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ABSTRACT

This paper describes one Florida school's experience with the Model Technology Schools (MTS) pilot program, and proposes a poetry curriculum for K-12 education that incorporates laserdisc technology for student presentations. Webster Elementary School in St. Augustine was the smallest of five schools chosen for the MTS program to demonstrate the effective use of technology in education. During the planning and implementation years, in-service technology training was provided for teachers and a computer network was installed throughout the school. All technology was geared toward active student learning by individuals or in small groups. To incorporate visuals into their oral reports, students used slides and videodiscs. Teachers were asked to indicate how the new technology changed their instructional methods. Their comments included: more emphasis on writing skills/word processing; a variety of and better presentation methods and materials; more hands-on student activity; and increased opportunities for working with individual students. In addition, a college course in video technology (taught by the author) demonstrated the effectiveness of using a video format for student performance of poetry that could be used to encourage the active learning of poetry in elementary and secondary education. The activities in the proposed curriculum would use laserdisc technology such as that used in the Webster MTS program. (AEF)

THE MODEL TECHNOLOGY SCHOOL: TOWARD LITERACY THROUGH TECHNOLOGY

by
Raymond J. Schneider

In 1985, the Florida Model School Consortia Act addressed strengthening the public school system by establishing prototype technology throughout the state. The Model Technology Schools (MTS) program was set up 'to research and demonstrate the effective use of technology in instructional deliver and enhancement.' Literacy is a strong focus area in the five model schools.

Literature has long been the favored tool of literacy--familiarity with the classic texts of a culture, its crafted expression of feeling, thought, imagery, and language style shapes the aesthetics and ethos of the culture wherein it lives. Of all literature, poetry most appropriately preserves the themes and forms of cultural expression. Yet, through a lack of understanding and appreciation, poetry has become a marginalized, even endangered, subject in English education today.

I propose a poetry curriculum structured with increasing complexity for K-12. Student understanding and appreciation of poetry will be enhanced through the medium of performance, made immediately accessible via laserdisc technology. The laserdisc performances will allow sound, music, and dance into the figures and the forms of poetry. This will pull poetry out of its traditional print bias and into the verbo-visual tech culture where it belongs.

The Florida Model School Consortia Act

In 1985, the Florida Legislature passed the Florida Model School Consortia Act (228.0855 Florida Statutes) to strengthen the public school system by establishing prototype technology throughout Florida (UCF/DOE, 1992):

> Their mission is to experiment and conduct research on how educational technology can be most efficiently and effectively incorporated into the public schools. The initial goal was to learn how to use technology to best prepare students to adapt to the rapid changes in society brought about by the infusion of technology in all facets of life. At the same time, the project should discover how to prepare teachers to incorporate technology into their teaching, learning, and management functions. (pp. 20-31)

Schools throughout Florida were invited to submit proposals to meet the objectives of the new statute. The Model Technology Schools (MTS) Consortium Committee selected five schools (two elementary and three secondary) for inclusion in the project. An MTS Facilitator was funded for each of these schools to oversee the ongoing school project and serve as a resource person for all school personnel.

Webster Elementary Model Technology Pilot Program

Webster Elementary School (K-5) in St. Augustine was the smallest of the five schools chosen for the MTS pilot program. A committee of public school administrators, university consultants, and local business partners had worked with the Webster principal, teachers, and parents to develop a concrete plan for their 5-year model technology grant program. All Webster teachers were asked to identify specific ways technology could enhance their class preparation and instructional presentation, and to suggest specific software which could meet their needs. Many of the teachers' suggestions

were incorporated into the successful grant proposal which emphasized teacher training.

The 1988-89 Planning Year

Initially, there was some resistance to implementation of the MTS program at Webster, so teachers were given the opportunity to transfer out. None did so. In-service training began during the initial planning year; every member of the Webster staff (instructional and non-instructional) took part in the program. The technology they worked with included CD-ROM, interactive video, laser videodiscs, video recorders, computer hardware, and several different software applications. Teachers earned in-service credit, released time, and limited stipends as incentives to participate actively in the program. By the end of the 1988-89 school year, each teacher had logged over 40 in-service training hours.

Under the guiding principle that curriculum should drive the technology, the teachers developed a list of *hard to teach* areas, by grade and subject matter, and began to identify specific technology to facilitate instruction in these areas. Hardware and software were prioritized and purchased as the MTS grant money became available. Teachers were encouraged to check out equipment and software for home practice.

The Implementation Years

During the 1989-90 school year, in-service training continued two days a week, with an additional focus--hands-on student involvement with the new technology. At the end of the school year, Webster students produced a videotape to illustrate this new involvement.

In 1990-91, an Apple-Share network was installed throughout the school. The teachers chose Macintosh workstations as most suited to their needs and computer skills. Cabling was run simultaneously for this network of teacher workstations, as well as the classroom phone lines and closed circuit television system planned for later stages in the grant. This was a difficult and expensive process, given the cement block construction of the original (1959) building and the presence of fire walls throughout (Eason, 1992).

The Apple Share LAN has been useful for sharing information such as worksheets or project notes with other teachers. As an additional incentive to teacher involvement, all communications from the school administration are sent via electronic mail. The network is also used in teacher-parent communication. Parents can dial into the Teacher's voice mailbox 24 hours a day to learn what is going on in the classroom, the weekly spelling list, field trips that are planned, etc. According to Webster MTS Facilitator Cathy Hutchins (Schneider, 1993), this networking brings down the walls between the classrooms and encourages teacher-sharing even across grade levels. However, Webster has already outgrown this limited access network.

Within the 93-94 school year, Webster will upgrade to a multi-use Novell network with on-line classroom access to the school media center. Recognizing that the idea of an individual classroom workstation for each student is not financially feasible, the goal at Webster is to have five networked workstations in each classroom.

Active Learning

All technology is geared toward active student learning by individuals or in small groups. This goal was based on observation of students in the IBM and Apple labs and at the five Macintosh workstations currently set up in the school Media Center.

Use of the new technology is especially evident in the kindergarten and first grade classrooms, where interactive software packages are replacing the basal readers. The software monitors individual student progress and builds the cumulative student record. This frees the classroom

teacher to work with individuals or small groups as needed. *Expert* students are identified and given extra media access so they can be an in-class resource to fellow students.

At Webster, there is little student enthusiasm for the old-style handwritten research report, especially in the area of science. Students are encouraged to use the computer as a word processor. Their final reports are output on one of the three laser printers that are part of the system.

For classroom presentations, students access slides and videodiscs, sequencing the media segments, adding titles, and incorporating these visuals into their oral reports. Thus, modern technology actually encourages student creativity and imagination. Students at the media center workstations build programs, save to a videotape, and then modify as needed to show in their classrooms. The Media Center is currently experimenting with CDI (Compact Disc Interactive), where the program is developed at the workstation and written onto a CD using a mouse.

In much the same way, teachers use scanned original art or purchased image banks to build instruction modules for presentation to the whole class, small target groups, or even individual students.

The new multi-user network with five classroom workstations will greatly facilitate student and teacher access to all available media. Slides, film strips, laser discs, video tapes, and other resources are currently being catalogued on an automated library system for classroom use.

The Hypercard software originally purchased proved to be very difficult for many teachers to learn since it requires programming knowledge. However, the Media Specialist and seven of the *expert* teachers have programmed Hypercard stacks and made these programs available to other teachers. The new Hyperstudio software is much faster and more user-friendly for the media novice who is assembling a classroom presentation.

Closed Circuit Television

In January of this year, Webster's closed circuit television studio became operational, complete with two commercial Panasonic cameras, line and camera monitors, and a switcher. Grades 3 and 4 produce the daily news show. Students in grades 1 and 2 handle the weather and features, respectively.

Project Evaluation

One key component of the Florida MTS project was ongoing research and evaluation within each model school, which would be shared with schools throughout the state. Ongoing research projects at Webster include surveys of use of the technology by teachers both in-school and out-of-school. Although all the technology was made available, teachers were encouraged to use the equipment they felt best met their own instructional goals and needs. Survey data indicate an average use of 1.97 hours per day for each of the 43 participating teachers.

Teachers were asked to complete reports indicating how the new technology has changed their instructional methods. Their comments included the following:

1. More emphasis on writing skills/word processing.

2. Variety of presentational methods.

3. More hands-on student activity.

4. Increased opportunity for working with individual students.

5. More organized presentation of material.

6. Better classroom visuals (videodiscs).

Current surveys indicate that the teachers use the technology more for inter-teacher and teacher-parent communication and for improved record-keeping than they do for actual instruction. MTS Facilitator, Cathy Hutchins, estimates a 3-5 year learning curve for integrating technology into everyday classroom curricula (Schneider, 1993). However, as teachers' level of technological expertise increases, a corresponding increase in instructional use is anticipated.

Webster teachers have one day a month released time to plan the use of technology in their classrooms. Curriculum planning software has been installed at each teacher's workstation. A key part of the Webster MTS program has been early identification of expert teachers whose enthusiasm for and creative use of the new technology sets them apart. These expert teachers are sent to special training programs, and serve as in-school resources for their fellow teachers.

Long-term follow-up of student skill acquisition would be an ideal evaluation tool, but this has not been possible. Construction of two new schools in the district, and the resultant shift of students has left only 33 students at Webster of the 900 who were there during the initial year of the grant.

Literacy and Technology

Although literacy is a fundamental goal of the MTS program, much of the available software is designed for science and math. Literature has long been the favored tool of literacy--familiarity with the classic texts of a culture, its crafted expression of feeling, thought, imagery, and language style shapes the aesthetics and ethos of the culture wherein it lives.

Poetry and Culture

Of all literature, poetry most appropriately preserves the themes and forms of cultural expression. Thus, poetry celebrates and preserves the sensibility of each culture. American poetry comes up from the biblical sadness in the parallelism of African-American spirituals such as *Deep River* and *Go Down, Moses* and Blues poetry to the fearless free verse and industrial vigor of the American Midwest. America grew from the informal, blank verse of Robert Frost's New England to the small town free verse epitaphs of Edgar Lee Master's "Spoon River Anthology" (Masters, 1962), from the syncopated jazz poetry in the chants and ballads of Vachel Lindsay's tribute to the American dream to the militant elegies of the same dream by "Beat" poets Lawrence Ferlinghetti and Le Roi Jones.

Yet, through a lack of understanding and appreciation, poetry has become a marginalized, even endangered, subject of modern English curricula in American schools.

This author's immediate teaching contact with the students at three universities (Eastern Illinois University, University of Bridgeport, and University of South Florida) has reinforced the conviction that the figures and forms of poetry, and, consequently, the cultural themes found in poetry that make up the ethos of our country are seriously neglected at both the elementary and secondary levels of education.

The result is that much of the richer levels of national expression historically embedded in the language of poetry have yielded to the peripheral sound-and-sight bites of commercial television. Moreover, so much of lasting value that is offered on television is spectator-centered, prioritizing passive viewing.

Poetry and Active Learning

The presumption of technology-based education, such as the MTS program, is that any new knowledge and instruction would include an active learning component employing interactive television methodologies. While these practices are in place and ongoing in areas of science, geography, biology, and some

language arts, the introduction of poetry as an ingredient of language arts curriculum is rare.

For the past 30 years, the present author has been adapting and staging prose and poetry while teaching college students communication as performance. Recently (this past year), during a course in video performance, the idea of exploring how computer technology can make such performance more accessible to students emerged.

Poetry and the Video Medium

This course featured the American classic, "Spoon River Anthology," a series of 244 verse epitaphs, created by Edgar Lee Masters in 1915. This work gives voice to the characters of a small Midwestern town who are interlocked by fate (Masters, 1962).

The students in this course first took these short verse epitaphs and presented them directly as soliloquies to the camera. They gradually began to see that, though they had met the television requirement of intimate immediacy, they were still word-bound. In the imaginative autobiographies that the students created to give background to the characters, there was a heavy imbalance of verbal over visual discourse. Like so many television news programs and educational television today, they were preserving what was essentially a radio format.

With the cry, "Tell a vision!" the group moved to image sequence. Recognizing that MTV and television commercials held an *image bite* of slightly less than two seconds, the poems were reprocessed to fit a lyric flow of image changes that might be suitable to the video experience. To explore this new production concept the students focused on the introductory poem, "The Hill," (Masters, 1962, p. 23-24) that summarizes "Spoon River Anthology."

The class was divided into alternating production/talent and talent/production groups to come up with two separate video versions of that same introductory poem. The production groups when formed had creative authority, of course, over their respective talent group during the rehearsal and shooting process.

The outcome of this project was a leap forward in the success of this beginning class. The mutual engendering of creative solutions to image flow challenges kept the class at these projects through the 105-minute dinner break between the two scheduled class sessions.

Time and time again, they worked in the studio from 2:00 to 6:15. The resultant videotapes ably illustrate the success of this *active learning* process; the matched dissolves, superimpositions of ghost-like conversations among the dead town residents, drawing the face of the narrator through the tombstone image, embedding the tragic rites of final passage from out of the church hill, and so forth were some of their experimental imaging effects.

Toward a New Poetry Curriculum

This successful experience, with students handling the performance of poetry in a video format, suggests the possibility of such video *products* being used to make poetry more available and appreciated as an elementary educational tool. If the forms and figures of poetry, especially in the heightened and active forms of children's poetry, could be entered into by means of modern technology, elementary and secondary school students might involve themselves actively in the richest texts of their culture in an increasingly sophisticated curriculum. What I speak of is as old as Greek culture itself, where the oral text of Homer's epics were communally entered into at Panathenea (Bahn & Bahn, 1970).

Now, it became clear that poems as simple and profound as Robert Frost's "Stopping by Woods on a Snowy Evening" (1992, p. 133) or Lawrence Ferlinghetti's "Constantly Risking

Absurdity" (1992) could be brought to life through video performance by a group of young people in a choreographed chamber theatre format or by using the poem as vocal text under a series of visual images. Winter forest slides would make the experience of Frost's snowy evening more immediate, and images of circus acrobats might illustrate Ferlinghetti's experience of the personal dangers in risking the art of poetry.

Finally, it is then only a small step to having students in active learning projects assigned to find these images (whether still or moving) and assemble them to create their own evocation of what the poems mean to them in visual terms. Students, working individually or in groups, from their own level of sophistication, might search out the images to express the form and feeling as well as the actual poetic devices manifested in the poems, and share these poems with their fellow students, using technology.

Learning the forms and devices of poetry becomes a process of felt sensing. A line of anapests, for example, when used to describe the galloping of a giraffe in Nicolai Gumilev's (1957) poem of the same name can turn the line of verse into a vocal image. The line itself describes the giraffe thus:

He is KINGly and STRAIGHT and his
MOVEments inCREDibly LIGHT.

The linked string of two slack followed by one stressed syllable is deliberately designed to create the echoing sound of the hoof beats of the galloping giraffe. The teacher may explain this device by reading the line aloud or the students may chant the line with exaggerated emphasis on the stressed syllables. However, if the sight and sound of a film of an actual giraffe galloping as projected on a classroom television or computer screen can match the verse line, voice-recorded by a trained performer, the viewing student(s) can see and hear the reason for the device of the poet in so arranging the beat of his verse. The function of the anapest that moves the line is made immediately available: the rhythm becomes audio-visual.

To move from poetic form to figures of speech, another use of creative technology, would be to consider the same poet's use of the device of metaphor. To quote a later verse from the same poem,

I know that the ostriches witness a
wonderful sight

When at nightfall he hides in his
emerald cave.

Now the figure of speech, *emerald cave*, could be eminently clear to a third grade student simply by transforming a colored photograph of a cluster of emerald gems into the cluster of green-leafed branches in a low-hanging tree where the giraffe rests at night. This process of changing one computer image into another, called *morphing*, is well within the capability of current computer technology. The student, without the tedious necessity of defining the poetic device of metaphor, verbo-visually comprehends "seeing one thing in terms of another."

Onomatopoeia (words whose utterance mimics meaning) can be technologically exaggerated, for example, by increasing the volume in a film of snakes *hissing*, by audio/visual raindrops *plopping*, by a close-up of bees *buzzing*, or by a film of water *swishing* and *splashing* on the rocks. "Assonance and internal rhyme in Gwendolyn Brooks' (1962) "We Real Cool" can be made audio-visual by African-American syncopated dancers stretching the vowels and echoing the drums and cymbals at the end of each line of verse.

Finally, if a student should use the laserdisc and computer with Frost's poem, "Stopping by Woods on a Snowy Evening" (1992) she/he might prepare slides or photos of New England snow scenes with horse and sleigh, winter forest scenes, and starry skies outside a window

of a bedroom where a child sleeps. These pictures, found in magazines, newspapers, or art book illustrations, reinforce a presentation preparatory to a performance of the poem. The iambic *rhythm* (characteristic of Frost) and the *rhymes* in the line endings might be superscripted and underlined thus:

Whose woods these are I think I *know*.
His house is in the village *though*:
He will not see me stopping here
To watch his woods fill up with *snow*.

My little horse must think it *queer*
To stop without a farmhouse *near*
Between the woods and frozen lake
The darkest evening of the *year*.

He gives his harness bells a *shake*
To ask if there is some *mistake*.
The only other sound's the sweep
Of easy wind and downy *flake*.

The woods are lovely, dark and *deep*,
But I have promises to *keep*,
And miles to go before I *sleep*,
And miles to go before I *sleep*.

Advanced students might try to match the poem with one of their own, even counting the syllables (eight) in each line and then printing out both Frost's poem and their own on facing pages.

In summary, therefore, I propose a curriculum for teaching poetry in grades K-12 using laserdisc technology such as that in place at the Webster MTS. The series of lesson plans would facilitate increasing comprehension of the devices of poetry, but the curriculum base would be poems enriched by American values and experience.

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