The second phase of a 3-year project examining the effect of a process approach to writing instruction on students' expository reading and writing skills, a study determined the impact of three writing programs that emphasized different aspects of a process-oriented writing environment. Data were gathered from 159 fifth and sixth grade students and their teachers. Results indicated that a writing environment emphasizing peer editing and publication and/or instruction in text structure significantly increased students' ability to compose expository text. Findings also showed that writing environment and text structure instruction significantly increased students' ability to summarize information across two expository passages. Data indicated that students in the text structure instruction groups made significant gains in free writing, surpassing the control students on all measures of writing ability. Similar results were obtained both when teachers directed instruction in text structure and when students directed the learning through peer editing and conferences. (Statistical tables are included, and a think sheet for prewriting, student problem/solution text and accompanying worksheet, and compare/contrast pattern guide are appended.) (JD)
Research Series No. 177

THE IMPACT OF TEXT STRUCTURE INSTRUCTION
AND SOCIAL CONTEXT ON
STUDENTS' COMPREHENSION AND PRODUCTION
OF EXPOSITORY TEXT

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Published By

The Institute for Research on Teaching
252 Erickson Hall
Michigan State University
East Lansing, Michigan 48824-1034

August 1986

This work is sponsored in part by the Institute for Research on Teaching, College of Education, Michigan State University. The Institute for Research on Teaching is funded primarily by the Office of Educational Research and Improvement, United States Department of Education. The opinions expressed in this publication do not necessarily reflect the position, policy, or endorsement of the Office or the Department. (Contract No. 400-81-0014)
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Abstract

This paper describes the second phase of a three-year research project, examining the role of text structure instruction in improving expository reading and writing skills within a process approach to writing instruction. The study synthesizes research in text structures and research on the writing process. Data from the first year suggest that text structure instruction enhances sixth-grade students' comprehension of expository text but has only moderate impact on students' expository writing. Research in the process approach to writing instruction suggests that such instruction may be most effective when embedded within a process-oriented writing program where children perceive themselves as authors. Data from the second phase of the project, reported in this paper, provide information concerning the impact of three writing programs emphasizing different aspects of a process-oriented writing environment (e.g., peer editing, publication, text structure knowledge) on students' composition and comprehension of expository text. Results suggest that establishing a writing environment emphasizing peer editing and publication, instruction in text structure, or a combination of the two, significantly increases students' ability to compose expository text. Furthermore, writing environment and text structure instruction significantly increases students' ability to summarize information across two expository passages. Similar, but less significant, patterns were found on a free recall task.
The connections between reading and writing have received increased attention in recent literature (e.g., Rubin & Hansen, 1985; Squire, 1983; Tierney & Pearson, 1983). The underlying belief of research in this area assumes that both reading and writing are active, constructive processes. Research within a schema-theoretic view of reading (see Anderson & Pearson, 1984) underscores the constructive nature of text comprehension. The research Anderson and Pearson describe demonstrates that readers actively engage in a variety of strategic activities as they construct meaning from text. Studies in the process approach to writing stress the importance of the active composing processes (Flower & Hayes, 1981; Graves, 1983; Murray, 1982). These composing processes require writers to use a variety of strategies as they construct their texts. The concept that both reading and writing are constructive processes provides the basis for our research program focusing on instructional links between teaching reading and writing.

This article describes the second phase of a three-year research program. The program is based on the integration of research from the areas of

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reading comprehension and composition, specifically examining the role of instruction in social context and text structure on students' comprehension and production of expository text. In the first year, we developed and tested a program for instructing sixth-grade students in an expository reading and writing strategy based upon knowledge of text structure (Raphael & Kirschner, 1985). Raphael and Kirschner conducted a training study in which they taught sixth-grade students about comparison/contrast expository texts. The instructional program focused on the concepts that (a) different texts answer different types of questions, (b) using questions to guide information seeking helps readers identify what is important and helps writers determine how what to include in reports, and (c) summarizing what has been read and using questions as guides to help students remember text information.

Results of the first year indicated that text structure instruction enhanced students' ability to write a comparison/contrast summary using information from more than one article and enhanced their free recall of comparison/contrast texts. We have no clear evidence concerning the impact of instruction on students' ability to compose a comparison/contrast text on a topic of their choice. Although the students included more information in their reports and wrote more well-formed texts, their papers often lacked voice. The lack of voice in the students' own writing led us to questions addressed in the second phase.

The second phase of the project extended Raphael and Kirschner's research in three ways: (a) instruction in text structure was embedded within process-oriented writing classrooms, (b) instruction focused initially on writing, with reading as the secondary application, and (c) teachers, rather than researchers, conducted the instruction within the context of their fifth- and sixth-grade language arts and social studies curricula. This paper focuses on extensions from the previous study. These extensions are designed to address
the shortcomings of researcher-taught classes, the lack of attention to building students' sense of authorship, and the ownership of the strategies taught. In the third year of the study, the focus is to determine those aspects of the program that remain in use, with or without modifications and extensions, when formal participation of the researchers ends.

Theoretical Rationale

Three lines of research influenced this study: research on the composing process, research on the role of text structure knowledge in both composing and comprehending text, and research on writing instruction.

Research on the Composing Process

Research on the composing process has revealed a nonlinear, recursive process that includes the subprocesses of prewriting, drafting, revising (Flower & Hayes, 1981). Throughout the process, writers are guided by a complex awareness of their purpose for writing, the subject about which they are writing, the audience for whom they are writing, and the form they have chosen to communicate best to their audience both the subject and purpose of their paper (Britton, 1978; Kinneavy, 1971; Moffett, 1968). A number of methods can communicate to students the role of subject, audience, purpose and form during prewriting, drafting, and revising. A powerful means for this communication is through the social context in which the instruction is embedded. The social context has been shown to have an impact both on students' assumptions about writing and on their activities during the writing process.

Research has indicated that the social context in which students learn to write has a major impact on the type of writing they produce (DeFord, 1986) and on their control of prewriting, drafting, revising, and editing.
activities (Hansen, 1983). Two important aspects of the social context are audience and purpose. Audience provides a forum for the expression of one's ideas and communications to children the purpose of the prewriting, revising, and editing activities. Audience can be created in a number of ways by sharing finished products within a single classroom (Graves & Hansen, 1983), publishing written work (Graves, 1983), and transmitting work via microcomputer networks (Rubin & Bruce, 1986). Audience has a critical impact on the ways children construe the functions of writing. For example, when the audience is the teacher only, students may come to view writing as a way that teachers test knowledge and consider revision activities as punishment for sloppiness or inexactitude. When children write for an expanded audience that includes peers and others, however, they tend to view writing as communication and to consider revision activities as essential to the communication process.

Having a clear purpose in mind, another important aspect of the social context, affects the ideas generated during prewriting and the ways these ideas are communicated. Purpose can be established in different ways. Rubin (1986) described a writing project in a community in Alaska in which elementary school students published a brochure used by the state's Department of Tourism. Purpose can also be established by publishing class or individual books for placement in the school and classroom libraries (DeFord, 1986), or by sharing ideas with teachers in the form of dialogue journals (Atwell, 1983). When both purpose and audience are emphasized in the writing curriculum, students are more likely to become aware of the social and communicative purposes of writing. These aspects enter the writing process at the points when children brainstorm topics during prewriting and decide on details to include during drafting. The process helps to ensure that information is clear and organized during revising and editing. In practice, audience and
purpose are two aspects of the social context that seem thoroughly interrelated and most critical to develop good writing skills.

Research on Text Structure Knowledge

Knowledge of text structure appears to influence writers' perceptions of what to do during prewriting, drafting, revising, and editing (Dunn & Bridwell, 1980), and therefore, appears important to all phases of the writing process. During prewriting, when writers consider their purpose for writing and the ways they will present their subject to their audience, knowledge of text structures or modes of discourse can guide writers as they decide what form to use for presenting their ideas. The plan provided by the text structure can serve as a map for writers as they move through the drafting process. Text structure knowledge can give writers insights about what should be reorganized during revision when they rewrite their texts to make their ideas organized and understandable (Kirschner & Yates, 1983).

In addition to its impact on authors' composing of text, knowledge of text structure appears to enhance readers' ability to construct meaning during reading, particularly when reading expository text (McGee, 1982; Meyer, 1975; Raphael & Kirschner, 1985; Taylor & Beach, 1984). Research about expository texts suggests that there are different structures such as narration, explanation, comparison/contrast, and problem/solution, that they answer different types of questions (Armbruster & Anderson, 1984), and that sensitivity to these questions can affect comprehension (Raphael & Kirschner, 1985). Given the importance of text structure knowledge in reading comprehension and the role of text structures during the composition process, it is reasonable to question how such knowledge can best be conveyed to students to enhance their ability to comprehend and to write expository papers.
Research Questions

The research described above suggests that students' expository writing ability may be enhanced through a number of different interventions. Increasing students' knowledge and control of the writing process is an important goal, but the optimal methods are subject to study. Students may be taught about prewriting, drafting, and revising through establishing a social context that stresses audience and purpose. They may be taught these writing subprocesses as they learn about different text structures and related questions that guide writing. Or, they may be taught using a combination of methods. This study examined the effect of instruction in process writing and emphasized text structures, audience and purpose, or a combination of both, on students' composition and comprehension of expository text.

Methods

Subjects

Eight fifth- and sixth-grade teachers and their 159 demographically heterogeneous students participated in the study. The teachers had at least 10 years of experience teaching in elementary schools and were considered to be good teachers by the principal, the district language arts coordinator, and the researchers who observed their teaching. They had a minimum of 20 credits beyond their undergraduate degrees. None of the teachers had participated in advanced coursework or inservice activities on writing instruction. Based on an extensive interview with each teacher, we assigned each to one of three treatment groups or to the no treatment control group. Each treatment group had one male and one female teacher, with a total of two teachers per treatment group.

The students were from a low socioeconomic status (SES) neighborhood, with an approximately equal mix of Caucasian, Hispanic, and Black ethnic
groups. Students had been assigned randomly to classes at the beginning of the academic year by the school personnel. From this subject pool, we eliminated students with incomplete data and special education students. Forty students remained in each treatment group, with the exception of the control group, which had only 39 students. To determine if students in the treatment groups were of comparable ability, an analysis of variance (ANOVA) was performed on the language achievement subtest of the Stanford Achievement Test administered in the spring. The results showed that there were no significant differences (p > .05) between treatment groups.

Instructional and Assessment

Materials

We developed materials for both instruction and assessment that were used during inservice activities with the teachers and for student instruction during their language arts and social studies activities. Assessment instruments consisted of pre- and posttests to measure students' expository comprehension and composition.

We used the instructional materials (a) to establish a social context stressing audience and purpose and (b) to introduce students to four text structures. We developed the materials to promote activities thought to be fundamental to successful writing instruction, including daily writing opportunities, opportunities to share writing, make revisions and share the teacher's model of the writing process. Langer and Applebee (in press) and Applebee and Langer (1984) discuss specific features of effective methods of writing instruction using the concept of instructional scaffolding, a metaphor underscoring learners' needs for temporary and adjustable support as they learn new strategies. Scaffolding operates under the fundamental belief that learning is a social process, mediated by more experienced adults or peers who
provide support through ongoing interactions with the learners. The support is gradually removed as the learner develops the strategies to write and read alone. Thus, the materials served as a guide for teachers and students to promote instructional scaffolding during the implementation and use of the writing program.

**Think sheets for social context.** We created materials to encourage the scaffolding activities involved in the process of writing from prewriting activities through drafting and revision with a focus on audience and purpose. Six color-coded "think sheets" were created to illustrate and guide the students in their writing activities: (a) prewriting, (b) first draft, (c) thinking about my first draft, (d) editing, (e) revision, and (f) final draft. Each think sheet consisted of a set of questions or guiding statements designed to prompt students to engage in activities appropriate to that phase of the writing cycle. For example, the prewriting think sheet prompted readers to consider their subject, audience, purpose, and organization, asking such questions as "What do I know that will make this easy to write?" and "How do I want my reader to feel as s/he reads my paper?" A sample think sheet for prewriting is provided in Appendix A. Note how this think sheet promotes strategies appropriate to preparing to write.

Other think sheets followed similar formats, but with different questions. For example, the editing think sheet helped peers to examine each other's papers in terms of interest, organization, and clarity, prompting them with such questions as "What could the author add to make this paper even more interesting?" and "What could the author add or change to make the paper easier to understand?"

**Text structure instruction.** We developed text structure instructional materials to illustrate well-written texts using different structures and to
Another set of materials consisted of four sample passages taken from the students' social studies text. One passage each to represent comparison/contrast, problem solution, explanation, and narrative. For each passage, a worksheet was developed consisting of generic questions for the text type. For example, generic comparison/contrast questions were: (a) What is being compared? (b) What are they being compared? (c) How are they alike? and (d) How are they different? We also developed writing handouts consisting of the generic questions, each text type answers and common key words and phrases for each type of text.

Modified think sheets were developed modified think sheets to encourage the use of text structure knowledge at critical points in the writing process. We created planning sheets for use with the prewriting think sheet, containing the generic questions relevant to each particular text structure (e.g., "What two things are being compared?" "How are they alike?" etc.). We revised the editing think sheets to relate to the specific text structure...
used in a given paper, asking questions and guiding students to examine their papers for answers to text structure questions and to help them identify key words and phrases.

In addition to think sheets, we developed overhead transparencies consisting of "pattern guides" of the different text types to introduce and review each text structure. These guides were graphic displays of structure, questions, and key words and phrases, using boxes and arrows. Appendix C provides an illustration of the compare/contrast pattern guide.

**Composition assessment.** To assess changes in students' ability to compose, we developed three free writing activities to administer as pre- and posttests. Students were asked to write first drafts of letters to a friend to (a) tell a story about a personal experience, (b) compare/contrast two people, places or things, and (c) describe a problem and its solution. These free writing measures tested the direct impact of the instructional program on students' writing.

**Comprehension assessment.** Comprehension tests were used to measure near and far transfer. We selected comparison/contrast texts and activities to reduce potential ceiling effects. Research (Englert & Heibert, 1984) suggests that comparison/contrast structure is one of the more difficult text structures for students of this age group to comprehend. The near transfer measure summarized students' use of multiple sources.

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Richgels, McGee, & Lomax (1986) noted that this structure was among the easiest for students to recall. However, their results show that this was true only for "high-level information," such as topics being compared. Performance was lowest on this structure in providing supporting details.
For example, given a text on Sparta and one on Athens, students were asked to compare/contrast Sparta and Athens, referring to the two source reading (i.e., gathering information) and writing (i.e., producing text), although students received no specific instruction using multiple information sources. The far transfer task was a free recall measure; students were never directly taught how text structures could help them recall information from texts. Students read a comparison/contrast text (comparing Australia and New Zealand) and then wrote as much of the text as they could remember.

Procedures

We used three treatment groups and one control group to test the relative effects of the social context, text structure instruction, or the combination of social context and text structure instruction on teachers and students. We wish to emphasize that a social context existed in all classrooms prior to our involvement and that we use the term social context in this paper to identify and underscore the environment we created to stress tests as often as needed. This measure directly examined the link between purpose, audience, and ownership in writing. The social context (SC) group learned and practiced writing within the social context, emphasizing purpose, audience, and ownership, but without text structure instruction. The text structure (TS) group received text structure instruction in the absence of the defined social context. The social context/text structure (SC/TS) group received text structure instruction embedded within the defined social con-

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Social context in this study is specifically defined as a writing environment in which purpose and audience are stressed through publication and peer editing. In fact, social contexts existed in all classrooms and the term itself represents the range of complexities in any environment (Raphael, 1986) for more complete discussion.
text. A control (C) group did not have elements of this particular social context or instruction about text structures.

Phase I. We interviewed teachers in early fall to determine the treatment group most appropriate to their goals of instruction (e.g., a teacher who used journals and some peer editing was placed in one of the social context groups; a teacher who indicated that she and probably her students were uncomfortable sharing papers was placed in a group without social context). Although our method runs counter to the assumption of random assignment of subjects to treatment group, we determined that it was not ethical to ask a teacher who already used elements of one treatment to stop doing so for an entire academic year. Further, students had been assigned randomly to classrooms. Once teachers were assigned to treatment groups, we administered pretests to students in their classrooms. Students were pretested on five consecutive days on the free recall, summarization, and the three free writing tasks; group and individual questionnaires were administered over the next five days.

Students in the SC, SC/TS, TS groups then wrote one narrative, one explanation, two comparison/contrasts, and two problem/solution texts based on their personal experiences. However, the specific writing activities differed across treatments. In the two treatment groups in which the social context was established for writing (SC, SC/TS groups), students completed a "writing cycle" for each text type. This cycle involved prewriting, drafting, preparing for a peer conference, peer editing, and revising. To guide students during each of these writing phases, students in the SC and SC/TS groups completed the think sheets. Students in these classrooms also voted on which type of format to use for the publications they chose. Consistent with research on writing instruction, we focused on the importance of writing
almost daily for a purpose and on flexible support for each aspect of the writing process. In contrast, students in the TS classrooms also wrote six papers, but did not participate in revising, peer editing, or publication.

During the first phase, teachers from the two social context groups met with the researchers on a weekly basis to discuss these activities. For example, some sessions focused on introducing students to prewriting activities, using the (student) author's chair, or on introducing and implementing peer editing. Other discussions concerned teachers' and researchers' observations of changes in students and changes in instruction.

Phase II. Phase II focused on embedding text structure instruction in social context classrooms in which children perceived themselves as writers (i.e., SC/TS classrooms) and in classrooms in which a social context for writing had not been established (i.e., TS classrooms). Table 1 provides a summary of the activities of the four treatment groups in Phase I and Phase II. Using Table 1 as a guide, note that during Phase I, the SC and SC/TS groups had been writing in an environment that emphasized audience and purpose, including peer conferences, peer editing, and publishing. The TS group had practiced writing the assignments, but outside of an environment that encouraged peer editing or publication.

During the second phase, the groups differed as follows. The SC group continued to receive explicit instruction in subject, audience, purpose, and peer revision but received no instruction in text structure forms. The SC/TS

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The student author who is sharing his or her writing with the class sits in a special author's chair.
The group continued to receive explicit instruction in subject, audience, purpose, and peer revision and received additional instruction in four text structures. The TS group received explicit instruction in the composition and revision of drafts based on text structure forms but received no explicit focus on audience, purpose, and publication. The control group received no explicit instruction in subject, audience, purpose, or text structure forms but participated in regular classroom writing and social studies activities. Thus, all three treatment groups were involved in writing and revising papers, but differences existed between the presence or absence of structure instruction and between the presence or absence of a focus on purpose, audience, and ownership (e.g., author's chair, publishing, and peer editing).

Table 1
Summary of Activities of Treatment Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Phase I (10 weeks)</th>
<th>Phase II (10 weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC</td>
<td>Social Context introduced</td>
<td>Continue writing in social context using social studies topics</td>
</tr>
<tr>
<td>SC/TS</td>
<td>Social Context introduced</td>
<td>Text structure instruction for four structures embedded in social context</td>
</tr>
<tr>
<td>TS</td>
<td>Weekly writing assignments</td>
<td>Text structure instruction for four structures</td>
</tr>
<tr>
<td>Control</td>
<td>No treatment</td>
<td>No treatment</td>
</tr>
</tbody>
</table>

The second phase included two major pieces. First, teachers gave instruction in text structures for those in the two text structure groups (SC/TS, TS). Second, students in the three treatment groups (SC, SC/TS, TS)
repeated the fall-term cycle of using think sheets to guide them through the steps of the writing process in writing four different types of texts: comparison/contrast, narrative, explanation, and problem/solution. Specifically, students in the SC group used similar think sheets to those they had used in the fall but with minor changes which focused their writing on social studies topics, peer editing, and publishing a class social studies book. Students in the TS group wrote on social studies topics using their knowledge of text structure and the think sheets to help them plan, draft, revise, and edit their papers, but they did not peer edit or publish. Students in the SC/TS group used their knowledge of text structure in conjunction with the think sheets to help them plan, draft, peer edit, and revise their papers for publication. Thus, all students wrote on social studies topics and used social studies texts as a basis for gathering information about their topics. However, students in the text structure groups were given specific information about text forms to help them plan and revise their papers.

In January, students in the two text structure groups (SC/TS and TS) were introduced to the concept of text structures. The basis of this instruction emphasized that different types of texts answer different questions, that they use different key words and phrases to signal readers about content, and that they have different ways of organizing information. The four text structures taught paralleled those used in Phase I: comparison/contrast, narration, explanation, and problem/solution. Students spent approximately two weeks on each structure to learn to recognize their characteristics (i.e., questions answered and key words and phrases).

Students examined well-formed examples of other students' writing produced during Phase I. They also critiqued their own Phase I writing for use of key words and phrases and for their success in answering relevant questions (e.g., for problem/solution, did they answer, "What is the problem?"
What caused it? How was it solved? What were some steps in the solution?"

Next, they examined and critiqued paragraphs in their social studies texts. They then planned, drafted, and revised a social studies report of their own (comparing and contrasting two locations in a state). In the SC/TS group, these papers were subject to peer review and eventual publication, as in Phase I.

Teacher/researcher meetings continued throughout Phase II. The two SC teachers met with one researcher, while the four TS and SC/TS teachers met with the other two researchers. Students took the posttests in late spring which included the same measures administered during the fall pretesting.

**Students' Writing and Reading Performance**

**Scoring Procedures**

Students' performances on the free writing and transfer measures were scored by six trained coders who were blind to the experimental hypotheses or the assignment of students to treatment groups. In scoring the writing tests, each student's composition was independently read by two coders who assigned each student's composition two scores: (a) a primary trait score ranging from 0-12 points based on the degree to which the composition used the required organizational pattern for a specific text structure and to which it contained the appropriate key words and phrases (Mullis, 1980) and (b) a holistic score ranging from 0-5 points based on the degree to which the composition was interesting and to which it communicated the top-level structure associated with a particular text structure form (Meyer, 1975).

Two coders independently read the multiple source and the free recall measures, assigning scores for each. To score the multiple source task (the near transfer task), students' summarizations were assigned a rating from 0 to
12 based on the number of ideas recorded, the degree to which the students synthesized information from the two sources, and the student's adherence to the top-level structure of a comparison/contrast text. For the free recall measure (the far transfer task), students were assigned a rating from 0-12 based on the completeness of their recall and the degree to which the recall reflected the compare/contrast structure of the stimulus passage.

The two coders' rating were averaged to yield a mean score for each variable of interest. However, this averaging was performed only when the ratings of the coders were in close agreement (e.g., within a 2-point spread). When ratings were not in close agreement, the coders met to discuss their reasons for assigning a specific score and to reach consensus. In cases where coders could not reach consensus, one of the researcher's independently read the students' compositions and assigned a final score.

Reliability on the coders' rating was calculated after coders tried to reach consensus and before the third person independently reconciled differences. Reliability was calculated by dividing the number of agreements by the sum of agreements plus disagreements. For the free writing measures, reliability was above 90% for both the primary trait and holistic scores. For the tests of transfer, reliability on the multiple source and recall of measures was again greater than 90%.

Writing Measures

Free-writing scores were analyzed in a 2 (text structure: present, absent) x 2 (social context: present, absent) x 3 (free writing: narrative, comparison/contrast, problem/solution) multivariate analysis of variance (MANOVA). Pretest-posttest gain scores were computed for primary trait and holistic scores and these were entered into the MANOVA as dependent measures. Text structure (present, absent) and social context (present, absent) were
were between-subject factors in this design. Within-subjects factors involved repeated measures across the three types of free writing (narrative, comparison/contrast, problem/solution) and the two dependent measures.

The statistical testing procedure involved two steps. As recommended by Hummel and Sligo (1971), the first stage consisted of an examination of the multivariate Fs with primary trait and holistic scores considered simultaneously. If a multivariate result was significant, the separate univariate ratios were examined for each dependent variable, and follow-up mean comparison tests were performed to determine where the significant effects were located.

A summary of the multivariate results is presented in Table 2. Means for the dependent variables by text structure, social context, and free writing conditions are shown in Table 3.

Results of the MANOVA revealed significant main effects for social context and type of writing as well as for statistically significant text structure x social context and free writing x text structure interactions. Although text structure was not significant in the overall multivariate analysis, the multivariate F ratio for text structure was approaching statistical significance, and the univariate tests for both dependent variables were significant at the .05 level. Given the a priori hypothesis that text structure would have a significant impact on writing performance, these results cannot be entirely dismissed since they represented strong trends suggesting the probable influence of text structure instruction on students' free writing.

To interpret the overall multivariate effect for social context, the univariate results for each dependent variable were examined. Inspection of the univariate F ratios revealed that both dependent variables made a
## Table 2

Summary Table for Multivariate Analysis of Free Writing

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Multivariate</th>
<th>Univariate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>P</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>P</td>
<td>F</td>
</tr>
<tr>
<td>Text Structure (A)</td>
<td>2,154</td>
<td>2.62</td>
<td>.07</td>
</tr>
<tr>
<td>Primary Trait</td>
<td>5.07</td>
<td>&lt;.05</td>
<td></td>
</tr>
<tr>
<td>Holistic</td>
<td>4.95</td>
<td>&lt;.05</td>
<td></td>
</tr>
<tr>
<td>Social Context (B)</td>
<td>2,154</td>
<td>6.00</td>
<td>.003</td>
</tr>
<tr>
<td>Primary Trait</td>
<td>11.79</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Holistic</td>
<td>8.21</td>
<td>&lt;.01</td>
<td></td>
</tr>
<tr>
<td>A X B</td>
<td>2,154</td>
<td>5.20</td>
<td>.007</td>
</tr>
<tr>
<td>Primary Trait</td>
<td>6.92</td>
<td>&lt;.01</td>
<td></td>
</tr>
<tr>
<td>Holistic</td>
<td>10.15</td>
<td>&lt;.01</td>
<td></td>
</tr>
<tr>
<td>Free Writing (C)</td>
<td>4,152</td>
<td>19.91</td>
<td>.0001</td>
</tr>
<tr>
<td>Primary Trait</td>
<td>25.35</td>
<td>&lt;.0001</td>
<td></td>
</tr>
<tr>
<td>Holistic</td>
<td>5.44</td>
<td>&lt;.01</td>
<td></td>
</tr>
<tr>
<td>A X C</td>
<td>4,152</td>
<td>4.37</td>
<td>.002</td>
</tr>
<tr>
<td>Primary Trait</td>
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<tr>
<td>Holistic</td>
<td>5.09</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>B X C</td>
<td>4,152</td>
<td>1.74</td>
<td>ns</td>
</tr>
<tr>
<td>Primary Trait</td>
<td>2.29</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>Holistic</td>
<td>1.33</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>A X B X C</td>
<td>4,152</td>
<td>2.13</td>
<td>.07</td>
</tr>
<tr>
<td>Primary Trait</td>
<td>1.23</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>Holistic</td>
<td>2.34</td>
<td>ns</td>
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</tr>
</tbody>
</table>
Table 3

Means and Standard Deviations for Gain Scores on Free Writing Measures

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>PT a</th>
<th>Hol b</th>
<th>PT</th>
<th>Hol</th>
<th>PT</th>
<th>Hol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text Structure</td>
<td>40</td>
<td>7.63</td>
<td>1.88</td>
<td>1.90</td>
<td>.96</td>
<td>3.71</td>
<td>1.24</td>
</tr>
<tr>
<td>Absent (SC only)</td>
<td></td>
<td>(6.58)</td>
<td>(1.56)</td>
<td>(3.55)</td>
<td>(1.37)</td>
<td>(4.88)</td>
<td>(1.47)</td>
</tr>
<tr>
<td>Social Context</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present (SC)</td>
<td>40</td>
<td>7.30</td>
<td>1.51</td>
<td>2.19</td>
<td>1.08</td>
<td>3.15</td>
<td>1.04</td>
</tr>
<tr>
<td>Present (SC/TS)</td>
<td></td>
<td>(7.92)</td>
<td>(1.73)</td>
<td>(3.40)</td>
<td>(1.50)</td>
<td>(5.59)</td>
<td>(1.89)</td>
</tr>
<tr>
<td>Present (TS only)</td>
<td>40</td>
<td>6.63</td>
<td>1.56</td>
<td>2.76</td>
<td>1.60</td>
<td>1.98</td>
<td>.61</td>
</tr>
<tr>
<td>Absent (Control)</td>
<td></td>
<td>(6.14)</td>
<td>(1.34)</td>
<td>(2.79)</td>
<td>(1.17)</td>
<td>(4.70)</td>
<td>(1.57)</td>
</tr>
<tr>
<td>Marginal</td>
<td>159</td>
<td>5.90</td>
<td>1.38</td>
<td>1.69</td>
<td>.93</td>
<td>2.66</td>
<td>.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(7.57)</td>
<td>(1.68)</td>
<td>(3.43)</td>
<td>(1.44)</td>
<td>(4.89)</td>
<td>(1.58)</td>
</tr>
</tbody>
</table>

a  
PT = Primary trait ratings
b 
Hol = Holistic ratings
c 
Total number of points possible = 12
d 
Total number of points possible = 5
significant contribution to the multivariate main effect, although primary
trait scores made a slightly greater contribution. Comparison of the gain
scores of social context groups indicated that students in the social context
classrooms (primary trait M = 4.31, holistic M = 1.28) made significantly
greater gains than students who wrote outside of social context. The strong
contribution of primary trait scores in the overall analysis suggested that
students who wrote and edited their expository papers with a focus on writing
process, audience, and publication made specific gains in their acquisition
of specific traits associated with text structure.

The impact of social context, however, was subsequently interpreted in
light of the interaction of text structure and social context. Examination
of univariate tests for the text structure x social context interaction
revealed that both primary trait and holistic scores made a significant
contribution to the overall statistically significant multivariate F ratio,
but that holistic scores made a slightly greater contribution. Tukey's post
hoc comparison test was performed on the primary trait and holistic scores of
students in the four treatment groups. The results revealed that, without
text structure or social context, students in the control group made rela-
tively minimal gains from pre- to posttreatment.

In contrast, students in the SC/TS, TS, and SC groups made strong gains
in their primary trait (SC/TS M = 4.22, TS M = 3.79, SC M = 4.41) and
holistic (SC/TS M = 1.21, TS M = 1.25, SC M = 1.36) ratings from pre- to
posttreatment. All three of these groups significantly (p < .05) outper-
formed the control group (primary trait M = 1.21, holistic M = .41), although
there were no significant (p < .05) differences between the three experi-
mental treatment groups. Thus, writing gains were similar if students received
text structure instruction without social context (TS group) or if they
received text structure instruction embedded in a social context (SC/TS).
The significant main effect for free writing reached univariate significance on both primary trait and holistic scores, although primary trait scores made a slightly larger contribution. When Tukey's post hoc comparison test was applied to the primary trait scores of students, the analyses showed that, overall, students made significantly greater pretest-posttest gains in writing narrative forms ($M = 5.90$) than they made in writing comparison/contrast ($M = 1.60$) and problem/solution ($M = 2.66$) forms (which were not significantly different from each other, $p > .05$). Similarly, post hoc comparison tests on the holistic scores of students indicated that students made significantly greater gains in the qualitative ratings they received for their narrative texts than for their comparison/contrast and problem/solution texts (which were not significantly different, $p > .05$).

Of the three text structures, comparison/contrast tended to be the most difficult text for students to master, as evidenced by the least pretest-posttest gains. Students did best in writing narrative forms, however, at the time of the pretest, and this also was the area of greatest growth from pretest to posttest. Thus, students tended to make the greatest gains in the text structure that was initially easiest for them. Furthermore, this growth could not simply be attributed to development or maturation. This is suggested by the fact that control group students showed relatively minor pretest-posttest gains in writing narrative forms.

However, the significant main effect for free writing was further limited by the interaction with text structure. Examination of the univariate $F$ tests for the text structure x free writing revealed that only the holistic scores differentiated text structure groups. Tukey's multiple comparison procedure was used to analyze holistic score differences on the three types of free writing. For comparison/contrast texts, the gain scores of
...and social context were significant in students who did not receive text structure instruction. For other types of writing, the gains exhibited by students receiving text structure instruction were comparable to the gains exhibited by students who did not receive text structure instruction. Thus, text structure instruction did affect the pattern of making gains only with respect to the narrative form since students' proficiency in writing comparative content text structures also improved. The failure to find a significant interaction between social context and free writing indicated that the specific effects of social context on children's writing were more general and did not result in specific gains on particular types of text forms.

Transfer Tests

To examine the effects of the program on transfer tasks tapping reading, writing, comprehension, and reading comprehension, pretest-posttest gain scores were calculated and analyzed in a 2 (text structure present and text structure absent) x 2 (social context present and social context absent) MANOVA with a repeated measures on multiple source and free recall scores. Table 4 shows the means and standard deviations for the two dependent variables used in this analysis. Table 5 presents the results of the MANOVA.

The results of the MANOVA revealed no significant main effects for text structure or social context, but there was a significant text structure x social context interaction. Examination of the univariate F ratios revealed that only multiple source scores reached univariate significance, although the F ratio for free recall was approaching statistical significance. When Tukey's post hoc comparison tests were performed on the multiple source gain scores, the results revealed no significant (p < .05) differences between TS and TC groups, but both of these groups obtained significantly (p < .05)
Table 4

Means and Standard Deviations for Gain Scores on Free Writing Measures

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Free Recall</th>
<th>Multiple Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Text Structure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absent (SC only)</td>
<td>40</td>
<td>1.50</td>
<td>2.73</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>(2.76)</td>
<td>(4.29)</td>
</tr>
<tr>
<td><strong>Social Context</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present (SC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Text Structure</td>
<td>40</td>
<td>.82</td>
<td>2.10</td>
</tr>
<tr>
<td>Present (SC/TS)</td>
<td>SD</td>
<td>(3.84)</td>
<td>(3.51)</td>
</tr>
<tr>
<td>Text Structure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present (TS only)</td>
<td>40</td>
<td>1.39</td>
<td>3.35</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>(2.85)</td>
<td>(2.99)</td>
</tr>
<tr>
<td>Social Context</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absent (Control)</td>
<td>39</td>
<td>.31</td>
<td>.10</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>(3.08)</td>
<td>(2.86)</td>
</tr>
<tr>
<td><strong>Marginal</strong></td>
<td>159</td>
<td>1.00</td>
<td>2.08</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>(3.16)</td>
<td>(3.64)</td>
</tr>
</tbody>
</table>

a Total number of points possible = 12
b Total number of points possible = 12
Table 5
Summary Table for Multivariate Analysis of Transfer Tests

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Multivariate F</th>
<th>P</th>
<th>Univariate F</th>
<th>P</th>
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</thead>
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<tr>
<td>Text Structure (A)</td>
<td>2,154</td>
<td>2.83</td>
<td>.06</td>
<td>.16</td>
<td>ns</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>5.69</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Free Recall</td>
<td></td>
<td></td>
<td></td>
<td>.37</td>
<td>ns</td>
</tr>
<tr>
<td>Multiple Source</td>
<td></td>
<td></td>
<td></td>
<td>1.56</td>
<td>ns</td>
</tr>
<tr>
<td>Social Context (B)</td>
<td>2,154</td>
<td>.84</td>
<td>ns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free Recall</td>
<td></td>
<td></td>
<td></td>
<td>.37</td>
<td>ns</td>
</tr>
<tr>
<td>Multiple Source</td>
<td></td>
<td></td>
<td></td>
<td>1.56</td>
<td>ns</td>
</tr>
<tr>
<td>Free Recall</td>
<td></td>
<td></td>
<td></td>
<td>12.42</td>
<td>&lt;.001</td>
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<tr>
<td>Multiple Source</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

higher gain scores than students in the SC/TS and C groups (which were not significantly different, p > .05). Despite the lack of significant differences between SC/TS and C students, control students showed virtually no progress from pretest-posttest, whereas SC/TS students showed a pattern of pretest-posttest gain predicted by the experimental hypotheses. The results also suggested that the more pure forms of the experimental treatment (TS, SC) resulted in greater near transfer to a task that required students to see the reading-writing connections between summarizing information from multiple sources than for students in either a combination treatment (SC/TS) or in no the treatment (C) group.

Although the free recall scores of students were not significant in the univariate analysis, the pattern of results was similar to that found for the
multiple source scores; therefore, the free recall scores warrant attention. Post hoc comparison tests were not performed because of the failure to find univariate significance for free recall. However, an inspection of the gain scores of students indicated that the biggest gains from pretest to posttest were for the TS and SC groups, whereas the gain scores of SC/TS and control students were moderate to small, respectively. This result tended to corroborate trends found on the near transfer tests. Students who tended to transfer their knowledge to comprehension tasks were the students in the more pure forms of instructional programs.

**Discussion**

We predicted that text structure and social context would positively, though differentially, affect students' expository composition and reading comprehension. Results indicated that students in the three treatment groups (TS, SC, SC/TS) made significant gains in free writing, surpassing the control students on all measures of writing ability. Furthermore, students receiving instruction in text structure made specific gains in their proficiency to write the comparison/contrast text structure forms. Thus, instruction in text structure and social context positively influenced students' ability to organize and compose expository text, with text structure instruction having a specific impact on one of the text forms that was the most difficult for children to write. This extends the findings of researchers who have found positive relationships between story grammar instruction and narrative writing (e.g., Gordon & Braun, 1985) in young children and between text structure knowledge and writing in adults (Dunn & Bridwell, 1980).

On tests of near and far transfer to reading, the results were more equivocal but supported the predicted positive effects of text structure and social context treatments on students' reading performance. On the measure
of students' ability to synthesize information from multiple sources, stu-
dents in the TS and SC groups made significant gains and surpassed all other
groups. Although not statistically significant, a similar trend was found
for free recall favoring the TS and SC groups. Experimental students who
received concentrated forms of instruction, focusing either on text structure
or social context, but not both, tended to make the greatest connections be-
tween writing and reading.

To understand why students in the social context and text structure
groups transferred their knowledge from writing to reading, it is helpful to
consider the components of the respective instructional programs. For
example, social context students were asked to summarize other students' wri-
ting as part of the peer editing conference and to ask questions when stu-
dents' papers did not make sense. Both activities have been shown to enhance
comprehension and recall of written text (Taylor & Beach, 1984; Wong & Jones
1982). Interviews with students confirmed that they focused on sense making
in editing other student's papers. In these respects, distinctions between
writers and readers were blurred as authors and audience maintained a con-
stant dialogue. In addition, students in social context classrooms gathered
information from social studies texts when writing and publishing their social
studies books. Thus, they had ample opportunities to read and monitor well-
structured and poorly structured texts in the context of reading social stud-
ies texts and student papers. Since comprehension monitoring and sense mak-
ing underlies mature comprehension performance (Brown, 1982), these activi-
ties may have affected students' abilities to understand not only how texts
are organized for the purposes of composition but also to study how to moni-
tor text for the purposes of comprehension. This may account for evident
gains in their primary trait and holistic scores in their expository composi-
tions as well as gains in their reading comprehension.
Similarly, TS groups also received instruction that promoted making connections between reading and writing. Students in TS groups read social studies texts that conformed to text structure expectations, and they also read the texts as bases for gathering, composing, and revising their own expository papers. These activities could well have heightened their awareness of how to read and comprehend expository texts.

What is less certain is the failure of SC/TS groups to make similarly strong improvements on the multiple source and free recall measures. In other words, if text structure and social context have positive effects on reading and writing performance, why was the pattern of results not more strikingly in favor of the SC/TS group? To answer this question it must be noted that SC/TS groups had two treatments in a single year. In the first half of the year, SC/TS groups participated in writing activities in which there was a social context for writing; in the second half of the year, text structure instruction was embedded in this context. Thus, students in the SC/TS groups concentrated on audience and writing process and added to that knowledge by learning about specific text structures.

For students just beginning to master expository writing, the dual rather than single focus may have been slightly confusing. This may have consumed their attention and they may have had less attention available to focus on a single process and to see connections between writing and reading. This hypothesis is partly supported by interviews with teachers in the SC/TS group who suggested that the adults were working through similar changes associated with the introduction of text structure in their classrooms. They regressed from higher level concerns about "How does this affect my students?" to lower level management concerns. Similar adaptations and regressions on the part of their students may have affected students' ability to
make links to reading (see Kirschner, Raphael, & Englert, 1985, for a thorough treatment of the data on teacher perceptions and effects). However, research is necessary to determine if a longer training program for students in the SC/TS group would promote their ability to make writing-reading connections or if a program that combined foci at the beginning would prove to be more effective than one that delayed introducing text structure until midyear.

In summary, this study shows the strong effects of social context and text structure on writing and reading. Significantly, similar results were obtained when teachers directed instruction in text structures or when students directed the learning through peer editing and conferences with other students. The powerful effects of the two treatments are most apparent when we consider that text structure instruction occurred in only one-half of the time apportioned for the social context treatment and that students engaged in examining, questioning, composing, and critiquing text structure forms in the absence of teacher-directed study were still able to accumulate impressive data about expository text structures. The latter finding raises questions about the nature and focus of peer editing conferences. Perhaps the interaction between author and reader allows new understanding to emerge as students discuss text structures and coach each other on how to write and revise papers to meet assumptions triggered by specific text forms.

Given the importance of peer interactions and revision processes to writing instruction, future analyses of the think sheets, revisions, and final drafts of student papers in the various treatments will provide valuable measures of students' conditional knowledge about how to write and edit particular text structure forms. Further analyses of the performance patterns of pretest-posttest gainers and nongainers during training will help specify factors that account for growth or lack of growth and will suggest
specific treatments best suited for certain types of students. As we build
our understanding of the elements of effective writing instruction, we can
enhance both the theoretical bases for directing practice and improving the
practice of writing instruction in today's classrooms.
References


Appendix A

Think Sheet for Prewriting

Author __________________
Date ________________

PREWRITING FORM

Subject: My topic is _____________________________.

I want to write about this topic because _____________________.

Two things do I already know that will make it easy to write this paper are:

1. 
2. 

Reader: Who will read my paper?

My reader will be interested in this topic because

1. 
2. 

Purpose: My purpose in writing about this topic is to _____________________.

I want my reader to feel _____________________. when he or she reads my paper?

Form: What ideas will I put in my paper to make it interesting to my reader?

1. 
2. 
3. 
4. 

I will organize the ideas to make them easy to following using this order:

First, ____________________________.
Second, ____________________________.
Third, ____________________________.
Fourth, ____________________________.
Appendix B

Student Problem/Solution Text and Accompanying Worksheet

I don't want to move

You know how it is. You like your friends. You like your school. You love your house but you don't want to move. It happens to everyone at least once in your life and now it's happening to me. I came home one day and my mom said that she wanted her very own house. I didn't think it was possible. I just laughed at her and went to my room. Boy was that stupid. Just a few days ago we got a phone call and a guy said we could get a house! It all happened so fast! My mom says we are going to get the house as soon as we can. I have to leave my friends behind. I have to say goodbye to my house. I have to say goodbye to my school. I just don't want to go! Well, maybe I'll get over it.

Worksheet #1

Lesson 1

Paper 1

1. What kind of paper is this?

2. What key words & phrases tell what it is?

3. What questions does this paper answer?

1. 

2. 

3. 

35

39
Appendix C

Compare/Contrast Pattern Guide

<table>
<thead>
<tr>
<th>What is being compared/contrasted?</th>
</tr>
</thead>
<tbody>
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<td>On what?</td>
</tr>
<tr>
<td><strong>both</strong></td>
</tr>
<tr>
<td><strong>same</strong></td>
</tr>
<tr>
<td><strong>Alike?</strong></td>
</tr>
<tr>
<td><strong>Different?</strong></td>
</tr>
<tr>
<td>in contrast to</td>
</tr>
<tr>
<td>On what?</td>
</tr>
<tr>
<td>similar</td>
</tr>
<tr>
<td><strong>Alike?</strong></td>
</tr>
<tr>
<td><strong>Different?</strong></td>
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<tr>
<td>however</td>
</tr>
<tr>
<td>On what?</td>
</tr>
<tr>
<td>Alike?</td>
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<tr>
<td>Different?</td>
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</table>