

# Using Interactive Video

## to Assess Teaching Behaviors

Preservice teachers at Iowa State University learn to spot effective teaching behaviors by rating computer-driven videotaped teaching episodes.

**T**o create a contemporary substitute for onsite observation of classroom teaching and to incorporate instructional technology in the teacher education program, the College of Education at Iowa State University developed a group of videotapes of classroom teaching, a rating scale and criteria against which to evaluate them, and, eventually a system of interactive tutorial instruction.

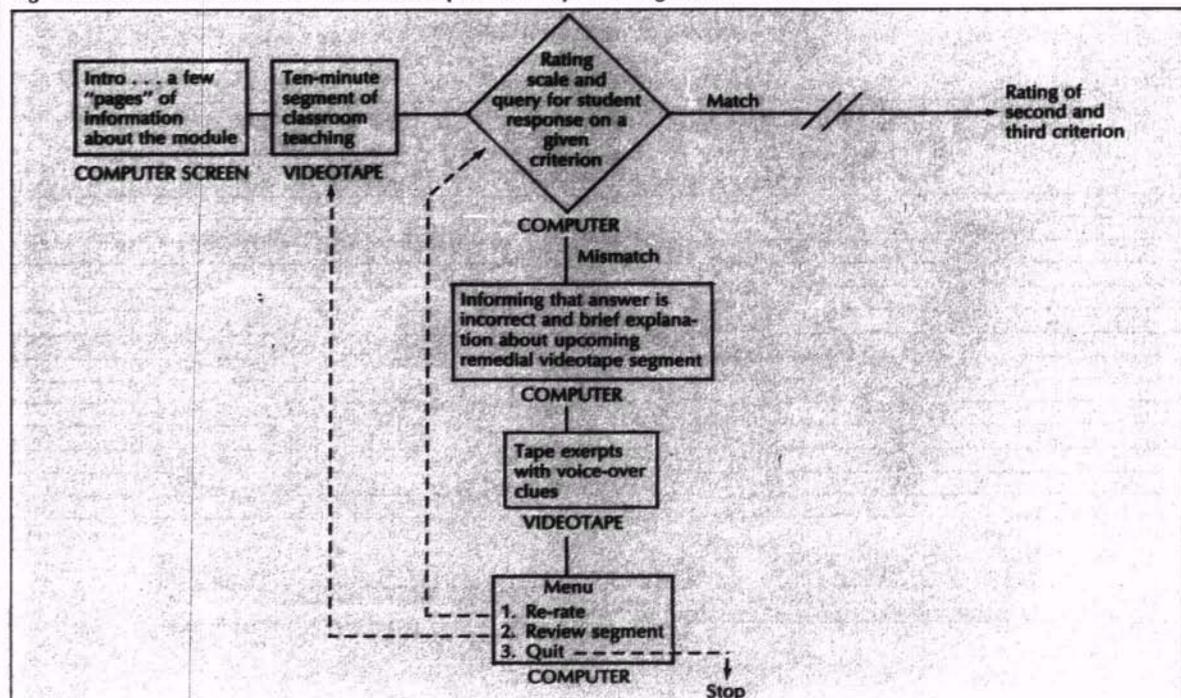
We realized that students need opportunities to watch master teachers in a variety of settings (Stallings 1984), but it is often not economically nor logistically possible to send students into classrooms. The alternative, which provided the basic idea for our program, is to provide demonstrations in the college classroom, and to enhance them, as Medley (1979) sug-

gests, by giving students accurate, research-based information about effective and ineffective behaviors.

### Early Efforts

We began our program with a checklist of 11 teaching behaviors to be assessed (see fig. 1) and a bank of videotapes, which we called Teaching Assessment Modules. We designated three or four of the 11 behaviors to be assessed on each tape. To provide a benchmark, a jury of professional educators was convened to appraise the teaching, using the same criteria that preservice teachers would use later. The criteria were judged on a one-to-five point Likert scale. In addition, for each of the tapes they viewed, the jury wrote a one-paragraph opinion about each criterion.

Fig. 1. Instructional Model for the Interactive Computer/Videotape Teaching Assessment Module



**“If the ultimate goal is to modify preservice teachers’ classroom behavior, . . . practice in assessing teaching behavior of others is an important first step.”**

Thereafter, students viewed the tapes and judged teaching effectiveness according to the same criteria. A microcomputer program was written to facilitate scoring student responses and to match them to jury responses. After comparing the student's rating to that of the jury on the Likert scale, the computer provided a printout of the jury's comments and ratings.

While students seemed to profit from this experience, the computer was used merely as an electronic testing machine. We could offer no additional help to students whose judgments differed from that of the jury, either by providing tutorial instruction or by giving students another chance to evaluate the teaching. It seemed natural that we should go to the next step: developing computer-assisted instruction that would include videotaped instruction as well as verbal information on the computer screen.

### Interacting with Computers

The videotapes of classroom teaching and the rating system were retained, as well as the printout of jury opinions. The BCD<sup>1</sup> authoring system and interface card in an Apple II+ were used to drive a videotape player, making possible the creation of a tutorial, interactive teaching assessment module. By linking the computer and the videotape player, instruction could occur either on the computer screen or during the videotape itself (see fig. 2).

Six steps characterize this interactive version.

1. The program begins on the computer screen with a few pages of information about the grade level and subject of the videotaped segment and the criteria to be assessed.

2. The computer collects the student's name, identification number, and year in college for diagnostic use later.

3. The student views the tape and

immediately rates the first criterion.

4. The program provides immediate feedback and reinforcement to students who judge the teaching behaviors correctly; that is, within one step of the jury's rating on the five-point Likert scale. Successful students are then allowed to proceed to the next criterion.

5. The computer provides remedial information to students whose judgments are incorrect; that is, if they are two or more points away from that of the jury. In that case, a shortened version of the videotaped teaching is replayed with excerpts carrying a voice-over narrative pointing out what to look for.

6. This portion of the videotape is followed by a menu that offers three choices: a chance to review the full-length teaching segment, a chance to re-rate the criterion, or a chance to quit.

### Student Preference Directs Next Steps

To field-test the modules, 40 students in the introductory teacher education course (Social Foundations of American Education) were asked to complete the two modules: the earlier version in which the videotape and computerized assessment were not electronically linked, and the interactive version. We already knew that the students made judgments of the teaching behaviors reasonably close to those of the jury; the question we now faced was: which delivery system did the students prefer.

As a result of surveys, we learned that students felt they were more active learners in the interactive computer/video system, and that they felt it used the computer more effectively. The students also found the voice-over comments helpful, but suggested that two different sets of comments be programmed into the system: one as remediation for incorrect answers, and another to reinforce correct ones. The students had two additional critical comments. They felt that they should have an opportunity to respond to the jury's comments, possibly by entering their comments and storing them with their demographic data.

**"The computer provides remedial information to students whose judgments are incorrect. . . . a shortened version of the videotaped teaching is replayed, with excerpts carrying a voice-over narrative pointing out what to look for."**

The students also criticized the videotape production quality, noting that poor sound and picture tended to interfere with the effectiveness of the module.

There is little doubt that practice in identifying and appraising teaching behaviors can be provided by electronic media in a form acceptable to students. Nor is it surprising to learn that students feel such an experience is more meaningful if they are involved in it, can control the system, and can receive information from the system that enables them to move effectively through the lesson.

Currently, we are working to develop the interactive computer/videotape modules more extensively, incorporating a wider range of remedial loops, computer color and graphics, and more extensive tutorial instruction. We also are devoting more atten-

tion to production, having learned that single-camera productions using available room light are not suitable. In addition, we are using freeze frames, clues that appear as printed "advance organizers" within the videotape, and more precise examples of effective and ineffective teaching behavior. The Apple SUPER PILOT language promises to offer the versatility needed to develop these approaches.

Identifying appropriate and inappropriate behavior in others is one thing; incorporating suitable behavior into your own teaching style is quite another. If the ultimate goal is to modify preservice teachers' classroom behavior, however, practice in assessing teaching behavior of others is an important first step. □

1. BCD Associates, 5809 S.W. 5th Street, Suite 101, Oklahoma City, OK 73128.

### References

- Denton, J. *Do Early Field Experiences in Teacher Education Provide A Meaningful Context for Acquiring Meaningful Knowledge?* Paper presented at the meeting of the American Educational Researchers Association, Montreal, Canada, 1983.
- Dewey, J. *Experience and Education*. New York: Collier Press, 1973.
- Kluender, M. M. "Teacher Education Programs in the 1980s: Some Selected Characteristics." *Journal of Teacher Education* 35, 4 (1984): 33-35.
- Medley, D. M. "The Effectiveness of Teachers." In *Research on Teaching: Concepts, Findings, and Implications*, 11-27, edited by P. L. Peterson and H. J. Walberg. Berkeley: McCutchan Publishing Corp., 1979.
- Stallings, J. "Implications from The Research on Teaching for Teacher Preparation." In *Using Research to Improve Teacher Education*. Lincoln, Neb.: American Association of Colleges for Teacher Education, 1984.

**Roger Volker** is professor of secondary education, Instructional Resources Center. **Dan Gehler** is a graduate assistant, **William P. Howlett** is second lieutenant, U.S. Army and a graduate student, and **Amy Twetten** is a graduate assistant, College of Education, NO31 Quadrangle, Iowa State University, Ames, IA 50011.

Copyright © 1986 by the Association for Supervision and Curriculum Development. All rights reserved.