

# Flippen Reading Connection Research Study

East Liverpool, Ohio

*Excerpt from Full Study Submitted*

2004-2005 Analysis

*“The Reading Connection has been the highlight of my eighteen years in education...Some of my students’ test scores have improved as much as one year in only four months.”*

Vicki Coalmer, LaCroft Elementary, East Liverpool

## Introduction:

This study highlights two separate studies undertaken in East Liverpool, one on Vicki Coalmer and Beckie Provenzano's students, and another on Linda Rudibaugh's students.

### *Coalmer/Provezano Findings*

Vicki Coalmer and Beckie Provenzano tracked reading progress for their students by testing each student's ability in 4 different manners.

The first manner consisted of determining each student's Word Recognition (measured as instructional grade level) in October 2004 and again in April 2005 using the Qualitative Reading Inventory II.

The second manner consisted of calculating student Comprehension aptitude (measured as instructional grade level) by way of the Qualitative Reading Inventory II in October 2004 and May 2005.

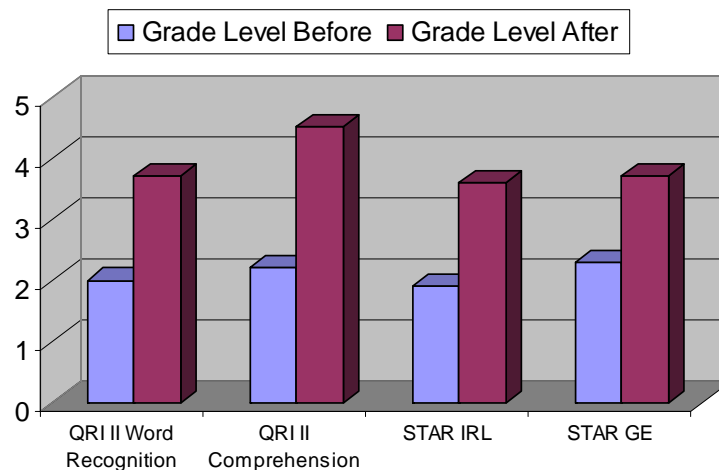
The third manner consisted of using the computerized STAR test to determine each student's Instructional Reading Level in October 2004 and May 2005. IRL is defined as the grade level at which the student is at least 80% proficient at comprehending reading material and recognizing words.

The fourth manner consisted of using the computerized STAR test to determine each student's Grade Equivalent in October 2004 and May 2005.

The data was analyzed by a Ph.D. statistician using a one-tailed paired t-test.

**Statistically significant results** were found for all four measures. In addition, all of the p-values were less than 0.001, meaning that the probability of finding these positive results by chance is less than 1 in 1,000. These p-values are substantially less than the standard p-values accepted in the professional literature of 0.05 or 0.10, which means that the results meet an even more rigorous threshold of proof.

The following is a graphical summary of the statistically significant findings.



### *Rudibaugh Findings*

Linda Rudibaugh was certified to teach the Flippen Reading Connection and undertook her research while teaching the process in the fall of 2004. Since she was at the initial stages of the process, her study focused more on attitudinal factors.

She administered student surveys approximately 2 months after process initiation to each of her 8 full-time students, comprised of various questions to capture student attitudes, confidence levels, and feelings, all of which have been proven to directly affect performance.

### Student QRI II Word Recognition Progress:

The following results show the students' instructional grade level change as measured by the Qualitative Reading Inventory II – Test Data for Word Recognition. Measurements were taken in October 2004 and April 2005.

Student Number	Grade Level BEFORE	Grade Level AFTER
1	1 <sup>st</sup>	3 <sup>rd</sup>
2	2 <sup>nd</sup>	4 <sup>th</sup>
3	1 <sup>st</sup>	3 <sup>rd</sup>
4	4 <sup>th</sup>	6 <sup>th</sup>
5	2 <sup>nd</sup>	3 <sup>rd</sup>
6	3 <sup>rd</sup>	4 <sup>th</sup>
7	3 <sup>rd</sup>	5 <sup>th</sup>
8	1 <sup>st</sup>	2 <sup>nd</sup>
9	2 <sup>nd</sup>	3 <sup>rd</sup>
10	1 <sup>st</sup>	3 <sup>rd</sup>
11	2 <sup>nd</sup>	5 <sup>th</sup>

### Paired Student's *t*-Test: Results

$t = -8.86$   
degrees of freedom = 10

**The p-value is less than 0.001, meaning the difference is statistically significant at the 0.001 level.**

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Data BEFORE: Number of items= 11  
Mean = 2.00  
95% confidence interval for Mean: 1.328 thru 2.672  
Standard Deviation = 1.00  
High = 4.00 Low = 1.00  
Median = 2.00  
Average Absolute Deviation from Median = 0.727

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Data AFTER: Number of items= 11  
Mean = 3.73  
95% confidence interval for Mean: 2.927 thru 4.527  
Standard Deviation = 1.19  
High = 6.00 Low = 2.00  
Median = 3.00  
Average Absolute Deviation from Median = 0.909

### Student QRI II Comprehension Progress:

The following results show the students' instructional grade level change as measured by the Qualitative Reading Inventory II – Comprehension exam. Measurements were taken in October 2004 and May 2005.

Student Number	Grade Level BEFORE	Grade Level AFTER
1	0*	4 <sup>th</sup>
2	3 <sup>rd</sup>	4 <sup>th</sup>
3	2 <sup>nd</sup>	4 <sup>th</sup>
4	3 <sup>rd</sup>	5 <sup>th</sup>
5	2 <sup>nd</sup>	5 <sup>th</sup>
6	3 <sup>rd</sup>	4 <sup>th</sup>
7	3 <sup>rd</sup>	5 <sup>th</sup>
8	2 <sup>nd</sup>	4 <sup>th</sup>
9	3 <sup>rd</sup>	5 <sup>th</sup>
10	2 <sup>nd</sup>	5 <sup>th</sup>
11	1 <sup>st</sup>	4 <sup>th</sup>

\* represents an actual score of Primer, which is lower than a first grade level.

### Paired Student's *t*-Test: Results

$t = -8.33$   
degrees of freedom = 10

**The p-value is less than 0.001, meaning the difference is statistically significant at the 0.001 level.**

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Data BEFORE: Number of items= 11  
Mean = 2.18  
95% confidence interval for Mean: 1.522 thru 2.841  
Standard Deviation = 0.982  
High = 3.00 Low = 0.0  
Median = 2.00  
Average Absolute Deviation from Median = 0.727

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Data AFTER: Number of items= 11  
Mean = 4.45  
95% confidence interval for Mean: 4.104 thru 4.805  
Standard Deviation = 0.522  
High = 5.00 Low = 4.00  
Median = 4.00  
Average Absolute Deviation from Median = 0.455

### Student STAR Instructional Reading Level Progress:

The following results show the students' IRL (Instructional Reading Level) results, defined as the grade level at which a student is at least 80% proficient at recognizing words and comprehending reading material with assistance (teacher-guided). Measurements were taken in October 2004 and May 2005. The scores are presented as Grade Equivalents, representing how a student's test performance compares with that of other students nationally. For example, a score of 3.4 indicates that the score is equal to that of a typical third grader after the fourth month of school.

Student Number	STAR Score BEFORE	STAR Score AFTER
1	0*	3.0
2	2.1	3.4
3	2.2	3.5
4	3.8	4.3
5	2.3	4.1
6	2.0	3.5
7	2.4	4.0
8	0.1	2.6
9	2.0	3.6
10	1.1	3.9
11	2.6	3.3

\* represents an actual score of PP, standing for Pre-Primer, the lowest of all possible scores.

### Paired Student's *t*-Test: Results

$t = -7.03$   
degrees of freedom = 10

**The p-value is less than 0.001, meaning the difference is statistically significant at the 0.001 level.**

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Data BEFORE: Number of items= 11  
Mean = 1.87  
95% confidence interval for Mean: 1.132 thru 2.613  
Standard Deviation = 1.10  
High = 3.80 Low = 0.0  
Median = 2.10  
Average Absolute Deviation from Median = 0.736

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Data AFTER: Number of items= 11  
Mean = 3.56  
95% confidence interval for Mean: 3.229 thru 3.899  
Standard Deviation = 0.499  
High = 4.30 Low = 2.60  
Median = 3.50  
Average Absolute Deviation from Median = 0.373

### Student STAR Grade Equivalency Results:

The following results show the students' instructional grade level change as measured by the STAR computerized reading proficiency exam. Measurements were taken in October 2004 and May 2005. The scores are presented as overall Grade Equivalents, representing how a student's test performance compares with that of other students nationally. For example, a score of 3.4 indicates that the score is equal to that of a typical third grader after the fourth month of school.

Student Number	STAR Score BEFORE	STAR Score AFTER
1	1.5	2.9
2	2.3	3.4
3	2.4	3.5
4	3.9	4.8
5	2.4	4.5
6	2.3	3.5
7	2.5	4.3
8	1.6	2.6
9	2.3	3.6
10	1.8	4.3
11	2.6	3.3

### Paired Student's *t*-Test: Results

$t = -8.34$   
degrees of freedom = 10

**The p-value is less than 0.001, meaning the difference is statistically significant at the 0.001 level.**

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Data BEFORE: Number of items= 11  
Mean = 2.33  
95% confidence interval for Mean: 1.898 thru 2.756  
Standard Deviation = 0.639  
High = 3.90 Low = 1.50  
Median = 2.30  
Average Absolute Deviation from Median = 0.391

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Data AFTER: Number of items= 11  
Mean = 3.70  
95% confidence interval for Mean: 3.237 thru 4.163  
Standard Deviation = 0.690  
High = 4.80 Low = 2.60  
Median = 3.50  
Average Absolute Deviation from Median = 0.527

**Rudibaugh Student Survey Results:**

*Statement 1:*

**BEFORE** joining the Flippen Reading Connection, when I thought about my day at school I felt...

<b>Student Number</b>	<b>Response</b>
1	Unhappy
2	Sad
3	Unhappy
4	Not Sure
5	Not Sure
6	Happy
7	Unhappy
8	Not Sure

**AFTER** joining the Flippen Reading Connection, when I think of my day at school I feel...

<b>Student Number</b>	<b>Response</b>
1	Happier
2	Happier
3	Happier
4	Happier
5	Happier
6	Happier
7	Happier
8	Happier

*Statement 2:*

**BEFORE** joining the Flippen Reading Connection, when I was in reading class I felt...

<b>Student Number</b>	<b>Response</b>
1	Scared
2	Scared
3	Scared
4	Unhappy
5	Unhappy
6	Happy
7	Not Sure
8	Unhappy

**AFTER** joining the Flippen Reading Connection, when I am in reading class I feel...

<b>Student Number</b>	<b>Response</b>
1	Happier
2	Happier
3	Happier
4	Happier
5	Happier
6	Happier
7	Happier
8	Not Sure

Statement 3:

**BEFORE** joining the Flippen Reading Connection, when I was asked to read I felt...

<b>Student Number</b>	<b>Response</b>
1	Scared
2	Scared
3	Scared
4	Scared
5	Scared
6	Happy
7	Embarrassed
8	Scared

**AFTER** joining the Flippen Reading Connection, when I am asked to read I feel...

<b>Student Number</b>	<b>Response</b>
1	Not Sure
2	Not Sure
3	A Little Better
4	Not Sure
5	A Little Better
6	Happier
7	Super Happy
8	Not Sure

*Statement 4:*

**BEFORE** joining the Flippen Reading Connection, inside I felt...

<b>Student Number</b>	<b>Response</b>
1	Scared
2	Sad
3	Unhappy
4	Sad
5	Not Sure
6	Happy
7	Unhappy
8	Not Sure

**AFTER** joining the Flippen Reading Connection, inside I feel...

<b>Student Number</b>	<b>Response</b>
1	Not Sure
2	Still Sad*
3	A little more confident
4	Happier
5	Happier
6	Happier
7	Happier
8	Not Sure

*\* Student explained this was due to circumstances outside of class*

**Selection of Rudibaugh Survey Response Sheets:**

Student 7, BEFORE

Draw a circle around the picture that most closely matches the way you feel.

**BEFORE** joining Reading Connections, when I thought about my day at school, I felt:

happy   not sure   unhappy   sad   scared

**BEFORE** joining reading Connections, when I was in reading class, I felt:

happy   not sure   unhappy   sad   scared

**BEFORE** joining Reading Connections, when I was asked to read, I felt:

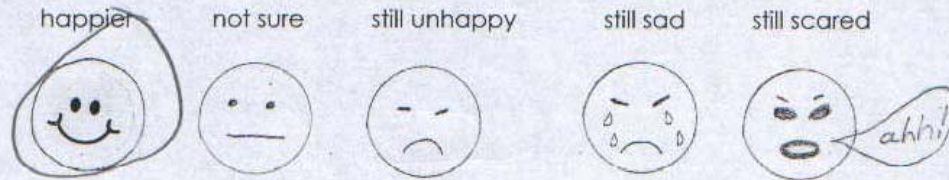
happy   not sure   unhappy   sad   scared

**BEFORE** joining Reading Connections, inside I felt:

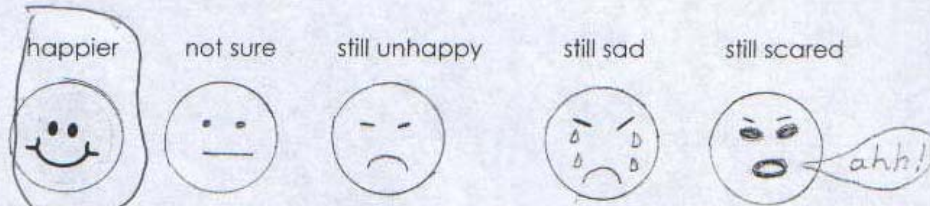
happy   not sure   unhappy   sad   scared

Student 7, AFTER

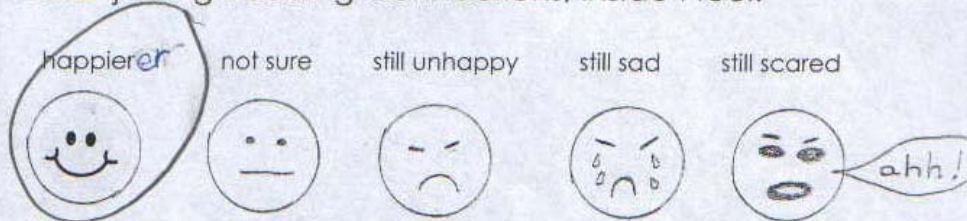
**AFTER** joining Reading Connections, when I think of my day at school, I feel:



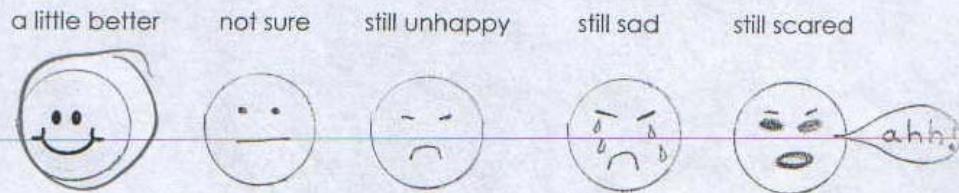
**AFTER** joining Reading Connections, when I am in reading class, I feel:



**AFTER** joining Reading Connections, inside I feel:



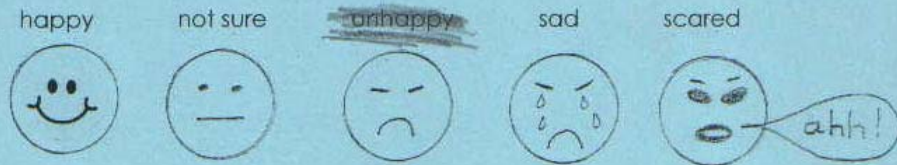
**AFTER** joining Reading Connections, when I am asked to read, I feel:



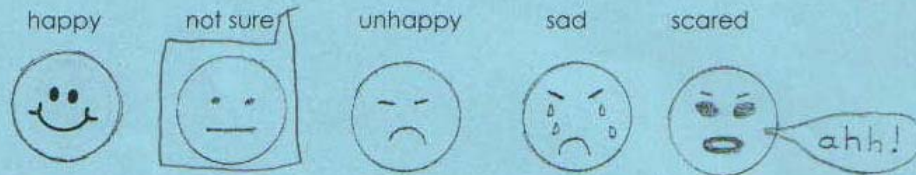
Student 5, BEFORE

Draw a circle around the picture that most closely matches the way you feel.

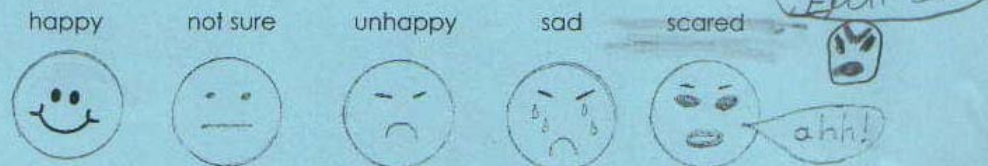
**BEFORE** joining Reading Connections, when I thought about my day at school, I felt:



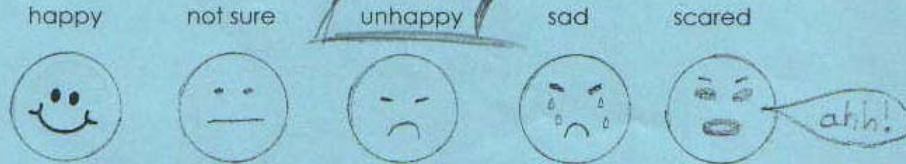
**BEFORE** joining reading Connections, when I was in reading class, I felt:



**BEFORE** joining Reading Connections, when I was asked to read, I felt:

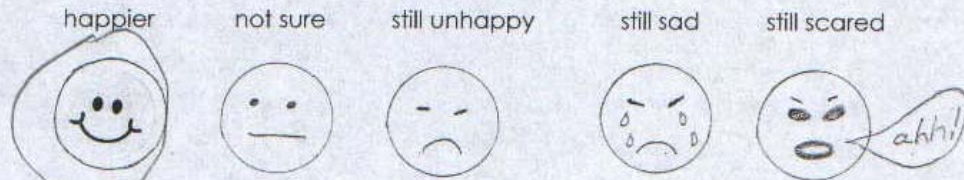


**BEFORE** joining Reading Connections, inside I felt:

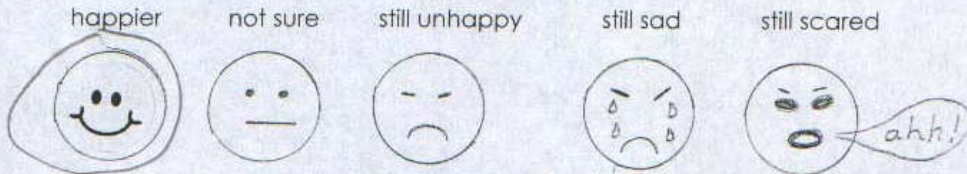


Student 5, AFTER

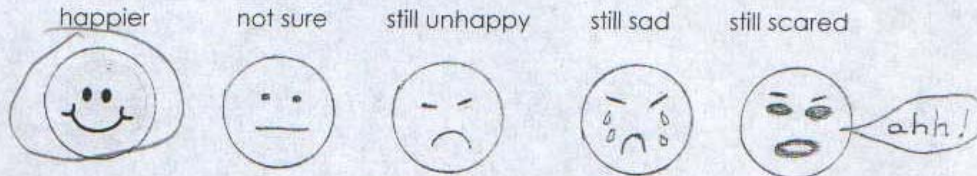
**AFTER** joining Reading Connections, when I think of my day at school, I feel:



**AFTER** joining Reading Connections, when I am in reading class, I feel:



**AFTER** joining Reading Connections, inside I feel:



**AFTER** joining Reading Connections, when I am asked to read, I feel:

