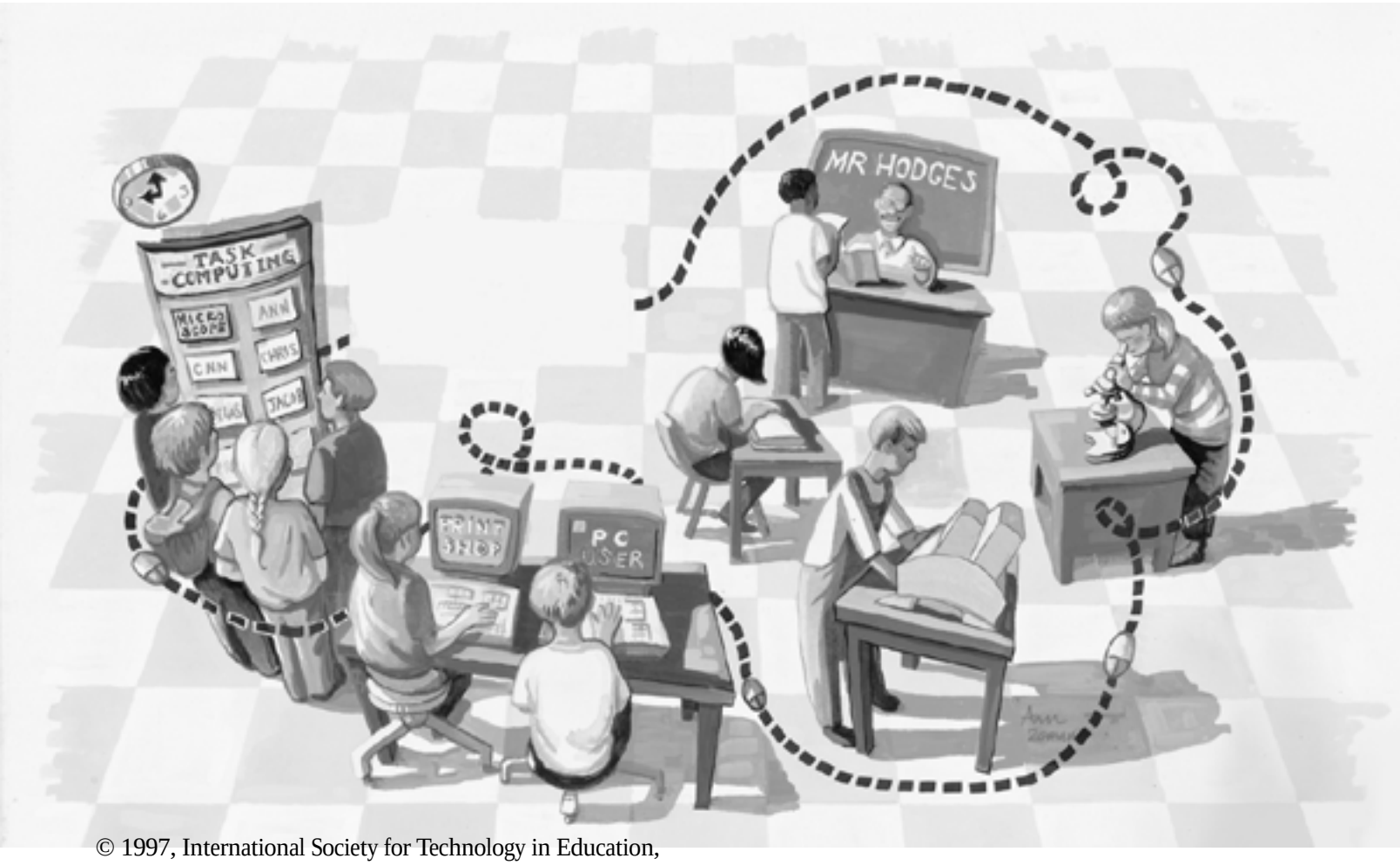
TASKCOMPUTING

By Bob Hodges

Even classrooms with just one or two computers available to them can set aside part of the day where every student uses the computer as a tool to complete a real-world task. Use the model outlined in this article to design a list of tasks for your students that meets your educational technology goals and challenges your students to take full advantage of the software and hardware available to them.



Task Computing is a teacher-friendly, student-motivating strategy for integrating computers into the everyday fabric of your classroom.

Computers are task-specific tools. They help us create, research, plan-write-revise-publish, practice, communicate, educate, calculate, simulate, and present. Sometimes a computer is the best tool for the job, and sometimes it isn't. Occasionally a pencil, some paper, or a book works better. (What a concept!) But watch out, because when a computer is the most appropriate tool, there's nothing more efficient and effective—and for many students more motivating.

Task Computing involves assigning "real-world" tasks to students. The tasks often mimic job skills such as doing research or using a database. Students use classroom computers to accomplish the tasks.

Task Computing is adaptable to any grade level and subject, and curriculum can be integrated into the tasks assigned. Task Computing doesn't require special software or peripherals, and you don't need your own lab to use this strategy—in fact, it can be as effective in the one-computer classroom as it is in the multicomputer classroom. Task Computing starts the day off on a busy and productive note, trains students in specific skills, and encourages them to take responsibility for their own learning.

After initial preparation, Task Computing is wonderfully self-managing. A quick check of a student's final product is all that is necessary during the school day. Five things are required to begin Task Computing:

1. A good reason to get started.
2. At least one computer available for student use.
3. A strategy for assigning tasks.
4. Task explanations and instructions.
5. A strategy for assessment.

Task Computing Helps Students Reach Their Goals

One of the major goals in my district's Five Year Work Plan is to integrate technology into the learning process while using technology as a learning tool. In support of this goal, Instructional Technology Student Benchmarks (ITSBs) have been designed to identify expectations, by grade level, for specific skills. Each grade level has more than 80 skills—ranging from graphics to ethics—for students to master. A portion of the Instructional Technology Student Benchmarks is shown in the sidebar on page 11. The Five-Year Work Plan tells teachers what they should do, and the ITSB tells students what they should do. However, these guidelines contain no information that tells either group *how* it should be done. That's why I began Task Computing.

One Computer Is Enough

While refining Task Computing in my fifth-grade classroom I had four student workstations. No two computers were of the same vintage, and no two used the same operating system. Although I don't think it's possible to have too many workstations in the classroom, four is certainly enough. In fact, in its infancy, I used the task computing strategy with only one student workstation available (See the description of "Blind Mice" on page 9 to learn more about using this strategy in a one-computer classroom).

Task Rotation

In my classroom, we start each day with Task Computing. Each student is assigned one or more academic tasks that require the use of a computer to complete. There are approximately 30 different tasks on the Task Computing Assignment Board at any one time, and I occasionally modify, delete, or create new tasks. The tasks are as diverse as:

- CNN—going to the CNN Web site to retrieve and summarize the Top Story (see the sample assignment "CNN.COM" on page 11).
- Encarta—conducting research assignments using the electronic encyclopedia.
- Boring Sentences—using the thesaurus, dictionary, and other writing tools in Microsoft Word to turn boring sentences into creative rewrites (see "Boring Sentences").
- It's Your Money—using a spreadsheet to create a budget.
- UltraKey—keyboarding practice.
- Cards & Flyers—creating a greeting card or flyer in a desktop publishing program.
- Microscope—using a microscope to view a prepared slide and an electronic encyclopedia to research the subject of the slide (see the "Microscope" assignment).
- Hi, Mr. Hodges—sending e-mail to the teacher (see "Hi, Mr. Hodges").
- The Way Things Work—learning, diagramming, and summarizing how a "common miracle" such as a TV or a refrigerator works.

These tasks were designed for fifth graders. The same tasks could be assigned to middle school students with modifications and higher expectations. More challenging and creative tasks can be designed for high school students. A completely different set of tasks would be used with first graders, however, because task design and selection is

TABLE 1. SOFTWARE REFERENCE LIST

Program	Grade Level	Publisher	Price
CNN Web site, http://www.cnn.com	4–12	CNN	$0, requires Web browser
Encarta 97	5–12	Microsoft	$44.95
MS Works	4–12	Microsoft	$54.95
UltraKey	3–12	Bytes of Learning	$36.95
The Way Things Work	3–12	DK Multimedia	$33.95
Word Builders Audio	5–12	BDD Audio	$9.95
World Atlas	5–9	Microsoft	$36.95

determined by the applications with which the students are already familiar and the availability of age-appropriate educational software. Table 1 shows the basic list of software titles that we use in the fifth-grade class for Task Computing assignments.

The Task Computing Assignment Board

At 9:00 am, students enter the classroom and immediately check the Task Computing Assignment Board. Most are so eager to get going that I have to remind them not to leave their coats and backpacks on the floor in the entryway!

The Task Computing Assignment Board is simply a list of tasks secured to a metal strip with the name of a student next to each task. The student names are attached to small magnets and are rotated each day. The first four names go straight to the computers in the morning while the rest of the class goes through morning housekeeping rituals and begins an assignment on the board. As the first four complete their tasks, they show the results to me and put them in the in box. Then these four students pass their "blind mice"—their computer passes—to the next four students. (A description of how "blind mice" can be used in the classroom is shown on this page.)

If anyone "gets stuck" during Task Computing, we invoke the "Ask Three Before Me" rule. The student automatically asks for help from the other three students who are working nearby before calling on the teacher for help. Most students are more than happy to share their expertise. Task Computing can be a great opportunity for students who don't often play the tutor role in the peer-tutoring equation to show off their skills.

Assessment is Authentic and Simple

Assessment takes place in two steps—both are quick and easy.

Step One. I take 10–15 seconds to check that the task is complete and reasonably accurate before the paper goes into the in box. If there are problems I give advice and send the student back to the workstation. I also use this moment to give specific praise.

Step Two. Later, I look through the papers again, searching for remediation or enrichment opportunities. I might work one on one with a student who didn't understand the assignment or suggest further investigation and development to someone who seemed intrigued by a certain task or subject area.

I don't correct these papers in the traditional sense. I often ignore spelling, grammar, or computation that is problematic—although I do pay attention to a student's individual tendencies. I forego written feedback unless I can remediate a problem more efficiently in writing.

What Are the Benefits?

Obviously, each of these tasks requires far more than computer literacy. Seeing the results of student work on a regular basis helps me to authentically assess how each student is doing in spelling, math, writing, reading, following directions, problem solving, and other important areas.

Task Computing is flexible and adaptable. Classroom priorities and grade-level or subject curriculum are a fundamental part of the well-designed task. Additionally, noncomputer tasks can extend or enhance the assignment menu (see the sidebar entitled "Enhance Your Menu" on page 10). Task Computing can be effective in kindergarten, in high school, or at any level in between. It's easy on the teacher and, best of all, it's fun. Students love using a computer to generate an outcome that contains few "right" or "wrong" answers.

Additionally, I've identified the following seven major advantages of Task Computing:

- Helps integrate technology into the curriculum.
- Enhances computer literacy skills.
- Encourages peer tutoring and cooperative learning.
- Exercises individual initiative.

BLIND MICE

Here's a great strategy for quietly assigning computer access and/or priority in the classroom. Ask the district repair technician for several "dead" computer mice. He or she is likely to have a box of them. Snip the cord about six inches from the end of the mouse (no self-respecting mouse wants to work without a tail, of course!). Students then use these mice as a signal for when it's time to access a computer—they can lay a blind mouse on the desk of the next student in line to indicate that it's his or her turn. Rather than students calling names aloud, this method lets students know that it's their turn without disturbing the whole class or interrupting any projects they are currently working on.

Blind mice can be lots of fun, too. You can name them to correspond with the names of your computers, for instance, or name them after students' favorite sports heroes. My students insist on decorating and naming all the mice in our classroom. They even vie for the right to take them home and care for them over the school holidays!

ENHANCE YOUR MENU

Task assignment lists can be extended by including noncomputer tasks that still require familiarity with technology. Only imagination limits the development of challenging tasks. (As with computers, I prefer machines with headphones. Headphones help all students maintain focus on their assignments.) Some examples from my classroom:

- Word Builder's Audio. Using a vocabulary enhancement tape to learn and use new words.
- Video Learning. Using a TV/VCR combo to watch a video on how tornadoes are formed, the latest in architectural design, or the making of an opera.
- Videodisc Learning. Using a videodisc to zero in on a specific moment in American history that is interesting and exciting.
- Music Appreciation. Listening to classical music on a boombox while reading a critique of the music and the intentions of the composer.
- Fables and Fairy Tales. Listening to a short fable or fairy tale on a cassette deck and then summarizing the plot and the "moral" of the story.

- Requires organization, discipline, and accountability.
- Promotes discovery learning.
- Introduces real-world skills.

I'm sure there are more advantages, but perhaps the greatest one is that it helps students begin to see computers as tools. My main goal is to have students learn while using technology, when the technology use itself isn't the purpose of the activity.

We all know that technology can make accomplishing a task easier and less time consuming. In the final analysis, however, it's the quality and quantity of thought and effort that determines the caliber of the outcome. ■

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CNN.COM

Name

Go out on the Internet to the following address <http://www.cnn.com> and browse around the first page.

Scroll to Top Stories and double-click any story that interests you. Print the article and read it.

Then on the lines below, write five thoughtful quiz questions that you might give another student after he or she had read your article.

MICROSCOPE

Name

Choose a prepared slide that you haven't studied before. Study it and make a detailed drawing with colored pencils in the space below.

On the lines on the back of this paper, write a short description of what you have observed. Then look up the subject of your prepared slide in an electronic encyclopedia and note at least two facts you learned by reading about it.

For example, if the subject of your prepared slide was protozoa, look up protozoa in Encarta, read about it, and then write two facts about protozoa that are new to you.

BORING SENTENCES

Name

Write five boring sentences (for example: The boy walked the dog). Then using descriptive and comparative words and phrases such as adjectives, adverbs, similes, and metaphors, and your imagination, rewrite those sentences more creatively. Want some help choosing great descriptive words? Look in the Dictionary of Synonyms and Antonyms and/or the Thesaurus.

Boring Sentence #1/Creative Rewrite

Boring Sentence #2/Creative Rewrite

Boring Sentence #3/Creative Rewrite

Boring Sentence #4/Creative Rewrite

Boring Sentence #5 and its Creative Rewrite must be done on a word processor. Please type your name, the job title (Boring Sentences), your boring sentence, and your creative rewrite (in a different font). When done, print it and attach it to this sheet. It should look like the sample below:

Ralph McGillicutty —Boring Sentences

The boy walked the dog.

The delicate little Martian boy walked uncertainly down the spaceship's ramp with his huge dog that looked like a hairy hippo on skates.

HI, MR. HODGES...

Name

Send me some e-mail. Remember: Your e-mail should always start with a greeting, such as "Hi, Mr. Hodges." Then skip a line and begin the text of your note. When you are finished, skip a line again and add your closing, such as "Thanks, Emily."

Below are some ideas to write about, but you can write anything you want!

Tell me...
...a secret
...about things you like and/or dislike
...about your family and friends
...about a dream or hope
...about things that make you nervous or fearful
...about the best or worst thing that ever happened to you
...about your hobbies and after-school activities
...about me or you in a poem
...how things are going at home or in class
...about a favorite pet or relative
...some things that are interesting or funny about you

My e-mail address is hodgesb@maple.issaquah.wednet.edu

Write your e-mail address here:

INSTRUCTIONAL TECHNOLOGY STUDENT BENCHMARKS

Grades 3–5

When the district Five-Year Educational Work Plan is fully implemented, the majority of Issaquah students will be competent in the following areas…

Basic Operations & Concepts

- Demonstrates skills at the K–2 level
- Cuts and pastes electronically
- Connects peripherals
- Saves & prints to different locations
- Uses relevant file names
- Distinguishes between electronic and hard copy
- Trouble shoots: check chooser
- Backs up data
- Creates folders
- Formats disks

Productivity Tools

Word Processing

- Demonstrates K–2 skills
- Creates, names, and saves a new document to a folder
- Makes basic formatting changes: fonts, styles, and so on
- Edits a document: select, copy, cut, paste
- Uses spell check
- Typing speed is faster than hand writing
- Uses correct keyboarding practices
- Creates, edits, saves, retrieves, and prints a document
- Uses a word processing program to copy and move text
- Finds and opens a saved document
- Produces a two-page document with text and graphics with editing

Database

- Demonstrates K–2 skills
- Introduces simple database software
- Enters data into tutorial/template databases
- Sorts information
- Understands the parts of the database: fields, records, etc.
- Identifies computers as tools for accessing current information
- Uses a prepared database to enter and edit data
- Opens an existing database file and browses through the contents
- Uses the sort comment to alphabetize the records within the file
- Moves through fields of a record using the tab key
- Creates a new record to add to an existing database file

Spreadsheet

- Introduces simple spreadsheet software
- Demonstrates charting and graphing functions
- Enters data into tutorial/template spreadsheet
- Opens an existing spreadsheet and browse through the contents
- Selects different cells within the spreadsheet using the mouse
- Changes the text and numerical data in the spreadsheet
- Prints a spreadsheet

Graphics

- Demonstrates K–2 skills
- Manipulates graphics
- Imports graphics into graphic program
- Designs and creates a graphic electronically
- Adds graphic elements using the graphic tools: line, shapes, color, etc.

Multimedia

- Navigates through an existing hypermedia environment such as an electronic encyclopedia
- Uses the search tool to locate specific information
- Operates a VCR
- Operates a laserdisc player

Presentation

- Demonstrates K–12
- Explores options for presentations
- Creates simple video, laserdisc, or multimedia presentations

Communication Tools

Research

- Demonstrates K–2 skills
- Telecommunicates to King County Library System independently
- Telecommunicates to retrieve, download, select, and present pertinent information
- Uses the research process (see LA curriculum)
- Uses Boolean keyword search strategies
- Cites sources
- Creates library bibliographies
- Uses the Internet to find information

Communication

- Uses electronic mail system
- Downloads and prints information

Network

- Downloads and prints information
- Saves to appropriate location
- Logs on to and off of an online service independently
- Accesses a school- or districtwide Web page

Ethics

- Demonstrates K–12 skills
- Distinguishes between published and private information
- Introduces copyright issues
- States that violation of the copyright law is a crime
- Observes copyright laws
- Understands Internet/online personal safety issues
- Uses district Internet policy
- Explains ways technology influences our lives
- Understands the concept of copying materials and programs as illegal
- Distinguishes fact, opinion, bias, and point of view when using electronic information
- Describes the need for protection of software and hardware vandalism

Adapted from the Issaquah School District's "Instructional Technology Student Benchmarks."