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ABSTRACT

Intended for teachers, this digest shows that the computer can offer many efficient tools for expression, student control of writing, and instruction beyond the grammar and spelling drills most commonly associated with computers. The digest discusses the goals of the language arts curriculum, the role of the computer in the language arts curriculum, the types of computer software to use, some methods for integrating computer use into the curriculum, the expectations for student use, ways teachers can become acquainted with computer tools, and introducing young children to the computer keyboard and computer programs. (EL)

ERIC Clearinghouse on Reading and Communication Skills

ERIC Digest

Using Microcomputers in Elementary Language Arts Instruction

The best way to integrate computers into the language arts curriculum is to focus on the students and the curriculum—not on the computer. Of course, it is important to understand the capabilities that computer hardware and software offer for language instruction. However, the key to using the microcomputer wisely is to consider it in relation to teachers' and students' goals and needs.

What Are the Goals of the Language Arts Curriculum?

Elementary language arts instruction is usually devoted to helping children understand language critically and express themselves in speech and writing. But individual students' needs differ from the first years of school. Some children are able to write long pieces fluently, while others struggle with the mechanics of handwriting. Spelling is more difficult for some students than others. Some children like to write, and they write a great deal. Others don't like to write but are quite talented orally. Such diversity is a problem for elementary school teachers because meeting individual needs requires sensitivity to a variety of students, orchestration of the elements of the classroom environment (desks, books, visual aids, sounds), and ideas for stimulating all children to use language in many ways.

What Is the Role of the Computer in the Language Arts Curriculum?

One of the main reasons some teachers find computers attractive is that computers can present and monitor "individualized" instruction to many students—each at his or her own pace. Many computer programs provide spelling and grammar drills that students can work through, pursuing supplementary or "branched" lessons that are presented if they give incorrect answers. Such programs free teachers from having to repeat the same information many times.

Although individualized drills may help students with specific skills, using the computer only as a "tutor" does not address the goals of the language arts curriculum or all the needs of students. Often, students with the weakest skills use the computer only for drills, while more "gifted" students are allowed to use the computer word processing programs for composing. The problem is that the "weaker" students have limited written language skills because they have not written in interesting, meaningful contexts. These students benefit from writing and sharing stories just as much as—and perhaps more than—students who are more proficient. All students should be given a chance to use the computer as a communication machine.

Computer word processing programs can be used to enhance the communication functions of writing because they provide easy revising capacities. These capacities make collaborating with and responding to a reader's comments easier for students than when they use pencil. Children say that it is physically easier to "say more" in a piece of writing when the addition of details does not involve recopying. Computers also have the capacity to make many copies and neat printed versions of texts.

Electronic mail programs also make writing to communicate with others physically easier. Students find that when they engage in written discussions on the computer (either by exchanging letters on diskettes or by sending electronic mail to students at other terminals), they feel free to write as they would talk.

What Are the Types of Computer Software That Serve in Language Arts Instruction?

Recently, many teachers and researchers have focused on using the computer as a tool to simplify and enhance the writing process. For example, *data base programs* provide research and organizational tools for students. These can be helpful in collecting information before writing. *Prompting programs* offer young writers suggestions on what to include in a given text or how to go about planning it. These programs can also be used to present questions on a topic when the student is ready for help. *Word processing programs* serve students as they compose and revise their writing. According to many teachers and researchers, working on organization, grammar, and spelling in the context of one's own writing is the best way to learn. In this spirit, students can learn more about spelling by running their work through *spelling checkers* when they are ready to start revising or editing. In the process of using the computer to check for possible misspelled words, many students notice other problems or good points in the text as well.

The computer's good memory and its obedience to instructions have also inspired software developers to design *language activity programs*. Teachers who like to provide a variety of structured language activities apart from reading and writing will find that some of these programs involve language experiences that have already been tried in classrooms with other materials. For example, some programs embed spelling in mysteries; others challenge students to complete stories that have gaps or missing links in them. Although some language activity programs make only superficial use of the computer, others exploit the machine storage, interactivity, and processing power so that the activities are more effective, faster, or more fun on the computer.

What Are Some Methods for Integrating Computer Use into the Curriculum?

When planning computer applications, teachers must consider the number of machines they have available. If several classes share one computer, it may serve for demonstrations or as a central mailbox for student and teacher communications. If there is one computer per classroom, students and teachers can use it as a message center and a publishing machine for group projects. Producing a class newspaper is a popular activity on the single-class computer. Of course, students can take turns at the computer to write individual assignments. However, they may need several weeks or even months to complete projects when there is limited access. If a classroom has four or more computers, the possibilities for individual use become more realistic.

Since students are highly motivated to write and even to learn grammar and spelling when they can work on the computer, the machine should be used by all students, not just the individuals in the best or worst situations. Another issue is student access to computers at home. Many teachers are concerned about the fairness of accepting homework on computer printouts from some children when others in the class do not have access to such sophisticated tools. Teachers also wonder whether students who do not have their own computers should have the most access to the limited computer resources in a classroom.

When discussing the question of access, it is important to realize that the meaningful relation of computer activities to learning also determines the usefulness of the tool. It has been shown that extensive writing leads to better writing in the elementary grades. Therefore, if a student writes more when using a word processing program, having extensive access to a computer is important. We also know, however, that children do not improve language skills in a vacuum. Simply having a computer is not beneficial without an environment of guidance and response to student thinking, reading, and writing.

Based on Research and Prior Experience, What Can We Expect if Students Use the Computer?

In the same way that many children began learning from television before there was research on the effects of TV, many children are using computers before extensive formal research has been done. Nevertheless, many researchers and teachers have reported anecdotally that children enjoy writing when they use computers. And when children enjoy writing, they write more. Since professional writers confirm that the best way to improve as a writer is to write extensively, this outcome is encouraging about the future of computer use in the development of written language skills.

Young writers like to use word processing programs because they feel they can create text more easily than when they have to hand-write. As has been mentioned, students can also use the programs to make changes and corrections more easily. Yet, in spite of the enthusiastic anecdotal evidence, formal research has not yet shown that students make more mature revisons simply by using a computer.

Since data base programs, prompting programs, spelling checkers, and other language programs are relatively new additions to the curriculum, there are fewer observations about their effects than about word processing programs. It is clear, however, that students need guidance using such tools.

How Can Teachers become Acquainted with Computer Tools?

The most direct and comfortable way for teachers to take the lead with computers in their classrooms is to use computers for their own work. They can start by using a word processing program to prepare work sheets, reports, and lesson plans. They can put spirit masters in the printer if they need many inexpensive copies of a work sheet. Teachers can also use a data base program to store lesson plans and information about students' progress. A spelling checker might even draw a teacher's attention to a typing mistake in a text. Perhaps most exciting, teachers can use an electronic mail system or message diskettes to engage in written communications with students.

Do Young Children Have Trouble Learning to Use the Computer Keyboard or Computer Programs?

Many children have an easier time learning to use computers than adults do. If an instructor or peer tutor presents small sets of commands as they become useful for a specific task (such as printing out a document), youngsters can learn to use even a complicated word processing program. Young children remember commands quickly—usually after the first time they try them. With good instruction, young children can also learn to touch-type.

Although children approach computers confidently, mastering the operations of the keyboard and word processing programs takes time. At first, children will not write more in the same amount of time as they do with pen. Children in the upper elementary grades who have been successfully using pencils or pens take at least a term to begin to write as much with the computer as they can with pen in the same time. Typing and frequent access to the computer as a writing tool can speed up this process. Even before attaining such fluency, however, students using computers seem to be much more willing to stick to or return to writing tasks.

What Software Should I Buy?

Since new and improved software appears on the market every day, a listing of the best programs to buy is soon obsolete. Rather, the teacher should be aware of the types of programs that he or she would like to use and some of the sources of updates and reviews. EPIE (Educational Products Information

Exchange) and MicroSIFT are resources that offer continuous in-depth reviews of software. Periodicals such as *The Computing Teacher, Instructor, Scholastic Review, Computers in Reading and Language Arts,* and *Classroom Computer News* review software. If you can get copies of software for preview, resources like NCTE's *Guidelines for Review and Evaluation of English Language Arts Software* can be useful.

Summary

This Digest has shown that the computer *can* offer the language arts many efficient tools for expression, student control of writing, and instruction beyond the grammar and spelling drills most commonly associated with computers. These computer tools are most helpful when used in the service of specific goals by a thoughtful teacher relating to the abilities and skills of students as they use language.

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Recommended Resources

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