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ABSTRACT

Electronic aids can be used to augment the lecturing process and improve students' learning experience when teaching large groups of students at the university level. They can, among other things, stimulate student interest in the material, display the unfolding structure of a lecture, provide students ready access to the instructor's own lecture outlines, and expand opportunities for students to put questions directly to the instructor. This paper reports on the findings of before and after surveys of 400 students' attitudes in two classes of U.S. Government toward four electronic techniques: (1) showing short video clips on events in U.S. politics; (2) projecting topic outlines of lectures on a screen during class; (3) providing students the ability to print full sentence lecture outlines; and (4) communicating with students via electronic mail. Student surveys taken before and after both courses show that students viewed the four techniques quite positively, often warming to the techniques during the quarter. Students demonstrated an ability to distinguish between the "best liked" techniques and those "most important for learning." The sentence outline technique was both the best liked and most important for learning but also contributed to reduced class attendance, which raises questions about its effectiveness. The paper includes graphs of findings and samples of material projected during class or retrieved by students via computer. The before and after surveys used in the study are appended. (JB)

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TEACHING AMERICAN GOVERNMENT IN AN ELECTRONIC CLASSROOM

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Teaching American Government in an Electronic Classroom

Kenneth Janda
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Prepared for delivery at the 1989 Annual Meeting of the American Political Science Association, The Atlanta Hilton and Towers, August 31 through September 3, 1989.
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All too often, the introductory course in American government is taught in very large classes, requiring instructors to lecture to hundreds of students in cavernous rooms. This may suit the few spellbinding lecturers who can enthrall a crowd of students with an hour of oratory and send them out thirsting to learn more about the bureaucracy and the budget. The rest of us look for ways to command students' interest while teaching abstract concepts, empirical facts, and complex relationships involved in the political process. Based on my experience in teaching American government to hundreds of students in a large lecture hall, I believe that computers and other forms of electronic technology can be helpful for the rest of us.

Electronic aids can be used to augment the lecturing process and improve the students' learning experience. Technology won't change a poor lecturer into a good one, but it can improve the lecture situation for students in several ways. Electronic aids can stimulate student interest in the material, display the unfolding structure of a lecture, provide students ready access to the instructor's own lecture outlines, and expand opportunities for students to put questions directly to the instructor. At least, this is how I have used videotapes and computers in teaching American government to some 170 students in 1987 and 230 in 1989.

This paper reports findings from "before" and "after" surveys of student attitudes in both courses toward four electronic techniques:

1. showing short video clips on events in American politics
2. projecting topic outlines of my lectures on a screen during the class
3. providing students the ability to print full sentence lecture outlines
4. communicating with students via electronic mail

Students revealed very similar and mostly positive attitudes toward all four techniques in both classes, despite differences in the way the techniques were used in each course. Students also tended to become more favorable in their attitudes toward the technology as both courses progressed. At the courses' conclusion, a substantial majority felt that the electronic methodology "made the large lecture course more effective for learning." They also showed an ability to discriminate between "liking" the techniques and "learning" from them. Ironically, the technique they felt contributed the most to their learning raises the most serious pedagogical questions about its continued usage.

The Setting and Technology

I taught the introductory course in American Government and Politics to approximately 170 students in the Winter Quarter of 1987 and to 230 students in the Spring Quarter of 1989. Both courses were taught in a lecture hall that sat 260 students. The room was equipped with a Macintosh computer and a Sony video projector that was capable of projecting both computer and videotape images on a six-foot movie screen. I lectured for fifty minutes on Monday, Tuesday, and Wednesday of each week for ten weeks. The main text used was *The Challenge of Democracy* (Janda, Berry, and Goldman) [1]. On Thursdays and Fridays, graduate Teaching Assistants met with the students in discussion sections of about 20 students. For the most part, the TAs conducted their sections in traditional question-and-discussion formats. The four electronic techniques, described below, were used exclusively in the lectures.

Video clippings

The original source of the video clippings was the *Video Encyclopedia of the 20th Century*, a collection of thousands of film and video segments available on some 80 videotape cassettes or on 40 laserdisks.[2] With help from others,[3] I selected approximately ninety minutes of prime material on American politics. These clippings were combined in a 90-minute videotape to accompany the second edition of *The Challenge of Democracy*. The video consists of various segments on five topics: (1) Watergate, (2) Parties and Campaigns, (3) The Presidency, (4) Civil Rights/Equality, and (5) the Vietnam War. Portions of this material were shown in conjunction with the topics discussed in lecture.

The standard pattern was to introduce a lecture by showing a video clipping of approximately five to ten minutes in length. For example, I showed about four minutes of the protests and riots at the 1968 Democratic National Convention to introduce my lecture on "unconventional political participation." Videos were used at only about seven lectures in each course, and students did not know in advance when they would be shown.

```
+ Lecture: The Politics of Taxing and Spending
  + I. Ronald Reagan and economic theories
  + II. Evidence of Reagan's economic policies
  + III. Explaining taxing and spending policies
  + IV. American politics and foreign policy
```

Figure 1: Major Lecture Topics in MORE

```
+ Lecture: The Politics of Taxing and Spending
  + I. Ronald Reagan and economic theories
    - A. MOVIE STAR HATES TAXES!
    + B. Outline of economic theories
      - Laissez-faire economics
      + Keynesian theory
        - Problem of business cycles
        + Control of business cycles
          - AGGREGATE DEMAND
          - PRODUCTIVE CAPACITY
        + Government policies
          - Fiscal
          - Monetary
```

Figure 2: Subtopics in Lecture

Projected topic outlines

I used a computer program known as an "outline processor" first to create the topic headings and data graphs used in my daily lecture, and then to display the headings and graphs on the screen during class. MORE, the Macintosh program used for this purpose, enabled me to display my completed lecture outline by selectively "hiding" and "showing" hierarchical levels in the outline, typically called "parents" and "children."

I gave students an overview of the day's lecture by showing only the main headings (the parents) while hiding all the subheadings (the children). By moving the cursor to the first main heading and clicking the mouse, I could reveal its subheadings--and so on through all the subsequent subheadings. For example, I could display the day's major topics on "The Politics of Taxing and Spending" (Figure 1) and then uncover the subheadings (and sub-subheadings) under the first topic (Figure 2).

When finished with the first topic, I hid its subheadings and moved to the next topic, unfolding its structure in turn. The

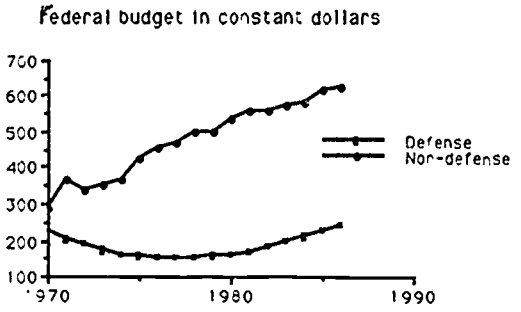

Figure 3: Graph Projected In Lecture

MAIN MENU

1. Get a lecture
2. Enter Cyber Mail system
3. Exit

Select from the list above and press RETURN:___

CHOOSE

1. Lets you retrieve a B10 class lecture to view at the terminal. You may also send it to the printer.
2. Places you in the Cyber Mail system where you can send or receive messages.

Figure 4: Main Menu on the Mainframe

Which lecture do you wish to see?

1. MAY 15: The Office and the Person
2. MAY 17: Presidential Leadership and Bureaucracy
3. MAY 22: Bureaucracy and the Budgetary Process
4. MAY 23: The Politics of Taxing and Spending
5. MAY 24: Foreign Policy and Anti-Communism
6. MAY 25: Freedom, Order, or Equality?
7. MAY 31: Pluralist or Majoritarian Democracy?
8. ===> RETURN TO MAIN MENU <===

Select from the above and press RETURN:____

Figure 5: Menu to select my lecture notes

MORE program also allowed me to display high-quality graphs of political data that I had created previously (Figure 3). In years past, I would have laboriously written these numbers on the blackboard and sketched out clumsy graphs.

Printed full sentence outlines

Although I projected only the topic headings of my lectures in class, my own lecture notes (written in WordPerfect on a DOS computer) consisted of full sentences. Early in the 1987 course, I tried projecting full sentence outlines but found that they displayed too much text for the students to process during the lecture. (Students insist on writing down *everything*.) Because I had the entire text of my lecture on the computer, I allowed motivated students to obtain complete notes by reproducing my files. I reasoned that this would allow them to concentrate on what I was saying, encouraging them to think instead of striving to write it all down.

Accordingly, following each lecture, I converted my WordPerfect files to ASCII format, transmitted them via modem to our Cyber 845 mainframe computer at our computing center, and invited students to access my files and print my full sentence lecture outlines at their convenience after the class.

Contrary to what some readers might think, students had little problem learning to access the mainframe--even though the class consisted overwhelmingly of students with no mainframe experience. Thanks to a special "prolog" that was activated when they signed on with their personal course accounts, the students were thrown into a menu of simple choices that guided their response. Figure 4 shows the initial menu that they encountered that invites them to "get a lecture." Figure 5 shows the menu that allows them to choose a lecture for printing, and Figure 6 shows a portion of my full sentence outline for the May 23 lecture on the politics of taxing and spending.

B10 AMERICAN GOVERNMENT: The Politics of Taxing and Spending--5/23/89 1

I. Ronald Reagan and economic theories
   A. The economic policies of the U.S. in the 1980s derive from Ronald Reagan's unhappiness with his high taxes as a movie star after World War II.
      1. With income over $200,000 in the early 1950s, his tax rate was 91%.
      2. By comparison, taxpayers earning the median family income of $3,300 were only in the 25% tax rate.
      3. Reagan believed that his high rate amounted to government confiscation of his income, which discouraged him from making more money by making more movies.

Figure 6: Portion of full sentence lecture outline available to students

date: wed 25 feb 87 15.52.36 CST
from: A3857SN
to: A3857

DEAR PROFESSOR JANDA,
WELL, I FINALLY GOT THROUGH TO YOU. THIS IS THE FORTH TIME I'VE TRIED THIS, SO IT BETTER WORK! WELL, TO SUMARIZE QUICKLY WHAT MY OTHER THREE MESSAGES SAID, I WOULD LIKE TO START OFF BY SAYING THAT I FEEL THIS TYPE OF COMMUNICATION/TEACHING METHOD IS VERY EFFECTIVE! THIS WAY YOU CAN KEEP IN TOUCH WITH YOUR STUDENTS ON AN INDIVIDUAL BASIS AND ANSWER ANY QUESTIONS WE MAY HAVE.
NEXT, I WOULD LIKE TO ASK YOU A QUESTION. IN MY DISCUSSION CLASS WITH ETHAN COSGRIFF, (ON 2-19-87) WE DISCUSSED THE ELECTION PROCESS. I AM STILL SOMEWHAT CONFUSED ABOUT PRIMARY ELECTIONS. I UNDERSTAND THE VOTERS POSITION IN THE ELECTION PROCESS, BUT I DON'T UNDERSTAND WHAT A CANDIDATE MUST DO IN THE PRIMARIES AND BEYOND. IF YOU HAVE ANY SUGGESTIONS OR COMMENTS ON HOW I MAY BETTER COMPREHEND THIS PROCESS, I WOULD APPRECIATE IT.
SINCERELY, SUE

---

date: thu 26 feb 87 09.19.22 CST
from: A3857
to: A3857SN

Dear Sue:
You asked about the primaries, but I really don't understand what you don't understand. Let me review: In the U.S. (but not in most other nations), candidates for public office win the endorsement of a party by competing in and winning a PRIMARY election. This entitles the candidates to be listed on the ballot as the candidates of a given party in the GENERAL election. Because so many voters identify with either the Democratic or Republican party in th U.S., this gives a PARTY candidate an enormous edge over any independent or non-party candidate in the general election. Does this help? Why not review the discussion of primary elections in CHALLENGE OF DEMOCRACY?
By the way, why don't you type on the terminal in lower case so that your messages don't look like telegrams?

---

date: thu 26 feb 87 21.41.17 CST
from: A3857SN
to: A3857

Dear Professor Janda:
Thank you for the suggestions you sent me in your last message. I read the section in CHALLENGE OF DEMOCRACY explaining the primaries. The readings, along with your message helped me to better understand the function of the primaries in the election process. Thank you again!
Sincerely, Sue

Figure 7: Exchange of electronic mail with a student

Electronic mail

Most students in a large lecture class rarely get the chance to communicate directly with the instructor. The more aggressive students compete for the instructor's attention after class, and few freshmen dare to seek office appointments. Electronic mail provides a non-threatening alternative for communicating with an instructor. The same menuing system that helped students access the lecture notes also facilitated their use of electronic mail.

Students could send me a message by opting to "Enter the Cyber Mail System" from the main menu. During the two courses, I received (and replied to) approximately 250 messages, some from students who wrote me two or more times. Students wrote about all sorts of things: questions about the lectures, comments about the readings, queries about politics, quibbles about grading, and so on. Often, they asked questions that they would not ask in a traditional lecture course. Consider the exchange of correspondence that I had with Sue, a student, in Figure 7.

Although only a minority of students in both courses took advantage of electronic mail, I felt as a teacher that it provided another way of communicating individually with the many students in my class. Of course, it is more important how the *students* regarded it and the other electronic aids.

Assessing the Electronic Classroom

There were two main differences between the 1987 and 1989 classes. First, the 1987 course was the subject of doctoral research by Judith K. Ingram on computer-augmented teaching for her Ph.D in Northwestern's School of Education and Social Policy [4]. Dr. Ingram devised all the instruments to evaluate the teaching innovations, and I reused most of her pre-course and post-course survey questions verbatim in 1989, doing the assessment myself. (The 1989 forms are appended to the paper.)

Second, the 1987 design for implementing the technology was more complex, particularly for the projected topic outlines. The first five lectures of the course used no technological aids, other than a blackboard and chalk. This gave students an idea of my traditional style of lecturing without the technology. The next four lectures used the video projector to display the topics on the screen as I spoke. (Dr. Ingram administered an interim survey afterwards to get student opinions on the two methods.)

Thereafter, the lectures in 1987 alternated throughout the quarter: odd-numbered lectures used the video equipment and even-numbered ones did not. Electronic mail was introduced simultaneously with the projected outlines. Availability of the printed outlines was announced at the tenth lecture. Video clips were introduced the next day and only shown on odd-numbered lectures along with the projected outlines.

In 1989, the projected outlines were used daily in the course from the beginning. Electronic mail and video clips were also quickly introduced. Only the availability of the printed lecture outlines was delayed, not being announced until the third week of class. Theuse of electronic technology on alternate days in 1987 versus its daily use in 1989 may account for some differences in student reactions to the various aids in both years.

Did students like the technology?

Before both courses, students were asked, *Do you think that computer-based technology can be used to make large lectures more effective for learning?* As shown in Figure 8, only a minority in both classes (20 percent in 1987 and 37 percent in 1989) thought so beforehand. After the courses ended, the students were asked, *Do you think that the electronic technology used in* ***this class*** *made the large lecture course more effective for learning?* Large majorities of students in the post-surveys (70 percent in 1987 and 67 percent in 1989) thought so.

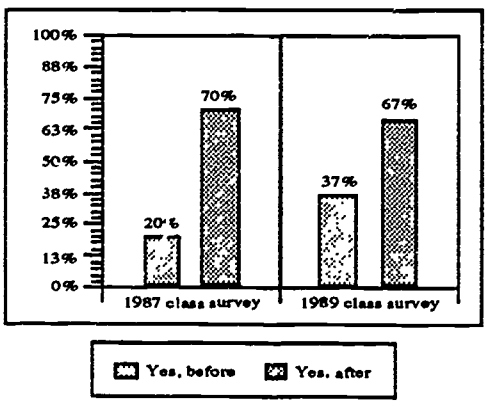

Figure 8: Can technology be effective in lectures?

After both courses, students were also asked whether they liked each of the electronic processes, with "like" described as *whether or not the process improved the course for you, and if you're glad it was used.* Figure 9 graphs the percentage of students reporting that they "liked" or "liked a lot" each of the techniques. Over 80% of the students liked the printed lecture outlines and the video clippings, and they liked them about equally in both years. About three-quarters of both classes liked the projected outlines, whereas only about one-third or less liked electronic mail.

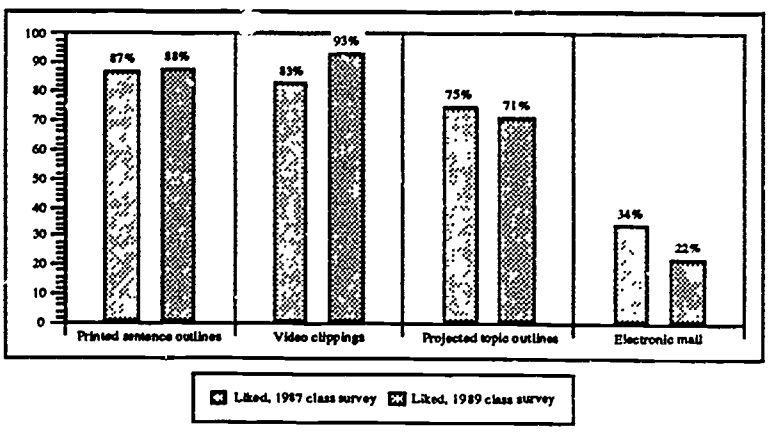

Figure 9. Did you like the electronic aids?

The much lower response for electronic mail is due to the small proportion of students who tried it--less than half the class in both years. Nearly all those not recorded as liking electronic mail had "neutral" judgments. This is not true for the projected outlines, reported as "disliked" by 13 percent in 1987 and 14 percent in 1989. Some students (and the instructor) disliked dimming the room lights to improve the screen display, which made the room somewhat gloomy. (The overhead lights in the room lacked parabolic reflectors that direct the light down on the audience and away from the wall. Improved lighting--or improved projection equipment--should increase student comfort in class.)

Did students learn from the technology?

After both courses, students were asked more specifically, *Did any of the electronic processes significantly improve your ability to learn in this large lecture course?* Huge majorities (82% in 1987 and 78% in 1989) said yes. Moreover, students distinguished between the best-*liked* technology and that which contributed most to their learning. Figure 10 graphs their responses when asked which of the techniques was *most* important in helping them learn. Notably, the well-liked video clips were judged less helpful to learning than the less well-liked projected outline topics.

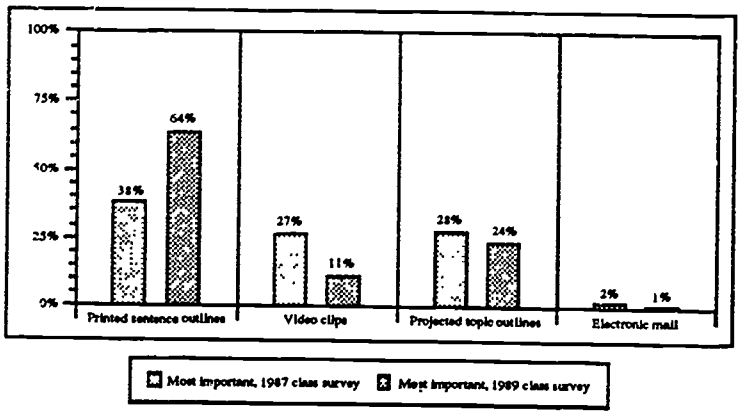

Figure 10: Which was most important to learning?

That students rated the projected outlines above the video clippings is surprising. The projected outlines were unfamiliar to all the students, and students had to adjust to this very different method of lecturing. At the end of the course, students were asked, *Did you change your opinion about the worth of projected outlines duing the quarter?* In both years, about half the class (55% in 1987 and 43% in 1989) admitted changing their opinions. For those who did, the change was overwhelmingly favorable, with 87 percent liking them more in 1987 and 74 percent liking them more in 1989.

A Closer Look at the Projected and the Printed Outlines

Of the four techniques tested in this paper, showing video tapes and using electronic mail raise fewer issues of pedagogy than projecting lecture topics in class and providing full sentence lecture notes. Projecting lecture topics raises issues because the experience is so different for students. We need to know what they like and dislike about the technique. Providing full sentence lecture notes is also unusual--not in concept but in the sense that it is seldom done. In this instance, we need to know the consequences of providing students with complete lecture notes.

The advantages of projected lecture topics

Once they got used to them, most of the students judged the projected outline topics quite positively. Surveyed after the 1989 class, 95 percent said they "helped identify the main points in the lectures and found "the projected graphs and charts were better than those usually drawn on the blackboards." Moreover, 73 percent agreed that "the ability to collapse and expand topics helped me follow the lectures."

Given the opportunity to express negative views about projected outlines, most students declined. "Seventy-four percent disagreed that they "made note taking harder"; 65 percent disagreed that their "mind wandered more" as a result of the projected outlines; and 86 percent disagreed that they "added nothing" to the lecture. Given improvements in the projection technology and in room lighting, computer projections of lecture topics definitely seems worthwhile.

The problem of the printed sentence outlines

There is a literature on the consequences of making an instructor's lecture notes available to students. In her review of this literature, Ingram says:

> Arguments in favor of distributing lecturer notes include completeness and accuracy, help for poor note-takers, and reduced interference with trying to understand what's being said. Drawbacks are potential inattentiveness and non-attendance (Ingram, 1987: 41-42).

Non-attendance of my lectures became a major problem in both classes. Students who did not attend class no longer had to rely on getting notes from another student; they could get authoritative notes directly from the instructor! As I began to notice my attendance decline midway during the 1987 course, I became alarmed and abruptly announced at the beginning of a Wednesday lecture that I was discontinuing the printed outlines because they were contributing to absenteeism.

No sooner had I mentioned this than I faced a revolt from the students who *were* in attendance that day. (It was as if I had announced that everyone's grade was going to be lowered by a half-step.) The students testified to the value of the printed outlines. Why should they (who came to class) be penalized just because some students abused the technology? In the next couple of days, my electronic mailbox was filled with messages asking me to reconsider. I soon decided to reinstate the printed lectures staring with the next lecture on Monday. I reasoned that it was more important to promote learning among the more interested students than to increase attendance among the less interested ones. If the eager students who attended my lectures found the outlines to be helpful, I should not deprive them.

That was in 1987. I entered the 1989 course realizing that the availability of my full sentence outlines would depress attendance as the quarter proceeded, but I was not prepared to accept the *amount* that attendance would decline. Figure 11 graphs the daily attendance during the quarter against the number of students who accessed my daily lecture notes. (The Cyber kept a record of every student who had retrieved each day's notes.) The graph clearly shows that attendance tumbled early in the quarter as students caught on to getting the lecture notes. After the midterm, daily attendance stabilized around 100 students (out of 230), while around 150 accessed each day's lecture notes. (Many more students obtained copies of the daily notes, for one student would often print out copies for two or three friends. Moreover, sets could easily be electrostatically copied.) The lecture notes clearly seemed to be depressing attendance.

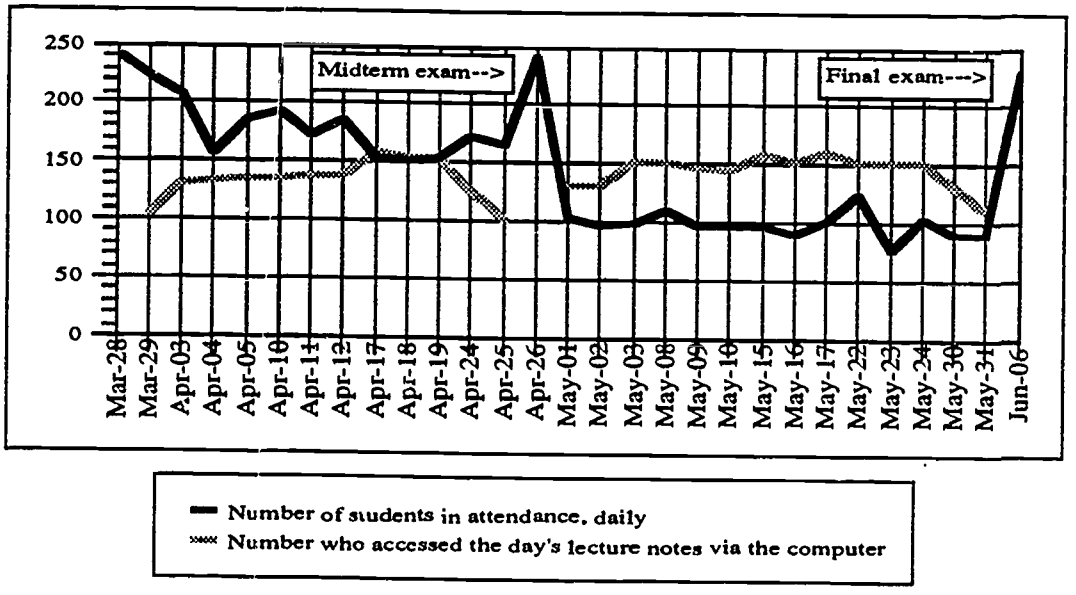

Figure 11: Daily attendance and daily access of lecture notes

When asked in the post-1989 survey whether they had missed attending any lectures, and if so, what was the most important reason for missing class, relatively few blamed the availability of printed lecture notes. The most frequent choice (32%) was the early time of the 9:00 am class, but nearly as many students (29%) mentioned "other priorities." Only 16 percent cited availability of the lecture notes--the same percentage as those who claimed illness.

Alternatively, attendance might have tailed off simply because many students didn't like the class. Ordinarily, this could be determined from student evaluations of the course, but forms were filled out by only 85 students in attendance at one of the last class sessions. Those students, at least, were quite positive about the course. Eighty percent said that they "learned a lot" from taking the course; 94 percent agreed that "the teacher made good use of examples and illusstrations"; 89 percent agreed that the teacher "communicated ideas in a clear and organized manner"; and 75 percent replied that they "were glad" that they took the course. Unfortunately, I have no opinions on the course from the majority of students who skipped that day.

In my opinion--and in the opinion of my TAs--the ready availability of authoritative lecture notes altered the students' approach to the course. Attendance simply was not necessary to learn what was going on in the course. If students had trouble waking up--or had other things to do that morning--they could skip it with no risk of missing anything important. Like buying a newspapers, they could "read all about it" in the full sentence outlines they obtained at the end of the day. They may not haveskipped class *because* of the printed outlines, but the outlines' availability made it possible for them to miss the class without penalty.

In 1987, I decided to continue distributing my full sentence outlines, despite a decline in attendance, on the theory that it helped the weaker students obtain better lecture notes while providing more complete information to better students. After a similar experience with low attendance in 1989, I have changed my mind. I now believe that it is more important to engage students in the substance of American government daily in the lectures than to provide them with full sentence outlines of those lectures. Because the availability of my printed lecture notes seems to work against that daily engagement, I will drop this technological innovation--the one students rated the highest for being "liked" and "effective"-- the next time I teach the course.

Summary and Conclusion

My experience with teaching American government to large classes in 1987 and 1989 demonstrates that electronic technology can improve the lecture situation by stimulating student interest through video clips, by displaying computerized lecture notes on a screen rather than writing them on a blackboard, by making the instructor's own full sentence lecture notes readily available, and by communicating with students via electronic mail. Students surveys taken before and after both courses show that students viewed the four techniques quite positively, often warming to the techniques during the quarter.

Students also demonstrated an ability to distiguish between the "best liked" techniques--the video clippings and the full sentence outlines--and those "most important" for learning--the full sentence outlines and the projected outlines. Unfortunately, the technique that was both best liked and most important for learning--the full sentence outlines--also contributed to reduced class attendance, which raises questions about using this technique in the future. Next to the full sentence outlines, students found the projected outline topics to be the most helpful to their learning. Bringing the computer into the lecture hall to display daily topics and graphs is an especially promising teaching technique for large classes.

Notes

1. Kenneth Janda, Jeffrey Berry, and Jerry Goldman, *The Challenge of Democracy: Government in America, second edition* (Boston: Houghton Mifflin, 1989).

2. *The Video Encyclopedia of the 20th Century* is produced by CEL Educational Resources; 515 Madison A· enue, Suite 700; New York, NY 10022.

3. Judith K. Ingram helped identify relevant material from the *Video Encyclopedia*, and Richard Johnson of Northwestern's Language Laboratory helped copy the videodisk material to videotape for display in class. Later, Ethan Cosgriff helped Richard Johnson produce a ninety minute *Video Guide* that is available for the second edition of *The Challenge of Democracy*.

4. Judith K. Ingram, "Implementing and Assessing Computer-Augmented-Teaching in the Large Lecture Course." Unpublished Ph.D dissertation, Northwestern University, Evanston, Illinois, 1987.

B10 American Government Student Survey--March, 1989

WELCOME to American Government and Politics. Please answer the following questions to help us evaluate the effectiveness of our teaching techniques. We ask for your name and ID numbers to match your answers now with your comments at the end of the class. Responses are confidential and only composite results (rather than individual responses) will be reported.

1. Your name:_____ 2: ID# _____

3. Year in college: 1 2 3 4 4. Sex: 1- Male 2- Female

5. Major field or preference: _____

6. What are your current career plans? (If undecided, give a possibility) _____

7. How would you rate your knowledge of American government and politics right now?

Very weak		Moderate		Very strong
1	2	3	4	5

8. What was the *most* important reason that you took this course?
   1- It was one of the requirements for my major/school.
   2- I am interested in the subject of American politics.
   3- I needed a course in this area, and it fit into my schedule.
   4- Other: _____

9. Apart from the reasons you took the course, how interested are you in American government and politics?

Very little		Moderately		Very much
1	2	3	4	5

10. Right now, do you plan to take other courses in American government and politics?
    1- No plans to do so 2- Probably not 3- Probably will 4- Yes

11. How many large lecture courses (100 students +) have you *completed* in college? _____

12. Please list any such courses (other than this one) that you are currently taking:

_____

13. How much has the use of film and other visual aids contributed to your enjoyment of lecture presentations?

Not at all		Some		A great deal
1	2	3	4	5

14. Have you taken a course which used some kind of computer technology as a teaching aid? 1- Yes 2- No

15. If yes, please list the courses: _____

16. How do you rate your ability to take notes in lecture courses?

Not very good		Okay, but a struggle		Very good
1	2	3	4	5

17. Would you like to learn how to take better lecture notes?

No, not particularly		Yes		Yes, a lot
1	2	3	4	5

Below are statements students make about large lecture courses. Based on your personal experience in such courses indicate--by placing an "x" in the appropriate box--the extent of your agreement or disagreement with each statement.

		Strongly Agree	Agree	Disagree	Strongly Disagree
18.	Almost always, I'm able to figure out the main points of the lecture.	[1]	[2]	[3]	[4]
19.	There's not enough student discussion.	[1]	[2]	[3]	[4]
20.	The lecturer is usually knowledgeable about the subject.	[1]	[2]	[3]	[4]
21.	Lectures are usually well-organized.	[1]	[2]	[3]	[4]
22.	My speed of learning is often slower than the pace of lectures.	[1]	[2]	[3]	[4]

		Strongly Agree	Agree	Disagree	Strongly Disagree
23.	Students receive adequate individual help with specific questions and problems.	[1]	[2]	[3]	[4]
24.	Lectures are effective for stimulating feelings, empathy, sympathy.	[1]	[2]	[3]	[4]
25.	The lecturer regularly encourages and reinforces student participation.	[1]	[2]	[3]	[4]
26.	I feel at ease talking with the lecturer after class.	[1]	[2]	[3]	[4]
27.	Students get regular feedback on their progress.	[1]	[2]	[3]	[4]
28.	I often have questions that I never ask.	[1]	[2]	[3]	[4]
29.	I do most of my learning as I review for exams.	[1]	[2]	[3]	[4]
30.	I am frequently challenged by the lecturer to think for myself.	[1]	[2]	[3]	[4]
31.	I usually get behind in taking notes.	[1]	[2]	[3]	[4]
32.	Learning in small classes is almost always more effective than in large lectures.	[1]	[2]	[3]	[4]

Below are some possible things to do during lectures. Estimate the amount of class time you have spent (or are likely to spend) on each activity. Enter your estimates in increments of 5% points. (Make sure the total sums to 100%.)

33. Listening to what is being said, primarily in order to remember (including taking class notes) ____%
34. Doing your own thinking about ideas presented: analyzing, critiquing, considering implications. ____%
35. Letting your mind wander, daydreaming, dozing. ____%
36. Asking questions, making statements, discussing. ____%
37. Doing things unrelated to the class you are in--writing letters, reading, thinking of other courses. ____%
100% Total

Rate the effect you think that visual displays in classes could have on the following kinds of learning:

		Not much	Some	A lot
38.	Facts to be memorized	0	1	2
39.	Skills to be practiced	0	1	2
40.	Concepts to be understood	0	1	2
41.	Value judgments	0	1	2
42.	Feelings	0	1	2
43.	Knowledge of self	0	1	2

44. Do you think computer-based technology can be used to make large lectures more effective for learning?
No, not significantly — Perhaps somewhat — Yes, a lot
1 2 3 4 5

45. Do you have a microcomputer in your room at school?
1- No 2- Yes, my roommate's 3- Yes, my own

46. How well do you use computers, relative to your classmates ?
1- Not well 2- Below average 3- Average 4- Above average 5- Very well

Indicate how much you personally expect to use computers after college for the following activities:

		Not much	Some	A lot
47.	Personal letters, records	0	1	2
48.	In your employment	0	1	2
49.	Entertainment, hobbies	0	1	2
50.	As an educational tool	0	1	2
51.	Financial Transactions	0	1	2
52.	Other: _____	0	1	2

B10 American Government Student Survey--May, 1989

THANK YOU for taking American Government and Politics. Please answer the following questions to help us evaluate the effectiveness of our teaching techniques. We ask for your name and ID numbers to match your answers now with your comments at the end of the class. Responses are confidential and only composite results (rather than individual responses) will be reported.

1. **Your name:**_____ 2: **ID#** _____

Think of the use of PROJECTED OUTLINES during lectures and indicate the extent to which you agree with the following statements.	Strongly Agree	Agree	Disagree	Strongly Disagree
2. Projected outlines helped me identify the main points in the lectures.	[1]	[2]	[3]	[4]
3. Projected outlines made note taking harder.	[1]	[2]	[3]	[4]
4. My mind wandered more because of the projected outlines.	[1]	[2]	[3]	[4]
5. Projected graphs and charts were better than those usually drawn on the blackboards.	[1]	[2]	[3]	[4]
6. Projected outlines added nothing to the lecture.	[1]	[2]	[3]	[4]
7. The lecturer's ability to collapse and expand topics helped me follow the lecture.	[1]	[2]	[3]	[4]

8. Did you change your opinion about the worth of projected outlines during the quarter? Yes [1] No [2]

9. If yes, do you now like them more [1] or less [2]?

Think of the AVAILABILITY OF THE FULL SENTENCE LECTURE NOTES and indicate whether they made a difference in your study habits.	Strongly Agree	Agree	Disagree	Strongly Disagree
10. I took my own notes just as before, but the process helped me remember what I heard.	[1]	[2]	[3]	[4]
11. Because the notes were available, I tended to daydream more during lectures and had trouble concentrating.	[1]	[2]	[3]	[4]
12. I took many fewer notes of my own.	[1]	[2]	[3]	[4]
13. I spent more time than usual thinking about the meaning of what the lecturer was saying.	[1]	[2]	[3]	[4]
14. I attended lectures less regularly than I would have if the notes had not been available.	[1]	[2]	[3]	[4]
15. In reviewing for exams, I used the printed notes as much as or more than my own.	[1]	[2]	[3]	[4]

16-17. Estimate how many of the 24 sets of lecture notes you accessed and printed for your own use? _____

18-19. Approximately how many of the 24 sets of notes did you obtain from other students?_____

20. Did seeing the projected outlines and having the printed lecture notes improve your ability to take lecture notes? Yes [1] No [2]

Think now of lectures that contained VIDEO FILM. Indicate your response to each of the following by checking the appropriate box.	Strongly Agree	Agree	Disagree	Strongly Disagree
21. The realism of video segments helped me understand complex events more than only reading or hearing about them.	[1]	[2]	[3]	[4]
22. Seeing events on the screen did *not* improve my ability to remember them.	[1]	[2]	[3]	[4]
23. Video segments were not worth the time they took away from lectures	[1]	[2]	[3]	[4]
24. The use of video helped me feel what others were experiencing in situations unfamiliar to me.	[1]	[2]	[3]	[4]

ERIC

Indicate how much you liked the electronic proceses use in the course. Degree of "liking" reflects whether or not the process improved the course for you, and if you're glad it was used.

	Liked a lot	Liked	Neutral	Disliked	Disliked Strongly
25. Projected outlines	[1]	[2]	[3]	[4]	[5]
26. Lecture notes	[1]	[2]	[3]	[4]	[5]
27. Video segments	[1]	[2]	[3]	[4]	[5]
28. Electronic mail	[1]	[2]	[3]	[4]	[5]
29. audio tapes	[1]	[2]	[3]	[4]	[5]

30. Did any of the electronic processes significantly improve your ability to learn in this large lecture course? Yes [1] No [2]

If Yes, please check which was first, second, and third most important:

31. First: [1] Projected outlines [2] lecture notes [3] videos [4] mail [5] taping
32. Second: [1] Projected outlines [2] lecture notes [3] videos [4] mail [5] taping
33. Third: [1] Projected outlines [2] lecture notes [3] videos [4] mail [5] taping

34. Please estimate how many lecture sessions you have attended so far (Yesterday's was the 26th)____

If you did not attend the lectures, please check the reasons you decided not to come, in order of importance.

35.Most important: [1] early hour of class [2] repeated material in texts [3] other priorities [4] lecture notes available [5] illness

36.Next important: [1] early hour of class [2] repeated material in texts [3] other priorities [4] lecture notes available [5] illness

37.Next important: [1] early hour of class [2] repeated material in texts [3] other priorities [4] lecture notes available [5] illness

Below are some possible things to do during lectures. Estimate *for this course* the amount of class time you spent on each activity. Enter your estimates in increments of 5% points. (Make sure the total sums to 100%.)

38-39. Listening to what is being said, primarily in order to remember (including taking class notes) ____%

40-41. Doing your own thinking about ideas presented: analyzing, critiquing, considering implications. ____%

42-43. Letting your mind wander, daydreaming, dozing. ____%

44-45. Asking questions, making statements, discussing. ____%

46-47. Doing things unrelated to the class you are in--writing letters, reading, thinking of other courses. ____%

100% Total

48. Do you think that the electronic technology used in this class made the large lecture course more effective for learning?
No, not significantly perhaps somewhat Yes, a lot
1 2 3 4 5

49. How would you rate your knowledge of American government and politics now?
Very weak Moderate Very strong
1 2 3 4 5

50. How interested are you now in American government and politics?
Very little Moderately Very much
1 2 3 4 5

51. Do you plan to take another course in American government and politics?
1- No plans to do so 2- Probably not 3- Probably will 4- Yes

52. Did you elect to write your term paper analyzing a newspaper article or using the CROSSTABS program?
1- newspaper article 2- CROSSTABS

Thank you for completing this questionnaire