An examination of the general uses of video in instruction helps to formulate appropriate policy for maximizing video production and use. Wide use of instructional television makes advanced knowledge more usable and increases public awareness of new discoveries, reduces the time lag between conception and application of ideas which change society, and improves the image of higher education by becoming a resource to faculties. Improvements in instruction from video will have an impact on teaching standards, and the widescale use of video may be significant in countries where teachers are scarce. A model for instructional video supports the following recommendations for policy: (1) funding for course development should be drawn from the segments of society most likely to benefit from the product; (2) five year funding is necessary at a level that would maximize creativity and productivity; (3) six regional course development centers should be established; (4) coordination should be developed among the production centers; (5) academic review of the courses should be encouraged; (6) institutions should award credit for students in video courses who pass national achievement tests; and (7) incentive should be created for institutions to participate in the offering of courses.
POLICY FOR INSTRUCTIONAL VIDEO

Introduction. One should think of instructional video in the context of its working with other media and as a means of moving people along a continuum of participation in learning. Only a view which includes these ideas will permit instructional video to fulfill its potential for individual and mass education.

Instructional video reaches students enrolled in teaching-at-a-distance courses, campus students who use television to augment traditional modes of instruction, and professionals who require continuous updating in their fields. It also affects a large audience of informal learners. Instructional video presents a challenge in educational research and development because programs must succeed in three ways: academically, aesthetically, and instructionally.

Wide use of instructional video can harvest and make advanced knowledge more usable, increasing public awareness and comprehension of discoveries on the frontiers of knowledge. It can reduce the time lag between conception and application of ideas which change society. It can improve the image of higher education by becoming a resource to faculties. Excellence in instructional video will signal improvements in instructional design, and will impact on teaching standards everywhere. Widescale use of the medium may be especially significant in countries where teachers are scarce.

Producing multimedia courses and establishing an open learning network are costly activities. A comprehensive multimedia course of high quality may cost from $250,000 to several million dollars. It usually involves production of television, radio, newsprint, study guide, and text materials. Estimated cost of producing the several hundred courses required is $60,000,000 per year for five years. This investment of talent and resources will enable us to achieve new levels of quality in education.
In most teaching-at-a-distance financial models, it is assumed that the production costs must be recovered from fees paid by the institution that uses the course or by the students who enroll in it. This burden on the direct users of the course does not take into account the other beneficiaries, however, and may restrict the growth and potential usefulness of instructional video. An alternative model must be constructed which divides the costs among all the beneficiaries, and is less dependent on federal subsidy.

Policy must be formulated to support all these aspects of instructional video and more. It should encourage video. Policy should foster a number of low-cost efforts which are the laboratory for large-scale productions and the training ground for instructional media personnel. Policy makers should nurture the team relationship of scholars, designers, artists, and analysts. The principles of and research on instructional video must be incorporated in a vigorous national policy, but this will be accomplished only when the evidence is presented systematically to policy makers. A compelling example of truly outstanding instructional video, a successful regional network, or a national champion for instructional video may bring the necessary focus for policy formulation.

What is Policy? I take the definition of "policy" to be something like the following: "Action or procedure conforming to, prudence or expediency... also, a course dictated by prudence or expediency... hence, a definite course of action adopted as expedient or from other considerations... specifically, a course or line of action adopted and pursued by a government, ruler, political party, or the like..." (New Century Dictionary, 1959)

The reason for going to the dictionary is that the concept of policy has always been somewhat fuzzy to me. Therefore, I will try to provide a context
for the subject of instructional video policy by talking in a general way before I become more organized and systematic.

Phrases come to mind such as "We set policy." "We make policy decisions." "It is our policy to encourage the development of the private sector's contribution to education by a suitable tax structure." "The government's policy in relation to instructional video is one of benign neglect."

Usually policy decisions are made on the basis of incomplete information. Further, we usually do not have the rules to fully interpret and extrapolate from the information we have, and the accuracy of the information we do have is often suspect. Policy making under these circumstances is an exercise in common sense, intuition, political negotiation, recognition of appropriate patterns of actions and events, and, finally, wisdom.

Fruitful discussion of policy for instructional video requires agreement on the potential costs and benefits of different policy decisions and the appropriate role for different elements of society in achieving certain ends. Without some agreement, a policy paper would assume the air of advocacy journalism. Since I have almost no idea of the commonly held views among the participants of this conference, let me at least put forward my own observations and conclusions.

Background Statements About TV and Instructional TV. Video is a medium of high emotional impact. People are attracted to the medium. They interact emotionally as well as intellectually with what they see and hear on the screen. As evidence, consider the advertising power of TV, consider the impressive sale of books which are related to successful TV series such as *Civilisation*, *The Ascent of Man*, *The Adams Chronicles*, and *Rich Man, Poor Man*. Martin Chamberlain of the University of California at San Diego Extension Division reports that the use of a video series increased the retention rate in a home study psychology course from 30% to 60%. Dr. Bernie Luskin of Coast Community College reports that when a TV
course on anthropology is shown one semester, enrollments in anthropology go up the following semester. This illustrates that television has latent as well as immediate effects. "The Incredible Machine" program on the human body outdrew commercial programs in many parts of the country during prime time. Viewer surveys of instructional video-series of high quality reveal that a surprisingly large number of people faithfully watch all or most of the series. Another interesting line of evidence concerning the potency of the TV message comes from surveys that show people do believe that television is both the most attended to and most trusted source of news.

The above lines of evidence suggest that instructional video can attract and hold a mass audience. The economics are such that while money alone never can guarantee quality, increases in investment in production will increase the size of the audience sufficiently that the cost per viewer-hour is decreased. Increased investment in production should also increase other beneficial effects. For example, we can hypothesize that a series of successful courses employing instructional video will eventually result in increased involvement with lifelong learning in most areas of the curriculum. In a sense, instructional video should prove to be a potent advertisement and consciousness-raising force for continuing higher education.

Questions. If the observations and inferences about the power and consequences are correct, we can begin to generate questions upon which we can base policy:

What is the catalog of instructional video effects? What is the magnitude of these effects? Are there negative or possibly negative effects? What is the optimal amount of instructional video which should be available to stations? Do we need additional stations to carry instructional video? What kind of incentives and regulation are needed to ensure the airing of instructional video at the needed times and in the optimal volume over present and projected
stations? What is the optimal mixture of local, state, federal, public and private funding for instructional video? How will future technologies such as video-discs and micro-processors affect the open broadcast market? How will increased levels of instructional video of high quality affect the commercial stations? What policy objectives should we have in this regard? What kinds of regulatory and incentive policies are effective in orchestrating the interplay between instructional video of high quality and commercial broadcasting?

What are the benefits of instructional television to different segments of the public? To what extent is it important for instructional video to be part of a more general teaching-at-a-distance system which would include at-home materials, kits, audiotapes, and other mass media such as radio, newspaper articles, and magazines for news-stand and supermarket distribution? How important is it for the video to be part of a course in which students can enroll for credit?

From the above, I hope it is clear that instructional video is in itself a complex system which is connected to the educational system and to the entire social system. As is usually the case with such a system, questions about instructional video can only be clearly answered when we have the answers to questions about the larger systems in which the instructional system is imbedded. We have nested sets of questions which range from the specific problems of hardware and software; competing technologies, optimal times of intervention and standardization all the way through to questions such as "What are we trying to do as a society?"

As with any complex system, we can ask an endless number of questions. We can choose an endless number of points at which to enter the system for the purposes of analysis. It would seem to be more useful to build a model of the instructional video system which includes the connections across the boundaries. These connections are with the educational system in general and the society in
general. (This model is based upon general considerations of unmet educational need and potential educational effectiveness and experience with a variety of innovative efforts including projects in individualized instruction, development of a Doctor of Arts program, a small PLATO computer-based education project, and the preparation of multimedia courses at the University of Mid-America. In addition, I have spent time in planning the National Institute of Education and in administration of a large urban university.)

Even if the model is judged unrealistic or undesirable in certain respects, at least I feel that it will be useful in enabling one to answer specific policy questions.

Model of an Instructional Video System. Imagine a set of courses in which the television component is always of the quality of The Adams Chronicles. Further consider a network of television stations which can devote ten hours a day to this kind of programming (5 a.m. to 7 a.m. in the morning and 5 p.m. to 1 a.m. at night). Thus if we use five days a week for broadcasting with the weekend used for rebroadcasts, in a year we have about 2500 hours of instructional broadcasting time. If each course has, on the average, twenty half-hour programs, then 250 courses for adults could be broadcast in a single year. Of course, two stations in a region could double the number of courses. It is assumed that the hours between 7 a.m. and 5 p.m. would be used for children's programs, as they are now.

When a course is not on the air, it can be viewed on video tape at learning centers in colleges, high schools, libraries, mobile learning centers, etc. Special groups, such as engineers in a factory or medical workers in a hospital can be served by cable, ITFX systems, or closed circuit.

A person who wants to study in depth but who does not want to formally enroll can obtain the associated course materials and study independently. If
a student feels that he or she has mastered a subject, he or she can take a nationally certified exam (similar to the CLEP, but more demanding) and receive college credit.

Students who wish greater support can enroll through the outreach programs of hundreds of schools which are offering home-study courses geared to the instructional televisions offerings.

With the capability of offering up to 250 courses a year, with some rotation of schedules many adults can, over a period of years, acquire the college credit for a variety of educational and career goals. Because of the quality of the course materials, a large portion of the viewing audience (about 10-15% at any one time) attends to the materials and draws from them as they choose.

The network of learning centers provides a variety of services to help adults make optimal connections with the educational system. The learning centers provide information about all educational programs. Most importantly, they help to develop local learning communities (similar to great books discussion groups) which help to overcome the isolation of the learner who is not enrolled on campus. The learning center is the entry point for the student who wants to sort through the options which have an educational element.

Policy Implications of the Model. If the model is accepted in principle, there are three major areas in which policy is needed. These are:

- Policy to encourage the development of the several hundred courses needed, courses of high quality to form the critical mass,
- Policy to encourage colleges, community colleges, the armed forces, and industry to contribute to and participate in the system; policy to encourage the development of user organizations to influence the development of courses appropriate to their mission.
Policy to encourage the development of the network of learning centers which will provide the nuclei for local learning communities.

Policy Approaches: Timing. Policy can encourage or discourage development at many levels. Policy can either force the development of new institutions and programs or allow new programs to compete for funds with existing institutions. We can set a policy of benign neglect, mild incentives and regulations, or strong intervention. Policy can be set at many different levels of governmental and non-governmental organizations. Once again, the combinations are so many that it takes an act of recognition, imagination, and a certain amount of arrogance to make any recommendations at all.

I am concerned because it is obvious that bad policy can have harmful effects. When we deal with new technologies, the results are often uncertain. If we proceed too rapidly in the absence of the right kind of talent, we assure mediocrity which may take years to overcome -- if we can ever do so. Nevertheless, no decision is also a decision. Having expressed my uncertainty, I make the following policy recommendations:

- Establish a policy of funding for course development which draws on the elements of society most likely to benefit from the courses which are produced. This might include a small earmarked tax on certain income and goods, an allotment from the general fund, or a system of matching grants from federal, state, and private sources.

- Establish a policy of increasing support for course development over a five year period with the level of support coupled to evidence of minimum levels of use by institutions and individuals, as well as the ability of production centers to recruit and effectively use the necessary kind and quality of talent. At current prices, the final level of support needed is about 50 to 60 million dollars a year.
o Establish a policy which will result in about six regional course development centers. These centers would be manageable organizations (annual budget about ten to twelve million dollars) which would produce about ten to twelve courses per year.

o Establish a system which will result in coordination among the production centers.

o Establish a policy of academic review of the courses which will increase the likelihood that instructional video materials will be accepted by the academic community.

o Establish a policy that encourages institutions to award credit for students of courses related to instructional video who successfully complete nationally accredited achievement tests.

o Create incentives for individual organizations, especially educational institutions and libraries, to participate in the offering of courses, the provisions of learning center services, and the specification of what courses are needed. Policy should also be set which leads the participating organizations to provide feedback on the strengths and weaknesses of courses as well as on what new courses should be produced.

Summary. There is sufficient information available to enable us to estimate the costs as well as the potential benefits of the extensive development of instructional video for adults. We can further estimate the likely beneficiaries of the instructional video system. From these analyses we have the information needed to establish a policy for the development of a coordinated network using instructional television as a key element. Key policy areas would assure a production system capable of instructional television as well as a system which will enable the video and related materials to be used by a mass audience in a variety of ways.