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AUTHOR Cronnell, Bruce


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INSTITUTION Southwest Regional Laboratory for Educational Research and Development, Los Alamitos, Calif.
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ABSTRACT

One goal of computer-based instruction in writing is to help students to edit their compositions, particularly those compositions written on a word processor. This can be accomplished by a complete editing program that would contain the full set of mechanics rules--capitalization, punctuation, spelling, usage--appropriate for the grade level of the intended user. The specific rules that students would practice could be decided in three ways: (1) the student would choose from a menu those rules that need to be practiced, (2) the teacher would choose those rules the student should practice, and (3) the computer would assign students to the appropriate rules on the basis of pretest scores. After content for practice is assigned or chosen, the student is given the option of reviewing the rules to be practiced. Following this optional rule review, students receive three kinds of practice: choice, correction, and dictation. The choice section provides basic practice in discriminating the correct application of the rules under study. The correction section begins with instruction on the why and how of editing--with specific text-editor procedures on the computer. For the dictation section of the program, the computer presents sentences orally, and the student types in the sentence. Each section provides the student with feedback and evaluation. If the student does not meet the criterion for the correct responses in each section, instruction is terminated and the student goes back to the teacher for additional help. (HOD)

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## COMPUTER-BASED PRACTICE IN EDITING

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### ABSTRACT

General specifications are provided for computer-based practice in editing text mechanics (capitalization, punctuation, spelling, usage). The student works with 2-4 mechanics rules at a time. For each set of rules, three kinds of practice are provided: (1) choice (between correct and incorrect sentences); (2) correction (of incorrect sentences); (3) dictation (i.e., typing dictated sentences, with computer analysis of student input).

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## COMPUTER-BASED PRACTICE IN EDITING

Bruce Cronnell

One goal of computer-based instruction in writing is to help students edit their compositions, particularly those compositions written on a word processor. This paper outlines possible procedures for teaching students to edit for mechanics errors in their writing. The procedures also provide students with a review of mechanics--and could even be utilized for practice when students are receiving initial instruction on mechanics.

A complete editing program would contain the full set of mechanics rules--capitalization, punctuation, spelling, usage--appropriate for the grade level of the intended users.* The specific rules that students would practice could be decided in three ways:

1. student choice: the student would choose from a menu those rules (or that rule) she/he wished to practice.
2. teacher choice: the teacher would choose those rules (that rule) a student or a group of students would practice. Teacher choice could be implemented in two ways. First, the teacher could tell students to select specific rules from a menu. Secondly, the teacher could enter students' names and the rules to be practiced, and the computer would automatically place students on the assigned rules.

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*For convenience, this paper is illustrated with examples of low-level capitalization instruction.

3. by pretest: the computer would assign students to the appropriate rules on the basis of pretest scores. The pretest would be of the form described in the "Correction" section (below) and would begin with the simplest rules, moving to more difficult rules as students displayed proficiency on the easier ones. The computer would automatically assign practice on those rules for which students performed below criterion.

Although these three procedures could permit practice with only one rule, practice would be more effective if 2-4 rules were covered at the same time. With several rules, students cannot simply look for a specific structure, but rather must discriminate among various structures. For the pretest option, the computer would continue testing until 2-4 rules were found for which students performed below criterion. For the student-choice and teacher-choice options, the number of rules to be practiced could be controlled in two ways:

1. The program could "insist" that the student or teacher choose 2-4 rules.
2. The program could permit the student or teacher to choose only one rule, but if only one rule were chosen, the computer would automatically assign 1-3 additional rules for practice (rules that were at a similar difficulty level to the one chosen).

After content for practice is chosen/assigned, the student is given the option of reviewing the rules to be practiced. Following this optional rule review, students receive three kinds of practice: choice, correction, dictation.

Choice

The "Choice" section provides basic practice in discriminating the correct application of the rules under study. Two sentences are presented, one with correct rule application, one without correct rule application; e.g.:

Which sentence is correctly capitalized?

a. Where is my friend's car?

b. where is my friend's car?

The student types the letter of the correct sentence.

If the student types the correct letter, another item is presented. If the student types the wrong letter, the computer presents the rule that should have applied (for the above example, "The first word in a sentence is always capitalized"). Then the incorrect sentence is displayed, with the error graphically highlighted (for the above example, "w"). Then the error is corrected by the computer (e.g., "w" changes to "W") and a comment is displayed (e.g., "Since Where is the first word in the sentence, it must be capitalized"). Then another item is presented.

New items are presented until the student has responded, for each rule, with either three correct answers or three incorrect answers. (Once the student has responded either correctly to three items for a rule or incorrectly to three items for a rule, no additional items for that rule are presented.) When the student has responded correctly to three items for each of the rules being studied, she/he moves to the "Correction" section. If the student has responded incorrectly to three

items for one or more rules, additional practice is provided for each rule with three incorrect items.

After another example of the rule is presented, additional practice consists of more sentence pairs to choose between. If the student now reaches criterion on all rules receiving additional practice, she/he moves to the "Correction" section. If the student still does not meet the criterion of three correct responses to the rule before three incorrect responses, instruction is terminated; the student needs help from the teacher.

Correction

The "Correction" section begins with instruction on editing--why we edit (because we make mistakes when writing) and how we edit (with specific text-editor procedures on the computer).

Then a sentence containing an example of a rule under study is presented. The student is asked whether the sentence is correct, and types "yes" or "no." If the sentence is correct and the student types "yes," another item is presented. If the sentence is correct and the student types "no," the computer tells the student that the sentence is correct and displays the rule being applied in the sentence; then another item is presented.

If the sentence is incorrect and the student types "yes," the computer demonstrates how the sentence should be written and displays the rule; then another item is presented. If the sentence is incorrect and the

student types "no," the student is asked to correct the sentence. If appropriately corrected, another item is presented. If not appropriately corrected, the correction is demonstrated by the computer and the appropriate rule displayed; then another item is presented.

Student performance is tallied for "Success" or "Failure" on each rule:

Success: Three "yes" responses to correct sentences and three "no" responses to incorrect sentences, followed by three corrections of these sentences. (Once a student has had "Success" with either correct sentences or incorrect sentences [including appropriate corrections] for a rule, no more items of that type [i.e., correct/incorrect] are presented for that rule.)

Failure: Three inappropriate responses to items (either "no" for correct sentences or "yes" for incorrect sentences) or three inappropriate corrections of incorrect sentences.

When a student has "Success" on all the rules being studied, she/he moves to the "Dictation" section. If the student has "Failure" on one or more rules, additional practice is provided for each rule with "Failure."

After another example of the rule is presented, additional practice consists of more sentences to process as described above (i.e., to determine whether the sentences are correct, and, if incorrect, to correct them). When the student has "Success" on all the rules receiving additional practice, she/he moves to the "Dictation" section. If the student again has "Failure," instruction is terminated; the student needs help from the teacher.

Dictation

For the "Dictation" section of the program, the computer presents sentences orally, and the student types in the sentence.* If the sentence is typed correctly, another item is presented. If the sentence is not typed correctly, the computer checks for errors and prompts the student to correct the sentence. The specific checking routine would depend on the type of rule being practiced; an example of a checking routine for capitalization is as follows:

1. Check for the expected capital letter and prompt student to add a capital letter. (This checking continues for all capital letters needed in the sentence.)
2. Check for a period at the end of the sentence and prompt student to add a period.
3. Check for the correct number of words, prompt student to add or delete words, and repeat sentence orally.
4. Check for individual word matches (misspellings), prompt student to correct word, and repeat sentence orally.

If, after such a checking routine, the sentence is still not correct, the computer displays the correct sentence and then presents another item. Additional items are presented until the student has responded, for each

*Oral presentation of sentences by computer presents minor problems. While tape-recorders provide good aural quality, they do not allow easy random access to the sentences used. Voice synthesizers permit such random access, but the current aural quality of synthesizers apparently leaves something to be desired; however, the quality of voice synthesizers is improving.

rule, with either three sentences with correct rule use or three sentences with incorrect rule use. (Once the student has responded with either three correct or three incorrect rule uses, no additional items for that rule are presented. Note: Although non-rule errors are processed, they are not counted as part of this correctness criterion.) When a student has correctly completed three sentences for all of the rules being studied, instruction for those rules is ended. (And the student studies more rules in the program as needed.) If a student does not correctly complete three sentences for one or more rules, additional practice is provided for such rules.

After another example of the rule is presented, additional practice consists of more dictated sentences. When the student reaches criterion on all of the rules receiving additional practice, instruction is ended for the current set of rules (and the student studies more rules as needed). If the student does not meet criterion during additional practice, instruction is terminated; the student needs help from the teacher.

## CONCLUSION

This paper has outlined how instruction in editing might proceed, using a computer to interact with students. Although specific content has not been provided, specifying mechanics content is a relatively straightforward--if time-consuming--task. In addition, computer programming, while also time-consuming, is relatively straightforward, making use of the same or similar routines for a variety of content.

Given sufficient user interest and sufficient resources, such computer-based instruction in editing could be a reality.