8-1997

Do Students in the Fifth-Grade Benefit from the Writing Workshop with Regard to their Scores on the New York State Fifth-Grade Writing Test?

Lisa E. Torrell
The College at Brockport

Follow this and additional works at: https://digitalcommons.brockport.edu/ehd_theses

Part of the Curriculum and Instruction Commons, Educational Methods Commons, and the Language and Literacy Education Commons

To learn more about our programs visit: http://www.brockport.edu/ehd/

Repository Citation
Torrell, Lisa E., "Do Students in the Fifth-Grade Benefit from the Writing Workshop with Regard to their Scores on the New York State Fifth-Grade Writing Test?" (1997). Education and Human Development Master's Theses. 1187.
https://digitalcommons.brockport.edu/ehd_theses/1187

This Thesis is brought to you for free and open access by the Education and Human Development at Digital Commons @Brockport. It has been accepted for inclusion in Education and Human Development Master’s Theses by an authorized administrator of Digital Commons @Brockport. For more information, please contact kmyers@brockport.edu.
Do Students in the Fifth-Grade Benefit from the Writing Workshop with Regard to Their Scores on the New York State Fifth-Grade Writing Test?

Thesis

Submitted to the Graduate Committee of the
Department of Education and Human Development
State University of New York
College at Brockport
in Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Education

by
Lisa E. Torrell

State University of New York
College at Brockport
Brockport, New York
August 1997
SUBMITTED BY:
Lisa E. Foureil 7/20/97
Candidate

APPROVED BY:
Thesis Advisor
Date
Second Faculty Reader
Date
Director of Graduate Studies
Date
**Abstract**

There are two very different approaches being used in classrooms today with regards to teaching writing. A traditional approach to teaching writing might include using a grammar textbook and/or a workbook. A holistic approach to teaching writing believes that students learn to write by writing. Students move through the entire writing process, from prewriting to publishing, for each piece of work they create. This is called the Writing Workshop. More current research was needed to determine if one approach was more beneficial than the other.

In this longitudinal study, both approaches were taught in separate classrooms for an entire school year. The scores on the end of the year writing test were compared with one another to see if there was a statistically significant difference between the two teaching methods. Computed $t$ (2.44) was greater than Table $t$ (2.019) indicating a statistically significant difference between Group A and Group B. Therefore, the null hypothesis was rejected.

Statistically, then, the Writing Workshop seems to have positively affected the writing skills of the fifth-grade students. Those students participating in the intervention group demonstrated more growth in their writing by the end of the year than the control group showed.
# Table of Contents

## CHAPTER I

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement of the Problem</td>
<td>1</td>
</tr>
<tr>
<td>Purpose</td>
<td>1</td>
</tr>
<tr>
<td>Need for the Study</td>
<td>2</td>
</tr>
<tr>
<td>Research Question</td>
<td>2</td>
</tr>
<tr>
<td>Null Hypotheses</td>
<td>2</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>3</td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td>4</td>
</tr>
</tbody>
</table>

## CHAPTER II

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review of the literature</td>
<td>6</td>
</tr>
<tr>
<td>Writing Research</td>
<td>6</td>
</tr>
<tr>
<td>The Traditional Approach to Teaching Writing</td>
<td>8</td>
</tr>
<tr>
<td>The Writing Process</td>
<td>11</td>
</tr>
<tr>
<td>The Writing Workshop</td>
<td>15</td>
</tr>
<tr>
<td>The Use of Literature</td>
<td>21</td>
</tr>
<tr>
<td>Summary</td>
<td>22</td>
</tr>
</tbody>
</table>
# Table Of Contents (Continued)

## CHAPTER III

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design of the Study</td>
<td>24</td>
</tr>
<tr>
<td>Purpose</td>
<td>24</td>
</tr>
<tr>
<td>Methodology</td>
<td>24</td>
</tr>
<tr>
<td>Subjects</td>
<td>24</td>
</tr>
<tr>
<td>Materials/ Instruments</td>
<td>24</td>
</tr>
<tr>
<td>Procedures</td>
<td>25</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>27</td>
</tr>
</tbody>
</table>

## CHAPTER IV

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis of the Data</td>
<td>29</td>
</tr>
<tr>
<td>Purpose</td>
<td>29</td>
</tr>
<tr>
<td>Research Question</td>
<td>29</td>
</tr>
<tr>
<td>Findings and Interpretations</td>
<td>29</td>
</tr>
<tr>
<td>Conclusions</td>
<td>31</td>
</tr>
</tbody>
</table>

## CHAPTER V

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion</td>
<td>32</td>
</tr>
<tr>
<td>Purpose</td>
<td>32</td>
</tr>
</tbody>
</table>
# Table of Contents (Continued)

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary</td>
<td>32</td>
</tr>
<tr>
<td>Implications for Teachers</td>
<td>33</td>
</tr>
<tr>
<td>Further Research</td>
<td>34</td>
</tr>
<tr>
<td>References</td>
<td>35</td>
</tr>
<tr>
<td>Appendices</td>
<td>37</td>
</tr>
</tbody>
</table>
CHAPTER I

Statement of the Problem

There are two very different approaches being used in classrooms today with regards to teaching writing. A traditional approach to teaching writing might include using a grammar textbook and/or a workbook. Students may be asked to diagram sentences, review sentence types and sentence beginnings, learn subject/verb agreement by correcting sentences on a worksheet, or write an essay on a teacher directed topic.

A holistic approach to teaching writing believes that students learn to write by writing. The instructor teaches subskills through short lessons called mini-lessons. The students generate their own topics of choice. They move through the entire writing process, from prewriting to publishing, for each piece of work they create. Students write daily, and they learn how to critique their own writing as well as others. This is called the Writing Workshop. More current research is needed to determine if one approach is more beneficial than the other.

Purpose

The purpose of this study was to determine if the Writing Workshop is more effective in improving student writing than a traditional, textbook approach to teaching writing.
**Need for the Study**

With many school districts nationwide creating higher standards for achievement, educators are looking toward what current research says is the best approach to meeting the needs of all students. Writing is particularly important because it impacts students across all curricular areas. The Writing Workshop has been highly acclaimed by many famous researchers. It focuses on teaching skills through the writing process. More current research is needed to determine if this program positively impacts test scores when compared to a more traditional philosophy about teaching writing.

**Research Question**

Do students in a fifth-grade, Writing Workshop classroom score higher than a traditional writing classroom on the New York State Fifth-Grade Writing Test?

**Null Hypothesis**

There will be no statistically significant difference between the mean scores on the New York State Fifth Grade Writing Test for the two treatment groups.
Definition of Terms

Rubric- An assessment technique that is used when scoring something holistically. It generally has a scale of #1-4, 1 being the lowest and 4 being the highest score. Criteria are given with each number so a student knows exactly what needs to be accomplished in order to earn a 4, 3, 2, or 1. (See Appendix A)

Assimilate- To absorb or incorporate; to make similar; cause to assume a resemblance

Undirected Writing- Students choose their own writing topics.

Mini-lessons- Five minute lesson on one specific skill

Authentic- Natural; real life experiences; meaningful

Cooperative Learning- Group work to achieve a common goal
Limitations of the Study

One limitation of this study is that the rubric scoring guide used for the writing test is subjective in nature. It is common for one rater to score a paper a “3”, while another person may score it a “4”. A third rater is only used if there is a two point discrepancy. For instance if one person rates a test a “2” while the other rates it a "4", another person's opinion would be needed.

Another limitation of this study is the possibility that the subjects in this study had previous teachers (K-4) who used the opposite approach to teaching writing than their current fifth grade teacher. For example it may impact the results slightly if a student had teachers in kindergarten, first, second, third, and fourth grade who used the Writing Workshop, and then he/she was placed in the traditional classroom for fifth grade.

A final limitation of this study is that the students in the Writing Workshop were used to choosing their own topics for their writing throughout the school year. Unfortunately, in New York State the topics for the writing test are dictated to the children. Fortunately, the school district where this study took place applied for a variance in 1996. They were granted it, and it gave the students three topics to choose from for
each part of the test. Students still could not make up a topic of their own, however, it did give them more of a choice in their writing.

(See Appendix A)
CHAPTER II

Review of the Literature

The review of the literature in this section will focus on research in writing, process writing, the Writing Workshop, the use of literature, as well as the traditional approach to teaching writing.

Writing Research

Research on process writing began in the 1970s and came to the elementary schools in the 1980s (Thomas, 1992). "In many classrooms in the United States, writing is not natural. It is a mechanistic process that has all the hows without the whys" (Routman, 1991 p. 164). Routman's research has shown that writing is thinking and through the practice of writing students learn to write and think more clearly. She believes that writing must become central to our teaching and integrated across all disciplines. Researcher Frank Smith (1981, a) concurs. "I think there can be little debate that writing as children are expected to learn and to practice it in many classrooms is a highly unnatural activity" (p. 792). He believes that it is a myth that students need to learn to write before they actually write. "Both reading and writing can only be learned in the
course of reading and writing" (p. 794). He feels that most of us are learning to write our entire lives.

In 1986, the National Assessment of Educational Progress reported that only 12 percent of eighth graders and 19.4 percent of eleventh graders could write a convincing letter to a prospective summer employer, only 18 percent of both eighth and eleventh graders could do an adequate job of imaginative writing that did not rely upon a given story framework, and in general, American students could not express themselves well enough to ensure that their writing would accomplish the intended purpose (Atwell, 1989, p. 1).

It may be a coincidence that this same year, 1986, Lucy Calkins' book *The Art of Teaching Writing* was published, but the book couldn't have come out at a better time. Calkins was convinced that teachers needed to move toward a more authentic way to teach writing. She was tired of schools that complained that students didn't want to write when the schools themselves were stifling the child's natural reasons for writing. These were the same schools that buried the student's desire to write with kits and manuals full of prepackaged writing-stimulants. These teacher-led activities did not help the student become personally involved in writing. Calkins states, "We, too, would yawn and roll our eyes if we were asked to write about our summer vacation or our favorite food" (p. 4).

Rasinski (1988) is in agreement with Calkins. He argues that "State mandated objectives, incessant testing, and close adherence to the
textbook have taken away a great deal of choice and opportunities to capitalize on personal interests of teachers and students" (p.398).

Rasinski studied his own six year old son's reaction to transitioning from a kindergarten full of choices, authentic writing experiences, and literature to a first grade classroom that was textbook driven and dominated by curriculum. He found that his son's desire to learn, spell, read, and write was greatly diminished. He did learn how to do all of these things, however, his love for learning was lost. "Mikey changed his conception of reading and writing from satisfying his own needs to satisfying the curriculum" (p. 397).

**The Traditional Approach to Teaching Writing**

Teachers who believe in traditional teaching methods generally believe that textbooks, workbooks, worksheets, and activity kits are the best way to teach most subjects. They feel that the skill and drill methods and rote memorization of grammar or spelling rules are the most effective way to teach writing.

In these classrooms, programs control the teaching, therefore they consequently control the learning. "All programs fractionate learning
experience" (Smith, 1981, b, p. 637). These teachers generally break information down into subskills, teaching isolated facts out of the context of good literature. "Students are expected to learn by rote rather than by meaningfulness which is the basis of spoken language learning" (p. 637).

Students in these classrooms generally view writing as an externally imposed task, meaning a task in which they do not need to perform unless someone tells them to do it. "They do not see adults writing, and their teacher audience at school corrects their writing rather than responding to its message" (Bissex, 1981, p. 787).

When it comes to writing, current research has suggested that self selection is more beneficial than teacher directed topics for writing. However, some educators have problems with this approach. "They aren't convinced that continuous self selection will result in competence that transfers to writing assignments such as essay questions and reports" (Lee, 1987).

Even with an abundance of current research backing up the process writing model, Calkins believes that most teachers are still teaching writing the old fashioned way. "In most American classrooms, the teacher's focus is not on the child, but on a unit of study, the textbook, the prepackaged curriculum" (Calkins, 1986, p. 6).
In Hillocks' study, (as cited in Lee, 1987) he analyzed sixty studies on student writing. Surprisingly, he found that the process writing approach to teaching writing skills wasn't as effective as the methods that emphasized teacher directed skill lessons. However, he did conclude that the process writing approach was more effective for teaching creative writing than more traditional methods such as those that emphasize grammar rules.

Lee (1987) agrees that a more balanced approach is needed between the two philosophies. She believes that teachers need to take a closer look at the research, and that perhaps more, not less, teacher direction is needed in writing instruction. Through her study, she found it possible to strike a balance between assigned topic writing and self selection.

Evans (1967) also warns teachers not to automatically assume that all children can learn to write by undirected writing. He believes that students may not take writing seriously if they view it as self-indulging. He claims that mastery of writing skills can only come after limits are imposed. He recommends that teachers should assign students to write precise statements that do not address the writers' feelings. "Objective papers require the student to roll up his sleeves and get down to the
business of learning how to use language in a serious and controlled manner” (p. 527).

One reason teachers may not follow current research trends could be because of year end test scores. Drill and practice may produce higher test scores. Educators must ask themselves what is more important to them, high test scores or producing students who can think creatively and critically (Long & Bulgarella, 1985). Hemphill (1981) concurs. He states, "Politics and tradition have more influence over the way teachers teach reading and writing than do experts in language arts education" (p. 643). He compared a "student-centered, integrated" classroom with a "content-centered, segmented" classroom. In his results section, he could not declare that the students in the "student-centered, integrated" classroom had superior gains in language ability. However, the children were not behind the "content-centered" classroom in any area either. His study proves that once again, teachers need to look at what is important to them when deciding on how they are going to instruct their students.

**The Writing Process**

Theorists describe the writing process in many ways. Calkins (1986) prefers using the terminology rehearsal, drafting, revision,
and editing.

She describes rehearsal as a way of life. "It is a time when writers map possible lines of development for their pieces, or sketch out the patterns in their ideas" (p. 17). During this stage, writers may be reading, discussing, or observing one another. They may be creating an outline or a word web. Writers are focusing on organizing their ideas at this time.

Calkins compares drafting to an artist at a sketch pad. She writes, "We make light, quick lines; nothing is permanent" (p. 17). This is the stage when students only need to put their ideas down on paper. They do not need to worry about their spelling or grammar at this time, as that will come later. Premature corrections can break the flow of writing and thinking (Perl, 1979).

The next stage of the writing process is called revision. This is quite possibly the most difficult stage to teach as well as to learn. Calkins describes revision as just that, seeing again. Writers reread what they have written, re-seeing what they have said. "The writing becomes a lens. I revise, and by moving the words on the page and looking through them at my unfolding subject, I explore, and discover what I have to say" (p. 17). To be more specific, during this stage writers cross out sections, cut and paste, insert phrases, and move details around. They try to make
their writing clearer without getting into the spelling or grammar. That comes next.

The final stage Calkins discusses in her book is called the editing stage. The term editing can have negative connotations. It may bring to mind childhood memories of red penned "Run-ons" or "Awk." This stage, however, can be the easiest one of all. The major decisions are already completed. Spelling can easily be corrected. Calkins describes editing as trimming, carving, and linking sentences. Writers begin to replace examples with single, more vivid details. The text quickly becomes stronger and sounds better. Again the writer tightens, links, and clarifies what is being said. "Now, ready for the last touches, I pull back from the page and make believe that I am someone else. I read it objectively, with a critical eye. I change a word, delete a line, and it is ready for final copy" (p. 18).

There are different viewpoints on the writing process, however. Researcher Regie Routman (1991) wrote that she never goes neatly through the steps when she drafts her own pieces. She believes that teachers need to allow time for students to figure out what works best for them. "I meander back and forth through stages. I percolate, write a draft, revise, percolate, rewrite the draft, percolate, begin a new draft,
revise a previous draft some more, and so on" (p. 164). She doesn't follow any sequential steps. She lets the writing lead her.

Emig (as cited in Lee, 1987) agrees that a writer doesn't necessarily follow a sequence of steps when producing a piece, rather she feels that writers are reflective. Her research showed that the reflective writer rereads while writing. The writer considers how words, phrases, and sentences sound together, and then makes the necessary changes.

The writing process is different for children at different developmental stages. "Teachers can expect certain imbalances to appear at different stages in a writer's life because of what children are prepared to see in their writing" (Graves, 1983, p. 175). The writing process in first grade is going to be similar, yet it will be altogether different from a fifth grader's point of view. Graves' research on young children's composing showed that there is a general order in which children's practice and concept about what is important to them emerges.

First, young writers are mostly concerned about their spelling and handwriting. Many children can put this behind them by the age of seven, others may be fixated on this for their entire lives. Next, he found that what teachers emphasize in the classroom becomes what the children
believe. If the teacher cannot get beyond the mechanics, then the child will not learn to take ownership of his/her writing. In addition, from a practice standpoint, all children function in the categories of spelling, motor aesthetics (handwriting/penmanship), conventions of writing (grammar, punctuation, word usage), topic information, and revision.

All five of these categories are present in the life of any writer, child or adult. Each of the categories can grow and improve over the writer's lifetime. Graves believes, "The ideal is for conventions to be put behind the writer in order to focus on information and one's own intentions exclusively" (p. 178).

There are more aspects of the writing process that weren't mentioned above. Peer revising, peer editing, conferencing, and final copying will be discussed in the next section on the Writing Workshop.

The Writing Workshop

What is a workshop? The American Heritage Dictionary of the English Language defines it as, "A group of people who meet regularly for a seminar in some specialized field." A workshop in a classroom is
student-centered in the sense that the course content is made up of individuals pursuing their own ideas (Murray, 1982).

This type of approach to teaching language arts came out of a growing concern about writing in our schools. Studies showed that although students had a writing utensil in hand for almost half of the school day, only three percent of the day was spent composing. Most of the school day was spent on chores such as copying from the blackboard. When students did compose, 88% of the time their only audience was the teacher who corrected their work and handed it back to them (Calkins, 1985). In a Writing Workshop teaching becomes deeply personal. "Children write about what is alive and vital and real for them, and their writing becomes the curriculum (p. 8).

The climate of the classroom in a Writing Workshop contributes to the students willingness to write (Routman, 1991). This means the physical as well as the emotional aspects of the classroom need to foster creativity in writing. Atwell describes this well in her "Framework of Beliefs About Writing":

1.) Writers need regular chunks of time.
2.) Writers need their own topics.
3.) Writers need response.
4.) Writers learn mechanics in context.

5.) Children need to know adults who write.

6.) Writers need to read.

7.) Writing teachers need to take responsibility for their knowledge and teaching. (Atwell, 1987, p. 17-18)

The physical appearance of the classroom is typically set up to foster cooperative learning. Desks may be set up in groups rather than rows. A comfortable reading center, with an abundance of literature, may be found in the corner of the room. A writing center stocked with supplies is a necessity. This center is usually where one would find publishing materials such as wall paper and cardboard.

Conferencing is a large aspect of the Writing Workshop. Not only do teachers conference with students, but students confer with one another. Moffet (1976) describes peer-conferencing as, "Any small group of students who exchange or read aloud their papers in order to try out their compositions and make suggestions to each other for improvement" (p. 154).

Students need the opportunity to discuss their writing with others. "Writing in general often requires other people to stimulate discussion, to
provide spellings, to listen to choice phrases, and even just for companionship in an activity which can be so personal and unpredictable that it creates considerable stress" (Smith, 1981, a, p. 796). Smith also believes that the ability to write alone is not always easy, and that it comes with experience.

Atwell agrees. Her research has shown that learning is more likely to happen when students are grouped so that as they are actively engaged together, they may learn from one another (Atwell, 1987). The Writing Workshop is specifically designed to foster this kind of cooperative learning.

Crowhurst's data (1979) showed that students developed realistic standards for their own stories by comparing their work to their classmates. They also received immediate, varied feedback from their peers. The amount of feedback was much greater than a teacher could ever give to a student. Perhaps most importantly, lower achievers picked up good ideas from good writers. "Reading the writing of others in order to comment usefully is a valuable practice in critical reading for a real purpose" (p. 761).

Perhaps one of the most important aspects of the Writing Workshop is that teachers not only model writing for their students, but
they are expected to compose as well. In the classrooms of the Vermont Writing Program, teachers write while students are writing. They share their writing problems with their students and ask for help from their audience of critical listeners (Bissex, 1981). Smith concurs. "Children will learn to write and enjoy writing only in the presence of teachers (or other adults) who themselves write and enjoy writing" (Smith, 1981, a, p. 797).

When teachers write they may discover inconsistencies between how they write and how they teach their students to write (Atwell, 1987). Logan (1985) found that as a result of engaging in the same poetry writing activities as his students, he increased his own understanding of the difficulties of the writing process.

It should be mentioned that the writing process described in the previous section is an integral part of the Writing Workshop. Students may work through the entire process in order, or they may jump back and forth between stages. Generally, classroom teachers prepare two writing folders for the students. One folder holds the child's "Works in Progress". This may have one story started or many pieces that are being continued. The other folder holds their "Finished Pieces". This is a collection of the student's work for the entire school year.
The role of interest and choice is very important to a student learning to read as well as write. In the Writing Workshop, students chose their own topics to write about. They generally choose topics that they have a great deal of knowledge about. Fluent readers and writers become fluent by reading and writing often, from things of their own choosing and for their own purposes (Hickman, 1977).

Graves (1979) also studied the results of student control over their own writing in a two year case study. His findings were consistent with the findings from Atwell (1987) and Calkins (1986). Graves discovered that when children control the writing process, they write far beyond traditional expectations. They also become better spellers, and perhaps most importantly, they take pride in their writing.

Students in a Writing Workshop classroom can look forward to a share session at the end of the period. Audience is a large motivator for a student's desire to write. "Students become eager to share their writing with one another. They know they are writing to produce reading, not exercises for the teacher" (Bissex, 1981, p. 787). It is important for students to have an interested audience that responds, both critically and positively, to the content of their writing.
The Use of Literature

It would be a mistake to leave out reading and the use of literature in the workshop. Reading and writing are as inter-connected as jigsaw puzzle pieces. We learn to write by reading. "The only source of knowledge sufficiently rich and reliable for learning about written language is the writing already done by others" (Smith, 1981, a, p. 795).

By studying authors and different styles, students gain insights into how authors compose structure, images, and emotions into their writing (Atwell, 1982). Similarly, Logan (1985) found that when talking with writers who were also readers, they used popular literature as a valuable writing resource. When trying this approach with his own students, he discovered, "My students have learned to study and then assimilate the techniques of other writers, be they classmates or professional authors" (p. 755).

In addition, children's literature is a wonderful source for teaching mini-lessons. It is filled with examples of all kinds of writing. Some characters tell their stories through poems, essays, letters, journals, and so on (Tway, 1981). One specific example is teaching quotation marks by reading dialogue between two characters. An excellent book for this is
called Mrs. Frisby and the Rats of NIMH, by Robert C. O'Brien. Another example would be to teach the poetry skill of alliteration through the use of Grahm Base’s children’s book, Anamalia.

**Summary**

In summary, Noyce (1979) describes her recipe for writing instruction in the elementary years. This recipe matches the goals of the Writing Workshop. She believes this method should have five basic ingredients:

1.) guided exercise in description, explanation, and definition

2.) a continual process of experimenting and revising

3.) exposure to excellence in writing

4.) an image of the teacher as a writer

5.) recognition and valuing of writing. (p. 255)

Avery’s words in “Laura’s Legacy” (1988) as she expresses her gratitude toward the Writing Workshop following the untimely death of one of her six-year old students will conclude this section.
I'm so glad that I teach the way I do. I'm so glad that I really knew Laura. I know that I can never again teach in a way that is not focused on children. I can never again put a textbook or a 'program' between me and the children. I'm glad all of us knew Laura so well. I'm glad the classroom context allowed her to read real books, to write about real events and experiences in her life, to share herself with us and to become part of us and we of her. Laura left a legacy. Part of that legacy is six little published books and the five-inch-thick stack of paper that is her writing from our daily writing workshops. When we read her words, we hear again her voice and her laughter (p. 111).
CHAPTER III

Design of the Study

Purpose

The purpose of this study was to determine if the Writing Workshop is more effective in improving student writing than a traditional, textbook approach to teaching writing.

Methodology

Subjects:

The participants for this longitudinal study were fifth grade students in the same public elementary school in suburban, western New York. Twenty two students from two heterogeneously grouped classrooms comprised this sample (N=44). There were eight gifted students and one remedial writer in each classroom. The remaining students weren't labeled for any special needs. This sample was comprised of 24 girls and 20 boys.

Materials/ Instruments:

Students in the Writing Workshop classroom kept a daily writing folder entitled "Works in Progress" as well as a "Finished
Pieces Folder.” They used a composition notebook for a journal. The teacher used the materials in the Appendix as well as other materials to teach mini-lessons. The teacher’s manual was *In the Middle* by Nancie Atwell. Students in the traditional classroom used the Houghton Mifflin text book entitled, *English*. The New York State holistic scoring rubric were used to determine test scores.

**Procedures:**

In the experimental group, the Writing Workshop was implemented in its entirety throughout the school year. Students generated their own topics. The writing process: prewriting, drafting, self editing and revising, peer editing and revising, teacher conferencing, final copying, and publishing was used for all student work. Students learned how to improve their own work through conferences and mini-lessons. The Writing Workshop was scheduled four to five days a week for 45-60 minutes each session. The workshop was structured with a 3-5 minute mini-lesson, writing for 30-40 minutes, and a share session of 5-10 minutes. Journal writing was also incorporated at least three days a week. Various
other types of authentic writing were completed throughout the school year, such as poetry, letter writing, research reports, recipes, interviews, surveys, editorials, essays, book and movie reviews, plays, jokes, riddles, and cartoons. The use of trade books, read aloud novels, children's literature, and newspapers were used to teach skills for most mini-lessons. This study did not look at spelling other than through the editing process because spelling is only one small component of the scoring guide for the New York State Writing Test.

The control group was a traditional, fifth grade classroom. They mainly learned writing skills through the use of a grammar textbook and a workbook. They wrote stories, essays, and research reports throughout the year. Some of these topics were self selected, but most were teacher generated. Students had writing instruction 4-5 days a week, however, they may only have created pieces of writing one or two days a week.

In order to ensure validity, both classrooms practiced for the state test the same number of times the month prior to the test. The test was administered on two separate days. Part I was given first. This part is always a nonfiction story. The children were
given three topics to choose from to complete this section. They all related to their lives in some way. For example, one topic was to write a composition of about 150 words telling about their favorite class trip. The classes could brainstorm ideas together before they started writing, but as soon as they started to write, they were on their own. The state also enclosed a "Notes" section below the topic. This provided a basic outline to help students organize their thoughts. This was not a timed test.

Part II was administered one week later. The directions are the same for Part II as they are for Part I. The only difference is that this part is always a fictional story in which their imaginations become very active. An example of one topic was to write a composition of about 150 words telling about a day that they woke up with superpowers. They were asked to tell about how they could use their superpowers to make the world a better place. (See Appendix A for all of the various topics)

**Data Analysis**

The data were analyzed using a $t$ test to determine if there was a statistically significant difference between the mean test scores of the two
classrooms. The writing samples were holistically scored using the New
York State writing rubric (See Appendix A). Each sample for Part I and
Part II were scored by two raters. In case of any inconsistencies, a third
rater was used. The tests was scored by teachers from another
elementary building. These raters did not know the students whose
exams they were scoring.

The teachers were trained in holistic scoring methods before they
started to score the exams. The rating took place in a quiet staff
development room in the district. Experts were on hand if there were any
questions about stories a rater may have been unsure about. The
teachers were told to read the stories once or twice and score them on
the overall satisfaction of the piece. The teachers scored the pieces on
whether or not the student stayed on topic, sentence variety, vivid
language, interest level, organization, details, description, and
mechanics. They were not to consider spelling or handwriting when
rating a piece of writing.
CHAPTER IV

Analysis of the data

Purpose

The purpose of this study was to determine if the Writing Workshop is more effective in improving student writing than a traditional, textbook approach to teaching writing.

Research Question

Do students in a fifth-grade, Writing Workshop classroom score higher than a traditional writing classroom on the New York State Fifth-Grade Writing Test?

Findings and Interpretations

The fifth grade students in this study took the New York State Writing Test in May of 1997. The tests were scored holistically using a rubric. Scores ranged from 0-4, 4 being the highest. Two raters scored Part I, and two different raters scored Part II. Therefore, the total scores had a range from 0-16, 16 being a perfect score.

To determine significance in this study the researcher ran a t test for independent samples. Group A is the control group. These children were taught writing the traditional way, through the use of a grammar text
book. Group B is the experimental group. They received the treatment through the use of the Writing Workshop.

**Table I**

Results of the Two Sample Groups

<table>
<thead>
<tr>
<th>Sample</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A (22)</td>
<td>12.32</td>
<td>.87</td>
<td>2.44</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Group B (22)</td>
<td>13.27</td>
<td>1.57</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$t$ (df=40) = 2.021; $p<.05$

To apply the $t$ test the researcher first listed the total scores for each member of Group A and Group B. The mean was found for both populations. Group A had an overall mean score of 12.32 while Group B had a mean of 13.27. This shows a difference of .95.

The standard deviation was computed for both groups using the sum of the scores. Group A had a standard deviation of .87 while group B's standard deviation was reported at 1.57.
The mathematical process of computing \( t \) was calculated by finding the sum of the squares for Group A and Group B, determining the degrees of freedom, and using the mean scores. A level of confidence was set at .05. The degrees of freedom were 42. Computed \( t \) value was 2.44. Table \( t \) for df 40 was 2.021. Computed \( t \) (2.44) was greater than Table \( t \) (2.019) indicating a statistically significant difference between Group A and Group B. Therefore, the null hypothesis was rejected.

**Conclusions**

Several observations can be made regarding the results of the testing done in May. First, it is interesting to note that the intervention group had three perfect scores, while the control group didn’t have anyone score perfectly on the test. Secondly, the mean test score for Group B was almost a whole point higher than Group A. Finally, a \( t \) test was completed. This analysis yielded a significant difference at the \( p < .05 \) level.

Statistically, then, the Writing Workshop seems to have positively affected the writing skills of the fifth-grade students. Those students participating in the intervention group demonstrated more growth in their writing by the end of the year than the control group showed.
CHAPTER V

Discussion

Purpose

The purpose of this study was to determine if the Writing Workshop is more effective in improving student writing than a traditional, textbook approach to teaching writing.

Summary

There are two very different approaches being used in classrooms today with regards to teaching writing. A traditional approach to teaching writing might include using a grammar textbook and/or a workbook. A holistic approach to teaching writing believes that students learn to write by writing. Students move through the entire writing process, from prewriting to publishing, for each piece of work they create. They write daily, and they learn how to critique their own writing as well as others. This is called the Writing Workshop. More current research was needed to determine if one approach was more beneficial than the other.

In this longitudinal study, both approaches were taught in separate classrooms for an entire school year. The scores on the end of the year writing test were compared with one another to see if there was a statistically significant difference between the two teaching methods.
Computed $t$ (2.44) was greater than Table $t$ (2.019) indicating a statistically significant difference between Group A and Group B. Therefore, the null hypothesis was rejected.

Statistically, then, the Writing Workshop seems to have positively affected the writing skills of the fifth-grade students. Those students participating in the intervention group demonstrated more growth in their writing by the end of the year than the control group showed.

**Implications for Teachers**

It appears that the use of the Writing Workshop helped students in the experimental group produce stronger writing samples when compared to children using the traditional method. This shows that if the process of teaching writing improves than the product of written work will improve. Students should be allowed to choose their own topics and genre for their writing. They should be allowed to write about their own experiences. If children are taught to work through the writing process then they will be better equipped to revise and edit their own work. This is not to say that grammar should not be taught. Through the Writing Workshop students are taught mini-lessons on grammar skills, rather than copying ten sentences from a text book.
Further Research

The longitudinal study described in this research has proven that the Writing Workshop positively impacts young student writers, however, further long term research is needed to show that year end test scores will improve significantly as a result of using this approach to teaching writing. Many parents, teachers, administrators, and members of the media are obsessed with comparing test scores from one school district with another. Teachers need to feel confident that their test scores will only improve by using the Writing Workshop. The results of this study will serve to back up existing research studies done in the area of process writing. It is now up to educators to take advantage of an approach to teaching writing that will benefit students in many different ways. Not only will the Writing Workshop improve their skills, but students will become excited about writing instead of considering it a tedious chore.
References


Appendices
Appendix A
EXPEel"ATIONS FOR WRITING WORKSHOP

PART I: YOUR ROLE

1. To come to class each and every day with your daily writing folder, in which you’ll keep all drafts of your pieces in progress.
2. To take care of your folder; it’s your text for this course.
3. To write every day and to finish pieces of writing.
4. To make a daily plan for your writing and to work at it during class and at home.
5. To find topics that you care about.
6. To take risks as a writer, trying new techniques, topics, skills, and kinds of writing.
7. To draft your prose writing in paragraphs.
8. To number and date your drafts of each piece.
9. To work hard at self editing your final drafts and to self edit in pen or pencil different in color from the print of your text.
10. To maintain your skills list and to use it as a guide in self editing and proofreading.
11. To make final copies legible and correct with decent margins.
12. To take care of the writing materials and resources provided you.
13. To make decisions about what’s working and what needs more work in pieces of your writing; to listen to and question other writers’ pieces, giving thoughtful, helpful response.
14. To not do anything to disturb or distract the teacher or other writers.
15. To discover what writing can do for you.

PART II: MY ROLE

1. To keep track of what you are writing, where you are in your writing, and what you need as a writer.
2. To grade your writing based on an analytic scale on a certain number of agreed upon pieces of writing.
3. To write every day and to finish pieces of writing.
4. To help you find topics you care about.
5. To prepare and present mini lessons based on what I see you need to know next.
6. To provide a predictable class structure in which you’ll feel free to take risks as a writer.
7. To organize the room so it meets your various needs as a writer.
8. To help you learn specific proofreading and editing skills.
9. To be your final editor.
10. To give your opportunities to publish your writing.
11. To photo copy finished pieces you want photocopied.
12. To provide you with the materials you need to write.

13. To listen to you and to respond to your writing by asking thoughtful, helpful questions; to help you listen and respond to other writers' pieces in thoughtful, helpful ways; to make a record of what happens in my conferencing with you.

14. To make sure no one does anything to disturb or distract you when you're writing or conferring.

15. To help you discover what writing can do for you.
Conference with a Friend

my story to:
what I learned or liked:
are some questions my friend had:
what I'm going to do now:

First Check

<table>
<thead>
<tr>
<th>Writer</th>
<th>Reader</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Needs work</td>
</tr>
<tr>
<td>Yes</td>
<td>Needs work</td>
</tr>
</tbody>
</table>

message clear?
problems go in order?

Second Check

<table>
<thead>
<tr>
<th>Writer</th>
<th>Reader</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Needs work</td>
</tr>
<tr>
<td>Yes</td>
<td>Needs work</td>
</tr>
</tbody>
</table>

teacher likes:
derector likes:

suggestions for revision:

Final Check

<table>
<thead>
<tr>
<th>Writer</th>
<th>Reader</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Needs work</td>
</tr>
<tr>
<td>Yes</td>
<td>Needs work</td>
</tr>
</tbody>
</table>

if I need help spelling:
problems:

Conference Worksheet

Author
Response Team 1.
2.

Directions:
1. The author reads the paper aloud to the team members.
2. The team takes turns and writes down what they like about the
   author's writing.
3. The team writes down questions they have about the author's writing or
   suggestions as to how the author can improve the story.
4. The author writes down how he or she will change the story to improve it.
   A. What did you like about the story? Why did you like these parts?
   1. 
   2. 
   3. 
   4. 
   5. 
   6. 
A. Give the author some suggestions as to how he or she can improve the
   story. Be specific.
   1. 
   2. 
   3. 
   4. 
   5. 
   6. 
A. The author should write what he or she will do to improve the story.

The student writing folder is the mainstay of writers workshop; the following
three forms are from a folder developed by Pam Adams, primary teacher,
School, Redwood City, CA.

Personal Writing Folder Record

Card No.
Student:
Grade:_______

Use the following
numbers and letters to
complete assignment
mode sections:

24. Reviews (Books)
25. Reviews (Film, TV)
26. Observations
27. Chapter of Novel
28. Interviews
29. Directions
30. Dictionaries
31. Reports
32. Position Statements
33. Booklets
34. Scripts
35. Cartoons
36. Articles
37. Broadcasts
38. Advertisements
39. Legends
40. Tall Tales
41. Monologues
42. Other

Some Possible Roles
A. Self
B. Specified Person
C. Specified Group
D. Friend
E. Classroom
F. Famous Person
G. Teacher
H. Other Authors
I. Public
J. Editor
K. Other

Some Possible Purposes
A. Record
B. Report/Harangue
C. Describe
D. Explain
E. Speculate
F. Summarize
G. Defend
H. Convinc/Argue
I. Apologize
J. Request
K. List/Category
L. Move
M. Compare/Contrast
N. Imagine

Writing Workshop Report

Possible topics for me to write about:

My titles
Work in progress
Final draft
Assign-
ment
code
Format
Roles
Audience
Purposes
Group or
individual
project
My personal
response to
the writing
project
Elements
I have
under-
control
WRITERS WRITE

A Sign for Your Classroom

Personal Narratives
Stories told By Families
Biographies
Research Reports
Book Reviews
Plays
News Stories
Children's Books
Games and Puzzles
Coloring Books with Text
Annotated Calendars
Poetry
Limericks
Rhymed Couplets
Acrostics
Free-Verse
Diaries and Journals
Petitions
Public Notices
Posters
Last Will and Testaments
Eulogies
Recipes
Interviews
Instructions
Lists and Notes
Contest Entries
Correspondence
Friendly Letters (to pen pals, teachers, friends and relatives)
Invitations
Letters to the Editor

Short Stories
Autobiographies
Essays
Textbooks
Record Reviews
Movies
Current Event Reports
Jokes and Riddles
Captions and Labels
Cartoons
Advertisements
Poetry written in the style of a favorite poet
Editorials and Opinions
Parodies
Song Lyrics
Learning Logs
Scripts
Skits
Plays
Radio Plays
Puppet Shows
Memoranda and Messages
Oral Histories
Rules and Regulations
Mottos and Slogans
Time Capsule Lists

From In The Middle
Nancie Atwell
QUESTIONS TO PRODUCE WRITING TOPICS

- What do I know?
- What don't I know about what I know?
- What do readers need to know about what I know?
- What do I need to know?
- What would I like to know?
- Who would I like to know?
- What would I like to do?
- What problems need solving?
- Who might have solutions to those problems?
- What have I read that I can't forget?
- What have I heard that I can't forget?
- What have I seen that I can't forget?
- What have I felt that I can't forget?
- What are the most important things which have happened to me?
- What do I fear?
- What title would make me buy a magazine or a book?
PREWRITING

* Start by choosing a subject.

  What do I know about?
  What do I care about?
  What have I experienced?

* Limit your subject to a manageable topic.

  Can I develop this topic in the space available?

* Think about your purpose for writing.

  To explain or inform?   To tell a story?
  To describe?           To persuade?

* Consider your audience.

  What does my audience already know about this topic?
  What would interest my audience about this topic?

* Decide upon an appropriate tone.

  What is my attitude toward my topic?
  How can I share that attitude with my audience?

* Gather ideas and details about your topic.

  What do I already know about this topic?
  How can I find out more about this topic?

* Group related ideas and details.

  How are these ideas and details similar?
  How are they different?

* Arrange your ideas and details logically.

  What order will be easiest for my audience to understand?

* Determine your main idea.
Leads

Simple- state the facts

Senic- create a picture with your words

Explanatory- explain your story idea

Newsy- the “scoop” inside information

Sensational- makes the piece a bit overblown; the reader would think “WOW!”

Argumentative- creates an opposing view
WRITING A FIRST DRAFT

* Try to establish an environment that promotes your best writing.

* Use the plan you developed through prewriting to guide your draft.

* Keep your audience, purpose, and tone in mind.

* Focus your thoughts on your main idea.

* Write freely, letting one thought stimulate another.

* Concern yourself with what you want to say, rather than with spelling, grammar, usage, and mechanics.

* Remember that writing is a dynamic process and that you may discover new ideas as you write.

* Be comfortable with your own writing style and set a pace that suits you.

* Remember that a first draft is only a beginning and that you will be able to improve on it later.

HBJ Harcourt Brace Jovanovich, Publishers
REVISING

* Consider the content of your draft.

Is the content appropriate for my purpose and audience?

Have I included enough details to support my main idea?

Do the sentences in my draft develop one main idea or create one main impression?

* Evaluate the organization of your draft.

Are my ideas arranged in an order easy for my audience to understand?

Have I used transitions and direct references to show my audience how ideas are related?

* Think about the style of your draft.

Is my word choice appropriate for my audience?

Does my word choice reflect the tone I want to convey?

Is my tone consistent?

Are my sentences clear and varied?

REVISION STRATEGIES

Use these three strategies to help you revise:

Read your draft aloud.

Allow some time to pass before you begin revising.

Ask someone else to respond to your draft.
Revising

Name ___________________________ Title ___________________________

Before writing a final copy, answer these questions:

1. The focus, or main idea, of my piece is ____________________________

2. Does my lead capture the interest of the reader? ______
   Change: ___________________________________________

3. Have I written clearly so that the reader can picture
   what I want them to know? ___________________________

4. Does my whole piece focus on the topic? ____________

5. Have I divided my piece into paragraphs as needed? ______
   Does each of my sentences express a complete thought? ______

6. Capitalization and punctuation have been checked? ______

7. I have checked and corrected all spelling. ____________

8. My rough or second draft has been proofed by ______

9. I am ready to write a final copy. ___________________________

____________________________________ Date

Staple this form with your evaluation sheet and all copies
of your piece. Return to teacher.
"Messing Up the Draft

Having a variety of materials available such as colored pencils or pens, scissors, tape or glue, etc., can help students in revising their work. The use of these materials could be modeled in revising the paragraph written on the blackboard or overhead projector.

Show students how to separate sections they want to move around by cutting them apart and taping them in the new order. Colored pencils can be used to identify major subjects and supporting material. Arrows, carets and other symbols can be color coded to show where material needs to be moved or added.

The use of carets, arrows, crossouts, and so on will teach the student that it is all right to "mess up" a first draft. They will see that information can be inserted, moved, added or deleted, by drawing arrows, using carets, crossing out words or sentences or attaching longer rewritten sections. What is important here is that students understand that there is nothing sacred about a first draft—and that even the teacher has to go through several drafts to reach the final copy.

The use of word processors in the school will relieve students of much of the onerous task of revision—that of recopying the whole composition. With a word processor, errors in mechanics and spelling can be corrected on the spot, sentence parts can be deleted or rearranged, and whole paragraphs reordered for better organization.
Revision Techniques

1. Put writing aside for awhile to gain distance.
2. Read piece aloud.
3. Cross out.
4. Be precise, strip down.
5. Energize language.
7. Cut and paste.
8. Keep audience and purpose in mind.
11. Be yourself--have confidence.
12. Use first person writing--your own voice.
13. Write to entertain yourself.
14. Use active verbs.
15. Eliminate adjectives/adverbs that are not necessary.
16. Use strong nouns.
17. Keep related words together.
18. Don't overstate--don't explain too much.
19. Omit needless words.
20. Clarify.
PROOFREADING

1. Is my paper neat, legible, and free from obvious corrections?

2. Have I spelled all words correctly?

3. Have I begun every sentence with a capital letter?
   Have I capitalized proper nouns and proper adjectives?

4. Have I included any sentence fragments or run-on sentences?

5. Have I ended each sentence with the correct punctuation mark? Have I used other punctuation marks correctly?

6. Do my subjects and verbs agree?

7. Have I used verb forms and verb tenses correctly?

8. Have I used subject and object forms of personal pronouns correctly?

9. Do my pronouns agree with their antecedents?

10. Have I used frequently confused words - such as _lie_ and _lay_, or _fewer_ and _less_ - correctly?

11. Have I used abbreviations correctly?

12. Have I correctly divided words at the end of lines?

13. Have I used indentations to show where new paragraphs begin?

14. Have I used proper margins?

* * * * * * * * * * * * * * * * * * * * * * * * * * * * *

HBJ Harcourt Brace Jovanovich, Publishers
AME

Proofreading Symbols

\ - Add letters or words.

\) - Add a period.

\$ - Capitalize a letter.

\' - Make a capital letter lowercase.

\- - Take out letters or words.

\| - Begin a new paragraph.

\\ - Add a comma.

\( - Trade the position of letters or words.

\) - Check spelling of this word
THE TEN
EDITING SKILLS

1. Taking stock of a manuscript
2. Cutting what’s not needed
3. Adding missing material
4. Improving order
5. Checking facts
6. Improving word choice
7. Improving sentences
8. Catching spelling mistakes
9. Checking punctuation
10. Preparing the final manuscript
When To Use Capital Letters
- the first word of every sentence
- the pronoun "I"
- all the main words in a title of a book or a movie
- words that show family relationships when used as a person name or part of a person's name.

Names of:
- people
- cities
- states
- countries
- continents
- rivers
- major bodies of water
- brand names of products
- school subjects followed by a number

When to Start New Paragraphs
- Indent the very first sentence of every story, essay.
- Begin a new paragraph to describe one person, thing, or one main idea.
- Every time a new person speaks, even if he/she only says a word or sentence, indent and begin a new paragraph.
- Begin a new paragraph when there is a change in setting.
- Begin a new paragraph when there is a change in time.

How to Use Punctuation
Quotation Marks - Use them to show the exact words of the speaker. Punctuation should go inside the quotation marks.

examples - "How are you today?" Sue asked.
Tom replied, "I'm great!"
"Glad to hear it," Sue remarked.
### Dialogue Verbs
- said
- remarked
- asked
- replied
- answered
- exclaimed
- yelled
- cheered
- screamed
- shouted
- sighed
- sighed
- pleaded
- begged
- suggested
- added
- reminded
- repeated

### Color Words (adjectives)
- red
- blue
- yellow
- pink
- gray
- tan
- maroon
- transparent
- translucent
- opaque

#### Color Words (adjectives)
- green
- orange
- purple
- violet
- indigo
- lavender
- violet
- cream
- peach
- rose

### Shape Words (adjectives)
- square
- diamond
- pentagon

### Words That Describe How People Look (adjectives)
- beautiful
- handsome
- elegant
- repulsive
- fat
- skinny
- slender
- young
- old
- funny
- weird
- intelligent
- bald
- blond
- brunette
- serious
- freckle-faced
- smart
- tall
- short
- plump

### Words That Describe How People Act (adjectives)
- polite
- kind
- obnoxious
- cool
- boastful
- scared
- rude
- bossy
- childish
- mature
- idiotic
- nosy
- stupid

### Size Words (adjectives)
- big
- gigantic
- enormous
- humongous
- huge
- little
- tiny
- miniature
- minuscule
- microscopic
- colossal

### Sound Words
- ouch
- eek
- grr
- oops
- crash
- ding dong
- kaboom
- boing
- splash
- boom
- woof, woof
- gurgle

Remember to Use Your Five Senses When Doing Descriptive Writing: Sight, Smell, Sound, Taste, and Touch
- rough
- smooth
- soft
- grimy
The ways peers can question peers:

I need to know more about...
Do you really need the part about...
You might want to work on...
One thing you said that really interested me was...
What you say makes me think about...
One question I have is...
The main idea of your essay seems to me to be...
Hi. This is __________________. I am correcting your story titled _____________________________.
It is about _____________________________.
On a scale of 0-4, I give it a 

0 1 2 3 4

because it has the following:

___legibility
___complete sentences
___correct spelling
___correct capitalization
___correct punctuation
___good content-stuck to the topic
___good paragraphs
___good vocabulary
___good support of the main idea
___exciting colorful language

You are to be congratulated because

_________________________________________________________________

You appear to need to work on 

_________________________________________________________________

because

Thank you for sharing your ideas with me!

Signature __________________
HAVING A WRITING CONFERENCE WITH YOURSELF

Read your piece to yourself, at least once but probably several times. The best writers spend a lot of time reading over and thinking about what they’ve written.

Your next job is to make some decisions about what’s down there on that paper: the weaknesses of the piece, the parts that need more work, and its strengths, those parts that work so well you want to do more with them. In other words, your next job is to have a writing conference with yourself.

A writer’s biggest question is always, “What is it I am trying to say here?” The questions below may help you find and shape what you’re trying to say.

QUESTIONS ABOUT INFORMATION

Do I have enough information?

-What’s the strongest or most exciting part of the piece and how can I build on it?
-Have I shown, not told, by using examples?
-Is there any part that might confuse the reader? Have I described the scene and people well enough that a reader will know what I mean?
-Does this piece need conversation? Did people talk? Have I directly quoted the words they said?

Do I have too much information?

-What parts aren’t needed, don’t add to my point or story? Can I delete them?
-Is this piece really about? Are there parts that are about something else? Can I cut them?
-Do I have more than one story here? Which is the one story I really want to tell?
-Is this a bed to bed piece, going through every event of the day? Can I focus on just the important part of the day and delete the rest?
-Is there too much conversation? Too many fussy little details? Have I explained too much?

QUESTIONS ABOUT LEADS

-Does my lead bring my reader right into my piece, into the main ideas or action?
-Where does the piece really begin? Can I cut the first paragraph? The first two? The first page?

QUESTIONS ABOUT CONCLUSIONS

-Does my conclusion drop off and leave my reader wondering?
- Does my conclusion go on and on?
- How do I want my reader to feel at the end of the piece?
- Does this conclusion do it?
- What do I want the reader to know at the end of the piece?
- Does this conclusion do it?

QUESTIONS ABOUT TITLES

- Does my title fit what the piece is about?
- Is my title a grabber? Would it make a reader want to read my piece?

QUESTIONS ABOUT STYLE

- Have I cluttered my piece with unnecessary adjectives and adverbs?
- Have I said something more than once?
- Have I used any word(s) too often?
- Are any sentences too long and tangled. Too brief and choppy?
- Have I paragraphed enough to give my reader's eyes some breaks?
- Have I broken the flow of my piece by paragraphing too often?
- Is my information in order? Is this the sequence in which things happen?
- Have I grouped together ideas related to each other?
- Does the voice stay the same - first person participant? (I did it) or third person observer (he or she did it)?
- Does the verb tense stay the same - present (it's happening now) or past (it happened before)?
Teacher's Checklist
Writing Evaluation

Student's name

Writing assignment

Organization: Has definite sequence

Content: Ideas support subject

Ideas: Clear and well-developed

Usage: Words used correctly

Structure: Sentences complete & varied

Spelling: Mistakes corrected

Punctuation: Rules followed

Capitalization: Rules followed

Handwriting: Neat and legible

Comments:

Super/Good /Needs Work

Student's Writing Checklist

My name ____________________________

My writing project ______________________

Date started ___________ Date completed __________

Editing team members’ initials (or partner’s name)

☐ These were my prewriting activities: _________________________

☐ This was the purpose of my draft: ____________________________

☐ I edited my draft to make it better and got help from _________________________

☐ I proofread my work and had this person read it to check for errors I missed: _________________________

☐ I recopied my work neatly and published it this way:

☐ I think I did a _____________ job on my writing project

because ____________________________________________

Next time I will ________________
Dear Student,

Soon you will be taking a very important writing test. I have seen that over the past six months you have written some interesting stories that were wonderful. I know you'll do well if you read over this letter and remember a few strategies.

Before you write, brainstorm twenty to thirty minutes in your test booklet. Organize these ideas and sequence them.

Draft the piece by skipping lines and use the front of your paper only. Write freely and let your mind create a visual picture of what happened. Make it like telling an important story. Read over carefully what you have written. Ask yourself "Is my story clear?" Make the necessary changes. Can the reader see, hear, feel, touch, and know what happened? Take time here to make changes. Try vivid language, stronger verbs, and sentence joining to make your story better. ex. asked - questioned, said - exclaimed, big- as large as an elephant, wind blew - wind whistled through the swaying trees. Change words and check to see if all the sentences don't begin with I, so, then, and but. PUT IN PARAGRAPHS WHEN THE IDEA CHANGES OR THE SPEAKER IF YOU USE CONVERSATION. IF YOU DON'T KNOW HOW TO USE QUOTES, THEN DO NOT, I REPEAT, DO NOT USE THEM.

Now that your story makes sense and has a flow, read it 3 times and check for your sentences. WHEN YOUR VOICE STOPS, IT USUALLY MEANS THAT THERE SHOULD BE A PERIOD. Also, put in quotations, commas, capital letters, and check for spelling. ex: My mother yelled, "Get off the phone!" "I will go with you to the party," replied Mrs. Coon.
If you are pleased and have checked well, you can begin the final copy. THIS SHOULD BE THE BEST SAMPLE OF YOUR HANDWRITING.

Write large enough, and work SLOWLY!!!

You should have taken (2 to 3 hours) to finish the test. THIS IS NOT A TIMED TEST. I will be reading all of your papers and you will have the score by June 16. Remember: Take this test and have fun writing a story of your own. Part I is true, while Part II is pretend.

GOOD LUCK!!!
Writing Test for New York State Elementary Schools

Grade 5

Rating Guide

The rating guide contains the detailed directions and criteria for rating student responses. All raters should become familiar with the detailed directions and rating criteria before beginning to rate student responses.

Directions for Rating Student Responses

When rating student responses, follow the procedure outlined below:

1. Familiarize yourself with the system your school is using for processing the answer papers and recording the test scores.

2. Have a test booklet for Part 1 and for Part 2 on hand. Read both tasks carefully. Note exactly what is required.

3. Carefully review the criteria established for each of the four score levels of the rating scale and for a zero paper. These criteria are given in the chart on the back of this sheet. Note that each of the four score levels represents a wide range of writing ability.

4. Meet with other raters to discuss the tasks and the criteria. (It would be helpful to use a set of student responses as a training exercise in this meeting.) When you are sure that you clearly understand the tasks and the rating criteria, you are ready to begin to rate the student responses.

While the Part 1 task encourages writing that is generally related to the actual experiences of elementary school students and the Part 2 task encourages writing that is more creative or imaginative, some degree of interpretation is allowable. For example, if students are asked to tell about taking care of a pet, a story about an imaginary pet would be acceptable.

Keep in mind that students are not required to use their notes for every statement or question provided in the NOTES section. In addition, the order of the questions and statements only suggests an organizational plan. Students may organize their responses differently.

5. For each part of the test that you rate, read each student's response quickly, keeping in mind the task and the criteria for each score level of the rating scale. No more than two minutes should be needed to read a student's response.

6. Decide what score level is appropriate: 4, 3, 2, 1, or 0.

7. Record the score in the appropriate place on a separate rating sheet. Do not record the score on the student's answer paper.

The reading and rating of student responses should be done quickly once the task and the criteria established for the scale have been internalized. You should not spend time agonizing over a student's response. However, you should read the responses superficially; some responses may require a second reading to determine the appropriate score. After reading and rating a number of responses, you will find it helpful to stop and review the criteria in the chart before continuing with the rating.
### Criteria for Rating Student Responses

<table>
<thead>
<tr>
<th>Level 4</th>
<th>Level 3</th>
<th>Level 2</th>
<th>Level 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develops the assigned topic in an interesting and imaginative way</td>
<td>Develops the assigned topic using an acceptable plan of organization</td>
<td>Attempts to develop the assigned topic but demonstrates weakness in organization and may include digressions</td>
<td>Minimally addresses the assigned topic but lacks a plan of organization</td>
</tr>
<tr>
<td>Demonstrates a logical plan of organization and coherence in the development of ideas</td>
<td>Demonstrates satisfactory development of ideas through the use of adequate support material</td>
<td>Demonstrates weakness in the development of ideas with little use of support material</td>
<td>Does not use support material in the development of ideas or uses irrelevant material</td>
</tr>
<tr>
<td>Develops ideas fully through the use of support material (examples, reasons, details, explanations, etc.) that is relevant and appropriate</td>
<td>Uses some sentence variety</td>
<td>Demonstrates sentence sense but has little sentence variety</td>
<td>Demonstrates a lack of sentence sense</td>
</tr>
<tr>
<td>Shows skillful use of sentence variety</td>
<td>Uses appropriate language</td>
<td>Occasionally uses inappropriate or incorrect language</td>
<td>Frequently uses inappropriate or incorrect language</td>
</tr>
<tr>
<td>Uses specific, vivid language</td>
<td>Makes errors in mechanics that do not interfere with communication</td>
<td>Makes errors in mechanics that interfere with communication</td>
<td>Makes errors in mechanics that seriously interfere with communication</td>
</tr>
<tr>
<td>Makes few or no errors in mechanics</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Zero Paper

Is totally unrelated to the topic  

Is illegible, i.e., includes so many indecipherable words that no sense can be made of the response  

Is incoherent, i.e., words are legible but syntax is so garbled that no sense can be made of the response  

or
Grade 5
WRITING TEST
NEW YORK STATE ELEMENTARY SCHOOLS

SATURDAY, MAY 6, 1997—9:15 a.m.

__________________________  Sex: □ Male  □ Female
__________________________  City or P.O. _______________________

Part 1

THE STUDENT

This is a test to find out how well you write. The test has two parts. Today you take Part 1. Take your time and work carefully. You will have about two hours, which should be enough time for you to prepare your composition. However, you will be allowed more time if you need it. You must hand in the test booklet and scrap paper along with the final copy of your composition.

NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO.
For Part 1 of the test, you are to write about the topic in the box below.

Students usually go on a class trip at some time during their school years.

Write a composition of about 150 words telling about a class trip you enjoyed.

**S:** (Use this section to help you think about and plan your composition.)

When did your class trip take place?

__________________________________________________________________________

__________________________________________________________________________

Where did you go?

__________________________________________________________________________

__________________________________________________________________________

What did you do and saw on the class trip?

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
What made the trip enjoyable?

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________

_____________________________________________________________
Grade 5
WRITING TEST
FOR NEW YORK STATE ELEMENTARY SCHOOLS

TUESDAY, May 6, 1997 — 9:15 a.m.

Student ________________________________  Sex:  □ Male  □ Female

School ________________________________  City or P.O. _______________________

Part 1
TO THE STUDENT
This is a test to find out how well you write. The test has two parts. Today you will take Part 1. Take your time and work carefully. You will have about two hours, which should be enough time for you to prepare your composition. However, you will be allowed more time if you need it. You must hand in the test booklet and scrap paper along with the final copy of your composition.

The student may choose to do this topic if he/she does not like topic on New York State test handed out.

You may use dictionary and/or thesaurus.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
Directions: For part 1 of this test, you are to write about the topic in the box below.

Think about your favorite sport you like to watch or play. Persuade someone who doesn’t like it to try it.

Write a composition of about 150 words telling about this favorite sport.

OTES: (Use this section to help you think about and plan your composition.)

What is the sport or hobby you like to watch or play?

Why should someone else try it?
Think how you might end your composition.

Preparing your composition, remember to:

- Write your first draft on scrap paper. You may use all or only some of the NOTES and you may use them in a different order.
- Read carefully what you have written.
- Make any changes that will improve your first draft.
- Write your final copy on the answer paper given to you by your teacher. Use a pen to write your final copy.
- Draw a line through any mistake you may make when you are writing your final copy. Make the correction and continue on with your final copy. You do not need to begin a new final copy.
- Read your final copy before you hand it in to make sure you have not made any copying mistakes.
Grade 5
WRITING TEST
FOR NEW YORK STATE ELEMENTARY SCHOOLS

TUESDAY, May 6, 1997 — 9:15 a.m.

Student ____________________________________ Sex: ☐ Male ☐ Female
School ________________________________ City or P.O. __________________________

Part 1
TO THE STUDENT
This is a test to find out how well you write. The test has two parts. Today you will
take Part 2. Take your time and work carefully. You will have about two hours, which
should be enough time for you to prepare your composition. However, you will be
allowed more time if you need it. You must hand in the test booklet and scrap paper
along with the final copy of your composition.

The student may choose to do this topic if he/she does not like topic on New York
State test handed out.

You may use dictionary and/or thesaurus.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.


**Sections:** For part 1 of this test, you are to write about the topic in the box below.

---

Describe a time when you had to show courage or responsibility.

Write a composition of about 150 words telling about when you had to show courage or responsibility.

---

**TES:** (Use this section to help you think about and plan your composition.)

Describe what happened.

---

Explain what you did, and why.

---
Think how you might end your composition.

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

preparing your composition, remember to:

Write your first draft on scrap paper. You may use all or only some of the NOTES and you may use them in a different order.

Read carefully what you have written.

Make any changes that will improve your first draft.

Write your final copy on the answer paper given to you by your teacher. Use a pen to write your final copy.

Draw a line through any mistake you may make when you are writing your final copy. Make the correction and continue on with your final copy. You do not need to begin a new final copy.

Read your final copy before you hand it in to make sure you have not made any copying mistakes.
Grade 5
WRITING TEST
FOR NEW YORK STATE ELEMENTARY SCHOOLS

Wednesday, May 13, 1997—9:15 a.m.

Name ____________________ Sex: □ Male □ Female

School ____________________ City or P.O. ____________________

Part 2

THE STUDENT

Today you will take Part 2 of the writing test. Take your time and work carefully. You will have about two hours, which should be enough time for you to prepare your story. However, you will be allowed more time if you need it. You must hand in the booklet and scrap paper along with the final copy of your story.

NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO.
For Part 2 of the test, you are to write about the topic in the box below.

One day you noticed a strange-looking mirror lying on the ground, and you picked it up.

Write a story of about 150 words telling what happened after you picked up the mirror.

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * >:

(Use this section to help you think about and plan your story.)

cribe the mirror.

what happened after you picked up the mirror.
nk how you might end your story.

Jaring your story, remember to:

to your first draft on scrap paper. You may use all or only some of the NOTES and you may them in a different order.
carefully what you have written.
ke any changes that will improve your first draft.
te your final copy on the answer paper given to you by your teacher. Use a pen to write your copy.
w a line through any mistake you may make when you are writing your final copy. Make the ection and continue on with your final copy. You do not need to begin a new final copy.
ed your final copy before you hand it in to make sure you have not made any copying takes.
Grade 5
WRITING TEST
FOR NEW YORK STATE ELEMENTARY SCHOOLS

TUESDAY, May 13, 1997 — 9:15 a.m.

Student ____________________________ Sex: □ Male □ Female

School _____________________________ City or P.O. __________________________

Part 2

TO THE STUDENT
This is a test to find out how well you write. The test has two parts. Today you will take Part 2. Take your time and work carefully. You will have about two hours, which should be enough time for you to prepare your composition. However, you will be allowed more time if you need it. You must hand in the test booklet and scrap paper along with the final copy of your composition.

The student may choose to do this topic if he/she does not like topic on New York State test handed out.

You may use dictionary and/or thesaurus.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
sections: For part 2 of this test, you are to write about the topic in the box below.

One day a magic ______ flew in your bedroom window and told you that you could make one wish.

Write a composition of about 150 words telling about that wish.

**T****ES:** (Use this section to help you think about and plan your composition.)

Tell what flew in your bedroom window and what you wished for.

Describe what happened.
Think how you might end your story.

preparing your composition, remember to:

Write your first draft on scrap paper. You may use all or only some of the NOTES and you may use them in a different order.

Read carefully what you have written.

Make any changes that will improve your first draft.

Write your final copy on the answer paper given to you by your teacher. Use a pen to write your final copy.

Draw a line through any mistake you may make when you are writing your final copy. Make the correction and continue on with your final copy. You do not need to begin a new final copy.

Read your final copy before you hand it in to make sure you have not made any copying mistakes.
Grade 5
WRITING TEST
FOR NEW YORK STATE ELEMENTARY SCHOOLS

TUESDAY, May 13, 1997 — 9:15 a.m.

Student ____________________________ Sex: □ Male □ Female

School ____________________________ City or P.O. __________________

Part 2
TO THE STUDENT
This is a test to find out how well you write. The test has two parts. Today you will take Part 2. Take your time and work carefully. You will have about two hours, which should be enough time for you to prepare your composition. However, you will be allowed more time if you need it. You must hand in the test booklet and scrap paper along with the final copy of your composition.

The student may choose to do this topic if he/she does not like topic on New York State test handed out.

You may use dictionary and/or thesaurus.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
Directions: For part 2 of this test, you are to write about the topic in the box below.

You woke up one morning and had SUPER powers. What would they be and how would you use them to make the world better?

Write a composition of about 150 words telling about your super powers and how you would change the world.

OTES: (Use this section to help you think about and plan your composition.)

What super powers did you choose and why?

Tell how you chose to change the world and how it makes the world better.
Think how you might end your composition.

---

Preparing your composition, remember to:

1. Write your first draft on scrap paper. You may use all or only some of the NOTES and you may use them in a different order.

2. Read carefully what you have written.

3. Make any changes that will improve your first draft.

4. Write your final copy on the answer paper given to you by your teacher. Use a pen to write your final copy.

5. Draw a line through any mistake you may make when you are writing your final copy. Make the correction and continue on with your final copy. You do not need to begin a new final copy.

6. Read your final copy before you hand it in to make sure you have not made any copying mistakes.
Appendix B
# Raw Scores

New York State Fifth Grade Writing Test  
Control Group A

<table>
<thead>
<tr>
<th>Student</th>
<th>Score (x1)</th>
<th>x1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11</td>
<td>121</td>
</tr>
<tr>
<td>2</td>
<td>14</td>
<td>196</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>7</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>8</td>
<td>14</td>
<td>196</td>
</tr>
<tr>
<td>9</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>10</td>
<td>11</td>
<td>121</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>12</td>
<td>13</td>
<td>169</td>
</tr>
<tr>
<td>13</td>
<td>13</td>
<td>169</td>
</tr>
<tr>
<td>14</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>15</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>16</td>
<td>11</td>
<td>121</td>
</tr>
<tr>
<td>17</td>
<td>13</td>
<td>169</td>
</tr>
<tr>
<td>18</td>
<td>13</td>
<td>169</td>
</tr>
<tr>
<td>19</td>
<td>13</td>
<td>169</td>
</tr>
<tr>
<td>20</td>
<td>14</td>
<td>196</td>
</tr>
<tr>
<td>21</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>22</td>
<td>+12</td>
<td>+144</td>
</tr>
</tbody>
</table>

\[ n=22 \quad \text{Ex}=271 \quad \text{Ex}^1 = 3,355 \]

\[ x^1=12.32 \]
### Raw Scores

New York State Fifth Grade Writing Test
Intervention Group B

<table>
<thead>
<tr>
<th>Student</th>
<th>Score (x2)</th>
<th>x2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>225</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
<td>225</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>7</td>
<td>15</td>
<td>225</td>
</tr>
<tr>
<td>8</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>9</td>
<td>13</td>
<td>169</td>
</tr>
<tr>
<td>10</td>
<td>14</td>
<td>196</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>13</td>
<td>16</td>
<td>256</td>
</tr>
<tr>
<td>14</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>15</td>
<td>13</td>
<td>169</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>256</td>
</tr>
<tr>
<td>17</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>18</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>19</td>
<td>15</td>
<td>225</td>
</tr>
<tr>
<td>20</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>21</td>
<td>12</td>
<td>144</td>
</tr>
<tr>
<td>22</td>
<td>+16</td>
<td>+256</td>
</tr>
</tbody>
</table>

\[
\begin{align*}
\text{n=22} & \quad \text{Ex}^2=292 & \text{Ex}^2=3,930 \\
- & \quad \text{x}^2=13.27
\end{align*}
\]
Computation

Standard Deviation

\[ S_x = \sqrt{\frac{\sum (x - \overline{x})^2}{N}} \]

Group A (Control Group)

\[ S_x = \sqrt{\frac{(3,355 - (271))^2}{22}} \]

\[ S_x = \sqrt{\frac{3,355 - 73,441}{22}} \]

\[ S_x = \sqrt{\frac{3,355 - 3,338.23}{22}} \]

\[ S_x = \sqrt{\frac{16.77}{22}} = \sqrt{762} \]

\[ S_x \approx 0.873 \]

Group A
Computation

Standard Deviation

\[ S_x = \sqrt{\frac{2 \cdot \frac{\text{Ex}^2}{N} - (\text{Ex})^2}{N}} \]

Group B (Intervention Group)

\[ S_x = \sqrt{\frac{2 \cdot (3930 - (292))^2}{22}} \]

\[ S_x = \sqrt{\frac{3930 - 85.264}{22}} \]

\[ S_x = \sqrt{\frac{3930 - 3875.64}{22}} \]

\[ S_x = \sqrt{\frac{54.36}{22}} = \sqrt{2.47} \quad S_x = 1.57 \] Group B
Independent Samples
$t$ Test Computation

\[
t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{(SS1 + SS2)}{(n_1 + n_2 - 2)} \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}
\]

\[
SS1 = \frac{Ex1 - (Ex1)^2}{n1}
\]

\[
SS2 = \frac{Ex2 - (Ex2)^2}{n2}
\]

**Group A**

\[
SS1 = \frac{3,355 - (271)^2}{22}
\]

\[
SS1 = \frac{3,355 - 73,441}{22}
\]

\[
SS1 = \frac{3,355 - 3,338.23}{22}
\]

\[
SS1 = 16.77
\]

**Group B**

\[
SS2 = \frac{3,930 - (292)^2}{22}
\]

\[
SS2 = \frac{3,930 - 85,264}{22}
\]

\[
SS2 = \frac{3,930 - 3875.64}{22}
\]

\[
SS2 = 54.36
\]

\[
t = \frac{12.32 - 13.27}{\sqrt{\frac{(16.77 + 54.36)}{(22 + 22 - 2)} \left(\frac{1}{22} + \frac{1}{22}\right)}}
\]
\[ t = \frac{12.32 - 13.27}{\sqrt{\frac{(17.13)}{42}}} \]

\[ t = \frac{12.32 - 13.27}{\sqrt{\frac{(1.69)}{1}}} \]

\[ t = \frac{-0.95}{\sqrt{3.38}} \]

\[ t = \frac{-0.95}{\sqrt{154}} \]

\[ t = \frac{-0.95}{0.39} \]

\[ t = 2.44 \]
Degrees of Freedom

\[ P_1 + P_2 - 2 \quad \text{Df} = 22 + 22 - 2 = 42 \]

Level of Significance \( p = 0.05 \)

\[ 40 \text{ df} = \text{table } t = 2.021 \]

\[ 42 \text{ df} = \text{computed } t = 2.44 \]

\[ 2.44 > 2.021 \quad \text{- Null hypothesis is rejected} \]