The first section of this paper discusses recent writing research and the basic elements of language development. The second section describes a program which used a sentence-combining method as an activity-based experience for language development. A six-month study involved all fourth graders at Powell School in Mountain View, California. The students were enrolled in two classes, one taught in a traditional manner and the other taught in an open-classroom manner. The students were randomly assigned to control and experimental groups within their classes. In the experimental group, student writing was stimulated by silent cartoons and movies, by topic paragraphs, and by experiential presentations. Student writing was analyzed for quantitative features of syntactic development, and writing quality was evaluated by three teacher-writers. The results indicated that students in the experimental group made significant gains in five out of six analytic factors and the control group made significant gains in two out of six factors. The paper concludes that a grammar-free program of sentence-combining lessons, backed by games, activities, and experiential exercises, can encourage synthetic growth in the writing of fourth grade children. (TS)
RESEARCH FOR MONDAY MORNING: Elementary Writing

Jack Perron
University of Georgia

Recent writing research has investigated how student writing changes over the school years. The data amply demonstrates how typical beginning writers use "and" or other simple devices to add up their ideas into sentences. As they mature, they learn new tactics—subtracting repetition, multiplying supportive material, and dividing subordinate information to scatter in just the right places.

The analogy to arithmetic processes is purposeful. We teach adding, subtracting, multiplying, and dividing via mental manipulations which allow children to exercise their potential for solving problems. There are basic elements that must be practiced in mind before the child can feel comfortable enough to use them with assurance.

Language involves such mental skills—syntactic abilities. Unless children are as comfortable with their use in writing as they are with their use in speech, they're not likely to take to writing with similar ease.

Kellogg Hunt pioneered research into how written syntactic skills change over the school years. His studies showed that beginning writers simply do not possess the syntactic strength—the ability to use different sentence building pathways—that allows older writers to say what they want to say in exactly the way they want to say it.

The novice writer gains control over these skills through a glacially slow process—without much help from teachers currently. Hunt felt sure that
knowledge about the directions of these changes could be put to use in a manner that would help children gain control over them quickly. His suggestions were gathered into an approach called "sentence combining." The sentence-combining method involves practice in combining different types of sentences into more complex versions of the same meaning. For instance, a novice might begin a story with:

There was a boy and he was tall and he lived down the street.

We can isolate the smallest separable parts of his meaning like this:

There was a boy.
He was tall.
He lived down the street.

The process of the young writer then becomes clear. He simply adds the separable parts together with "and." But an older writer might possess the ability to join the ideas together differently.

There was a tall boy who lived down the street.

There are many ways to tie the ideas together, but the point is that beginning writers do not control many such alternatives in writing. By separating the parts and showing the child how they might join to form his intended meaning—-in different ways—we can give him insights into the variations possible for capturing his thought on paper. Sentence combining does this by encouraging the child to refer to a knowledge he already possesses to discover the options available in writing.

Linguists tell us that all normal human beings possess an inner core of language ability which is the basis of all our communication powers. The route from this inner core outward toward speech is well worn by the time the child enters school. But for writing—a medium that does not allow pointing, gesturing, listener feedback or the other supportive mechanisms of speech—a new route from that inner core must be mapped out.

For both speech and writing, language offers the same building rules.
Yet, speech seems to be a natural inclination while writing is not. As Eric Lenneberg points out in *Biological Foundations of Language*, a child takes to speaking in a speech community as he takes to walking in a walking community. They are genetic-based capacities that find their natural outlets in the environment. However, although ours is a writing society, thousands never learn to write—it's just not "natural." Thus, it appears that teachers should provide an environment rich in the mental heuristics necessary for developing writing skills—that is, encourage children to lean back on what they already "know" as language users.

It's all in the mind, waiting to find its way to paper. Joining elements via "and" may be the child's best entry into writing, but as a child matures, its overuse limits the power of expression. Recall children in your own experience who have tried to express themselves through a string of ideas linked by "and... and... and... and... and, etc." Often they give up before getting their point across, or they forget what they wanted to say in the first place. The same holds true for writing, especially when a child has a "need" to express himself but lacks the skills to deliver. Demanding that children plunge into writing—whether via experience, a purpose, or even for handwriting's sake—without giving them support in translating their inner potential to paper, is frustrating to their future interest in writing.

Hunt believed that the experience of combining sentences would allow a child to throw away his "and" crutch and move on his own with new skills that allow him to place his ideas down more meaningfully. Several researchers tested this prospect in schools. Among the first, John Mellon demonstrated that seventh graders can gain significant changes in their writing skills. His approach involved a brief grammatical introduction before combining the sentences via transformational clues.

Frank O'Hare changed Mellon's lessons by replacing the transformational
symbols with actual-word clues and eliminating the grammar study entirely. His experimental seventh graders were said to be using twelfth-grade writing skills by the end of his program.

At the elementary level, others also experimented successfully. Barbara Miller-James Ney and Kellogg Hunt-Roy O'Donnell have demonstrated writing gains with fourth graders through sentence-combining programs.

But none of the findings have reached the public schools with much impact. Until O'Hare, the nature of the sentence-combining experience was clouded with complex transformational terminology. And throughout the early research, one criticism remained unchallenged.

James Moffett, in Teaching the Universe of Discourse, criticized Mellon's approach for its use of dummy sentences--isolated sentences appearing out of context. Moffett claimed that practice with such sentences for the purpose of merely upgrading syntactic skills did little to satisfy the overall need of the child to use language in content-oriented, purposeful ways. As he put it:

If (a student) learns to coil and embed constructions as an extraneously motivated intellectual feat, he may write his own sentences without regard for the needs of the whole discourse in which they occur and which alone can provide the proper context for them. (pp. 170-171)

Moffett was not ridiculing sentence combining, since he went on to add that his criticism "in no way undermines the essential validity of the sentence-combining experience; it merely argues for situating the experience within another setting."

Last school year I tried to create an experimental sentence-combining program that took up Moffett's challenge. By placing sentence problems in varying formats and supplementing the approach with games and activities, I hoped to place sentence combining on a personal, purposeful, and enjoyable level for elementary students.

When I was writing the program, Moffett was kind enough to suggest some
ways I might overcome his concerns. For instance, children could play "Grab Bag" (from his Interaction series\textsuperscript{8}), an activity which asks them to reach into a bag containing various objects. The children respond with a description of the contents. One answer might be: "It's hard . . . it's round . . . it's cold." The teacher could then encourage a re-working of the three ideas into one sentence: "It's hard, round, and cold." It would be a purposeful and natural sentence-combining experience.

But after struggling with the problem of experiences in sentence combining I found that most sentence combinations could not be placed in experiential activities because of the length of their sentence parts. Spoken memory could not handle such large chunks. But it also appeared to me that such experiences mainly involved speech, not the written medium. Thus, the quandary could only be resolved by integrating the various methods. There would have to be structured lessons, for writing practice (and the problems would have to take place in a regular language format--that is, in context). There also would have to be games and activities, for concrete experience (and these would have to involve the act of writing).

The solution came in providing a partly structured, partly semi-structured program. The structured portion involved a set of 30 sentence-combining lessons, one-third of which were introductory lessons with humor, name-dropping, and occurrences at school as the content; the rest of the lessons used article, story, and puzzle-like formats. The experimental games, activities, and experiential exercises focused on the written medium in ways that involved children in concretely manipulating written forms, in verbally building and taking apart written forms, and in writing games.

The control portion followed a language arts program which consisted mainly of free-writing assignments and activities. The control students also were given supportive games, activities, and experiential exercises in time
amounts equal to that given experimental students, but their games, etc. were not based on sentence-combining methods.

The six-month study involved all fourth graders at Powell School in Mountain View, California. They were enrolled in two classrooms, one taught in a traditional manner by Charmion Southerby, the other taught open classroom style in combination with fifth graders by Paul Goldstein and Jeff Wilson. Of some 52 fourth graders who began the program, 16 moved, leaving 32 students to complete the study.

The students were randomly assigned to control and experimental groups within their classrooms. The three teachers participated equally in both the structured, experimental and control instruction. I directed all the students in experimental and control games -- in a separate room. The students were involved in the project 30 minutes a day, four days a week, working on structured materials and assignments one day, then moving to the games and activities room the next.

The writing data was stimulated by silent cartoons and movies, by topic paragraphs, and by experiential presentation. Four weeks were set aside for collecting the writing before and after the experiment.

The analysis of writing involved quantitative measurements of syntactic development. Hunt's T-unit was used to investigate words per T-unit: clauses per T-unit: words per clause; and noun, adjective, and adverb clauses per 100 T-units. Some 35 T-units (approximately 300 words at this level) were collected from each student at pre- and post-treatment. The collection represented their free-writing efforts over four modes: argumentation, description, exposition, and narration. By using the four modes, I hoped to meet a challenge put forth concerning sentence-combining studies by Christine San Jose who claimed that syntactic complexity varies by mode. By including all four modes, it was hoped that a more valid count could be obtained.
In addition, the writing quality was evaluated by three teacher-writers. In using general impression methods, I believed their judgments could be validated in at least two ways. In the first place, they had been writing and teaching at this level for a number of years; and secondly, editors were in agreement that their writing merited publication. These arguments met the consistency criteria posed by Stephen Wiseman. Wiseman claimed that general impression methods are valid and economic ways to evaluate composition. The judges read pairs of writings matched by sex and mode from both pre- and post-treatment productions. They also evaluated pairs of pre- and post-treatment writings from a subsample of single students for a determination of quality gains.

In analyzing the quantitative data, the results showed that experimental students made significant gains in five out of six factors. In words per T-unit (w/T), the most reliable factor for measuring syntactic complexity over the grades, the experimental group moved from 8.15 to 9.99—an increase of 1.83 w/T. The control group made significant gains in two out of six factors. Its words per T-unit measured 8.46 at pre- and 9.53 at post-treatment—an increase of 1.03 w/T.

The gain scores were compared by t-tests and no significant differences were found. Since I felt it was fairer to allow both groups to participate in a half-structured, half-semi-structured program—thus allowing the control students access to games and activities (somewhat similar to a Moffett-style program)—it was not expected that the control gains would be similar to control gains in earlier studies. For instance, Mellon's control group gained .26 w/T and O'Hare's control group gained .27 w/T. A more normal language arts program most likely would have resulted in much less gain for the control group. But I felt that sentence combining dealt with the writing aspect in language arts and therefore should be matched with what I felt was the best
program in writing currently available.

The groups' differences might also be described by comparing their percentage gains. Using the control group's gains as the base in each factor, the experimental group posted a gain that was 71 per cent higher in w/T; 64 per cent higher in clauses/T; 78 per cent higher in words/clause; but only 2 per cent higher in noun clauses and 8 per cent higher in adverb clauses. However, in adjective clauses—which Hunt has pointed out as one of the most important developmental areas for syntactic growth from fourth to twelfth grade—the experimental group's gain was 644 per cent higher.

Turning to quality, the teacher-writers judged the writing of single students to be better at post- than at pre-treatment. But there was no significant difference found between the control and experimental productions—either at pre- or post-treatment. Thus, although student writing appeared to gain in quality overall, both groups' productions were judged as being relatively equal in any quality gains.

General impression judging methods were given some support in the study. In the larger judgment (experimental vs. control), the judges' choices were found to agree significantly. However, the second judgment (quality gains), was marred by scheduling problems which might have had an effect on the lack of significant agreement here.

In summary, this study demonstrates that a grammar-free program of sentence-combining lessons, backed by games, activities, and experiential exercises, can encourage syntactic growth in the writing of fourth-grade children. It is also clear that games and semi-structured activities provide a valuable supplement to a language arts curriculum.

Since sentence combining is gamelike in itself, it appears to be psycholinguistically motivating in a way that calls for the mind to exercise its inner potential in successful directions (somewhat like muscles enjoy being
stretched in the directions they were meant to be stretched). The addition of games and activities to the approach, therefore, seems to be an important part of the writing experience at the elementary level.

In my research I produced 22 games and activities in the sentence-combining style. They ranged from "S-C Poems", a simple card manipulation exercise, to "Sentence Partners," a concrete activity involving competition and writing.

In "S-C Poems," for example, twelve lines that rhyme are placed on 3x5 index cards, with the numbers 1 through 12 written on their backs. The children mix up the cards, then try to arrange them into a meaningful whole, using rhyme as the clue. In ordering them in lines, the children are exposed to several combining possibilities:

1. I know a boy
2. Who sleeps on a toy
3. And falls to the floor
4. Before his first snore
5. Which roars through the house
6. And wakes up a mouse
7. Who creeps up the stairs
8. Causing creaks and scares
9. That wake up Miss Floy
10. Who yells at the boy:
11. "Stop making that noise
12. Or I'll break all your toys."

The children can check their attempt by turning over the cards and seeing if the numbers occur in order.

In "Sentence Partners," small signs of light cardboard are hung by paper clips attached to short strings about the neck of each student. The signs carry pieces of sentences, such as:

(\begin{tabular}{ll}
A. I know & E. that this class will end. \\
B. I wonder & F. when we will get another vacation. \\
C. I hope & G. you will be good to me. \\
D. I believe & H. this period will be fun. \\
\end{tabular})

The first four sample signs (A-D) can be joined to the second four (E-H) in many ways--except for B which only fits with F, and C-D which do not go with
The way some signs can go with others while some cannot is the main strength of the game, allowing the children to seek out "partners" in the given amount of time, and by writing down full sentences, win the game. The one to write the most complete "real" sentences is the winner. The signs can be varied for "silly" results. Also, the game can be directed exclusively to noun, adjective, or adverb clauses. Variations can include using the above list to discover what types of pieces go with other types.

When we talk about research for Monday morning we're usually interested in providing practical aids for immediate use in the classroom. Sentence combining and games, activities, and experiential exercises in sentence manipulation, provide such aids for teachers. Students need only a few exposures to sentence combining to experience the pleasure of playing with meaning and form in language.

Through such insights as those provided by James Nev in "Notes Towards a Psycholinguistic Model of the Writing Process," we may soon come to know more about the specific structures that children can be expected to control within certain age-grade ranges. But teachers needn't wait to begin applying current insights. We know that children will develop a facility to use alternative structures through sentence combining experiences. The structures they attain may provide the necessary stepping stones to even more complex structures. And those they cannot immediately handle may yet stretch their syntax-manipulating skills in the right directions, thereby preparing them
for easier entry at the appropriate linguistic time.

The sentence combining/sentence manipulation method may be the most revolutionary concept to be added to the language arts curricula in many years. Returning to our mathematical analogy, it may be that someday a language arts curricula may be based on meaning manipulation through problem solving in grammatical form and function. If this is the wave of the future, we should take care to remember that purpose, context, and enjoyment lie at the root of language development, and that structured and activity-based instructional methods can work together to provide valid encouragement for language performance abilities.
RESOURCES


