfaction with school. This in turn leads to more successful, satisfied students. When this occurs it can be assumed that there would be a positive impact on learning and achievement. In Project F.A.S.T. (Families Are Students and Teachers), implemented in East Cleveland, Ohio, schools report dramatic effects on both student academic achievement and parental involvement as a result of the “extended family” aspect of looping (Hampton, Mumford, & Bond, 1997). Milburn (1981) studied two elementary schools of similar socioeconomic areas, which were not experiencing major problems. One school used a traditional grade-level structure, and the other used an extended teacher-student relationship approach where students remained with the same teacher for more than one year. This study found that students in the extended relationship school were less likely to report disliking school or to find it “boring.” Additionally, the young students in the extended relationship school outperformed their counterparts in the traditional school on basic skills tests

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(Burke, 1997). Research was also conducted at the Berino Elementary School for the school year of 1995-96. In general, looping students outperformed non-looping students. Of 36 comparisons, 35 or 97% favored the looping program. On the ITBS, looping students scored higher in all areas compared (Yang, 1997).

The decision to conduct this research investigation on looping was made based on the fact that there has been very little previous research done on looping. It is commonly believed that looping can be a valuable tool in further enhancing student achievement. This investigation used a quantitative design to examine the effects of looping on student achievement, specifically related to reading achievement. Data was collected prior to second grade, prior to third grade, and at the conclusion of third grade. The focus of this research was to understand the relationship between looping and student reading achievement.

## **Methods**

### Participants

The population studied was selected from the second grade level of a predominately middle class, suburban elementary school. The school is comprised of 1012 students, with approximately 33% minority, and 66 % Caucasian. Approximately 18 % of the population receives free or reduced meals. An estimated 13% of the student population participates in the gifted program, and 16 % receive special education services. Approximately 40 % of the certified staff has higher-level education degrees.

The experimental group consisted of my second grade class. There were 19 students, 9 girls and 10 boys. Of the 19 students there were: 1 Hispanic student, 1 Asian student, 3 African-American students, and 14 Caucasian students. They were predominately middle class, with all of the parents working. Several of the students live in single parent households. Of the 19 students, 2 were in E.I.P. (Early Intervention Program), and 8 were in the gifted program.

The control group consisted of a matched sample group selected from the remaining eight third grade classrooms. The students were matched based on S.T.A.R. reading test scores, gender, and race. I made every effort to match the participants in the groups as closely as possible.

### Instrumentation

Two instruments were used for data collection. Both instruments, the STAR Reading Software and the ITBS (Iowa Test of Basic Skills), yielded quantitative data.

### STAR Reading Software

The STAR is a computerized student reading assessment program administered to the students by a teacher. The STAR Reading Software is the only nationally-normed, computer-adaptive, classroom reading assessment. The STAR is comprised of brief, in-context vocabulary items with authentic text passage items that progressively increase in difficulty based on student accuracy. Any student with at least a 100-word reading vocabulary can take this test. The test

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continues until the student incorrectly answers a computer-determined number of questions. The student's reading level is determined by the program based on number of questions answered correctly, and the level of difficulty of those questions. The score is given in grade equivalent form. The STAR is a fast and reliable computer test that can be administered in a short time frame (approx. 20 min.).

### Iowa Test of Basic Skills

The ITBS is a nationally normed test. It is a standardized test administered to the students by a teacher with a proctor in attendance. The ITBS is used to determine student achievement levels in all curriculum areas.

### Design

This research involved comparing gain scores of a control group and an experimental group. The beginning of the year, third grade STAR reading scores were compared to the end of the year, third grade STAR reading scores. The student's final, first grade ITBS reading achievement scores, and their final third grade ITBS scores were also compared for the entire grade level. Gain scores were calculated using grade equivalent scores from this test.

Contamination was minimized by selecting control group students from other third-grade classes, while matching them as closely as possible. Selecting the control group from the eight other third grade classes also helped minimize the teacher effect, which could possibly be great if all of the control students had the same teacher.

Research was limited by the inexperience of the researcher, the small size of the study, and the fact that this study is being carried out at only one school. The experimental group size was determined by the number of returning students willing to participate in the looping experiment. The control group had the same number of students as the experimental group.

The intervention used in this study was the two-year looping model. In this model the teacher moved from one grade level to the next, keeping the class together for two years. The parents of a second grade class were given the opportunity for their child to loop with their second grade teacher to third grade. After consideration, one child was put in a collaborative class, another chose to be put into another third grade class, and two children moved out of the school district. The remaining nineteen students chose to loop.

### Analysis

Pre- and posttest scores of the STAR and ITBS (Figures 1 & 4) were compared and analyzed using an Anova in JMPIN (2000). STAR tests were given at the beginning and end of third grade. ITBS tests were given at the end of first and third grade. All of the test scores were entered into the JMPIN (2000) program and analyzed separately to determine if there was a significant difference in achievement between the looping and non-looping students (Figures 3 & 6).

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## Results

The data was analyzed to determine the p-value, a statistic measuring the probability that the results found could not have been due to chance. The smaller the p-value, the greater the probability that the results were not due to chance alone. By convention, a relationship is judged statistically significant when the corresponding p-value is .05 or less. The analysis of variance of the STAR reading achievement test yielded a probability of  $p = 0.0168$  that these results could occur by mere chance (Figure 3). The analysis of variance of the ITBS reading achievement scaled scores yielded a probability of  $p = 0.0470$  (Figure 6).

The results of both tests derived p-values that indicated that the experimental looping group had a significant difference in reading achievement compared to the non-looping students. The STAR experimental looping group achieved an average grade equivalent gain of approximately 10 months, while the non-looping group achieved an average grade equivalent gain of approximately five months. The difference is five months growth. The ITBS experimental looping group achieved an average scaled score gain of 44.1111, while the non-looping group achieved an average scaled score gain of 38.0273. This is a difference of approximately six points growth.

STAR Student Pre and Post Scores

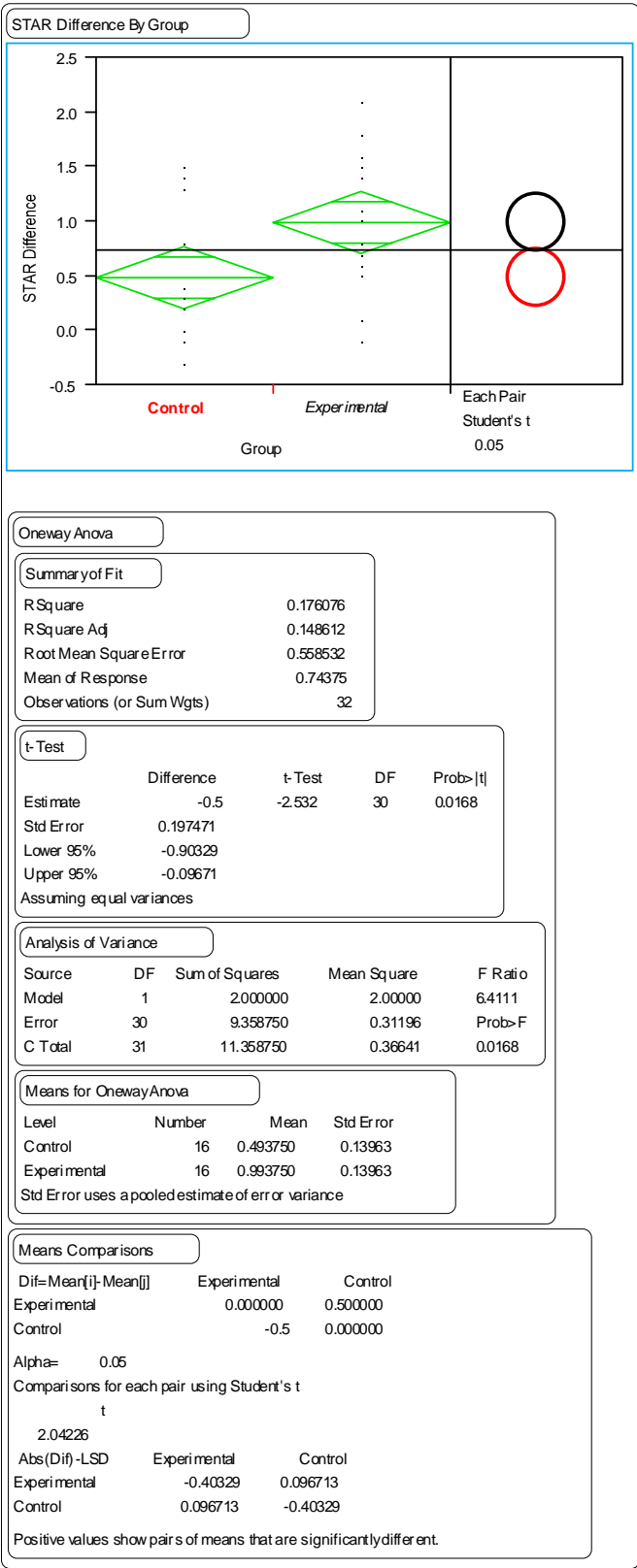
Students	Group	Pre-STAR	Post-STAR	STAR Difference
1	Experimental	4.9	5.9	1
2	Experimental	2.8	4.3	1.5
3	Experimental	4.1	5.2	1.1
4	Experimental	2.6	3.4	0.8
5	Experimental	4.1	5.2	1.1
6	Experimental	4.4	6	1.6
7	Experimental	3	2.9	-0.1
8	Experimental	1.8	2.4	0.6
9	Experimental	2.9	4.3	1.4
10	Experimental	3.4	4.5	1.1
11	Experimental	3.2	3.7	0.5
12	Experimental	3.2	5.3	2.1
13	Experimental	3.5	4.2	0.7
14	Experimental	4.6	5.2	0.6
15	Experimental	3.9	4	0.1
16	Experimental	4.4	6.2	1.8
1	Control	4.8	5	0.2
2	Control	2.9	3.3	0.4
3	Control	4.2	5.7	1.5
4	Control	2.6	3	0.4
5	Control	4	4	0
6	Control	4.3	5	0.7
7	Control	3	2.7	-0.3
8	Control	1.9	1.8	-0.1
9	Control	2.9	3.3	0.4
10	Control	3.4	4.2	0.8
11	Control	3.2	4.7	1.5
12	Control	3.3	4.7	1.4
13	Control	3.5	3.9	0.4
14	Control	4.6	4.9	0.3
15	Control	3.9	4.3	0.4
16	Control	4.4	5.7	1.3

**Figure 1**

Grade Equivalent STAR Test Data

	Mean (avg.) Pretest STAR	Mean (avg.) Posttest STAR	Difference (Gain) STAR
<i>Experimental (looping)</i>	3.55000	4.54375	0.99375
<i>Control (non-looping)</i>	3.55625	4.05000	0.49375
			Diff. = 5 months

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**Figure 3**ITBS Student Pre and Posttest Scaled Scores, and Difference

Group	Pretest	Posttest	Difference
Control	156	198	42
Control	156	196	40
Control	148	193	45
Control	172	204	32
Control	172	226	54
Control	138	192	54
Control	176	232	56
Experimental	186	228	42
Control	137	188	51
Control	162	178	16
Control	182	238	56
Experimental	144	192	48
Control	193	234	41
Experimental	162	230	68
Control	156	175	19
Control	142	170	28
Control	142	166	24
Control	150	190	40
Control	182	222	40
Control	164	204	40
Control	174	220	46
Experimental	160	210	50
Control	151	193	42
Control	165	219	54
Control	158	192	34
Control	152	214	62
Control	144	190	46
Control	170	198	28
Control	143	180	37
Control	160	214	54
Experimental	164	202	38
Control	158	186	28
Experimental	145	184	39
Control	141	171	30
Control	167	200	33
Control	140	172	32
Control	156	184	28
Control	177	206	29
Control	168	196	28
Experimental	168	214	46
Control	156	176	20
Control	158	208	50
Control	186	232	46
Control	173	192	19
Control	190	216	26
Control	138	190	52
Control	172	210	38
Experimental	179	219	40
Control	160	216	56
Control	166	204	38
Control	162	208	46
Control	152	198	46
Control	151	163	12
Control	174	206	32
Control	158	187	29
Control	170	193	23
Control	180	232	52
Control	154	208	54
Control	156	196	40
Control	182	232	50
Experimental	148	192	44
Experimental	142	178	36
Experimental	164	198	34
Control	164	206	42
Control	142	170	28
Control	172	217	45
Control	171	220	49
Control	182	238	56
Control	200	238	38

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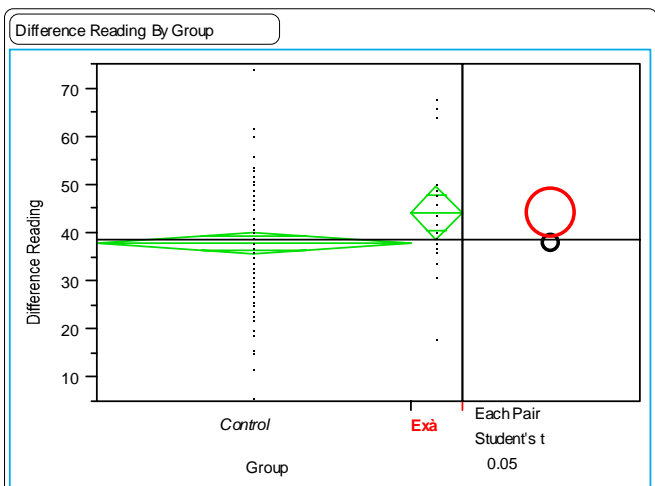
Control	150	178	28
Control	153	177	24
Experimental	165	214	49
Control	164	210	46
Control	154	192	38
Experimental	158	176	18
Experimental	139	205	66
Control	151	178	27
Control	138	188	50
Control	171	214	43
Control	139	192	53
Control	172	214	42
Control	160	187	27
Control	166	201	35
Control	196	216	20
Control	134	175	41
Control	162	199	37
Control	145	177	32
Control	143	184	41
Control	168	218	50
Control	168	183	15
Experimental	159	196	37
Control	148	222	74
Control	170	196	26
Control	160	186	26
Experimental	161	192	31
Control	149	174	25
Control	156	186	30
Experimental	188	232	44
Control	176	214	38
Control	172	208	36
Control	172	210	38
Control	163	192	29
Control	153	193	40
Control	163	202	39
Control	160	207	47
Control	176	224	48
Control	139	171	32
Control	148	190	42
Control	169	200	31
Control	174	208	34
Control	134	176	42
Control	171	231	60
Control	137	163	26
Control	136	176	40
Control	165	203	38
Control	158	182	24
Control	173	226	53
Control	150	187	37
Control	176	210	34
Experimental	174	238	64
Control	146	178	32
Control	188	210	22
Control	182	222	40
Control	190	238	48
Control	166	199	33
Control	156	199	43
Control	194	200	6

**Figure 4**Scaled Score ITBS Data

	Mean (avg.) Pretest ITBS 1 <sup>st</sup> Grade	Mean (avg.) Posttest ITBS 3 <sup>rd</sup> Grade	Mean (avg.) Difference
<i>Experimental (looping)</i>	161.444	205.556	44.1111
<i>Control (non-looping)</i>	161.555	199.582	38.0273
			Diff. = 6.0838 pts Scaled Score

**Figure 5**

GCTE \* GCTE \* GCTE \* GCTE \* GCTE



Oneway Anova

Summary of Fit

R Square	0.03095
R Square Adj	0.023259
Root Mean Square Error	11.92792
Mean of Response	38.88281
Observations (or Sum Wgts)	128

t-Test

	Difference	t-Test	DF	Prob> t
Estimate	-6.0838	-2.006	126	0.0470
Std Error	3.0328			
Lower 95%	-12.0856			
Upper 95%	-0.0821			

Assuming equal variances

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	1	572.546	572.546	4.0242
Error	126	17926.696	142.275	Prob>F
C Total	127	18499.242	145.663	0.0470

Means for Oneway Anova

Level	Number	Mean	Std Error
Control	110	38.0273	1.1373
Experimental	18	44.1111	2.8114

Std Error uses a pooled estimate of error variance

Means Comparisons

Dif=Mean[i]-Mean[j]	Experimental	Control
Experimental	0.00000	6.08384
Control	-6.08384	0.00000

Alpha= 0.05

Comparisons for each pair using Student's t

	Experimental	Control
t		
1.97899		
Abs(Dif)-LSD		
Experimental	-7.86840	0.08206
Control	0.08206	-3.18292

Positive values show pairs of means that are significantly different.

GCTE \* GCTE \* GCTE \* GCTE \* GCTE

## Figure 6

### Definition of Terms

<i>Control</i>	The matched sample group of 16 students for the STAR data. The remaining 119 third grade students not included in the experimental group for the ITBS data.
<i>Experimental</i>	The 16 students involved in the looping class, from second to third grade.
<i>P-Value</i>	A statistic measuring the probability that the results found could have been due to chance. The smaller the p-value, the greater the probability that the result was not due to chance alone. By convention, a relationship is judged statistically significant when the corresponding p-value is .05 or less.
<i>Gain Score</i>	Difference between a posttest and pretest score.
<i>Grade Equivalent</i>	A norm-referenced score: the grade and month of the school year for which a given score is the actual or estimated average, based on a ten month school year.
<i>Scaled Score</i>	A student's location on an achievement continuum, used to measure a student's yearly progress within each subject area.
<i>Mean</i>	The average of scores.

## Conclusions

My research findings correspond to research done previously on the looping model. Two researchers, Yang (1997) and Burke (1997), both discovered that looping had a positive effect on student achievement test scores as well as student attitudes towards school. Evidence of student reading achievement gains in Figures 2 and 5 support their findings. My research supports the theory that there is a direct positive correlation between looping and reading achievement. The five-month average difference between looping and non-looping student STAR test scores, and the six-point average difference in ITBS scaled scores, shows that the teaching strategy is a powerful one that may be worth implementing. The probability of this difference occurring by chance is less than .05 (see definition of p-value). The STAR p-value= 0.0168 and the ITBS p-value= 0.0470 which implies that the looping strategy is an effective way to increase student achievement.

### Implications

This research indicated that looping had a positive impact on student achievement. I also observed that looping had many positive side effects throughout the year. At the beginning of the new school year, I sensed that my students had less anxiety. When we began working on academics they seemed more confident and were more willing to take risks and offer help to their peers. They came to school feeling a strong sense of community and responsibility to one another. They came to school already knowing classroom routines and teacher expectations. Much less time was wasted at the beginning of the new school year, and resulted in increased time learning.

GCTE \* GCTE \* GCTE \* GCTE \* GCTE

My hope is that the data from this research will encourage other educators to explore the looping model and record their results in an effort to accumulate more research data on this subject. In the future, if more data is collected, more principals and educators may be persuaded to try the looping model of teaching in an effort to increase student achievement with the added possible benefit of enhanced student perceptions about school. Another attractive feature to looping is the lack of financial cost, with strong returns on student achievement and attitudes.

In the future, I would like to go back and compile data on the attendance patterns for both groups. If I were to conduct this research again in the future, I would include an attitude survey in order to compile some qualitative data to support my beliefs that looping does in fact have a direct, positive impact on student achievement and social attitudes about school.

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