

MEDIA AND TECHNOLOGY

Introduction

In today's communication rich environment, when someone mentions "media," we tend to think of television, and the term "technology" often conjures up visions of computers. To judicial educators, media and technology may mean devices and materials that can be used to enhance learning in their educational programs. For judicial educators, overhead projectors, slides, audio and videotape, television, and other media can provide stimulating and effective instruction in classes you administer or teach. This chapter provides information about the effective use of media in judicial education programs.

The first section of the chapter presents reasons why media should be considered whenever instruction is being planned. Following this, several general considerations for using any form of media are listed. Then, several media are described, along with information on how to prepare and utilize each of them in the classroom. Emerging technologies that will influence judicial education in the future are then briefly described, followed by a chapter summary and a list of references. These references provide detailed descriptions of a wide variety of media production techniques that go beyond the scope of this chapter.

Why Use Media?

According to Edgar Dale (1969), media are well recognized for their abilities to:

- Heighten motivation for learning.
 - Provide freshness and variety.
 - Appeal to learners of varied abilities.
 - Encourage participation.
 - Give needed reinforcement.
 - Widen the range of learner experience.
 - Assure order and continuity of thought.
- B Improve the effectiveness of other materials.

Media have consistently been shown to increase learner motivation when used throughout training sessions. For example, open-ended videotape segments that create situations (such as the interaction of a court employee and an irate client) which leave the situation unresolved are guaranteed to trigger an active discussion among participants in a workshop. Media can also add variety to lengthy classroom sessions to regain lagging attention, perk up learners, and re-emphasize key points in the lesson. Experience has shown that properly used, media can assist learners of widely varying abilities to achieve the objectives of a lesson. Adding visuals and sound to complement faculty increases the number of channels to participants. The increased motivation that can accompany media use also encourages more learners to participate in discussions, ask questions, and generally become more active in their own learning. The power of media to stimulate in-class activity is a common reason for its use by experienced educators.

Media, particularly video and television, can increase learners' awareness of situations far beyond experiences in the work environment. For example, media can document and present powerful and convincing evidence of the successful implementation of alternative judicial practices in other parts of the state or country. Media that are carefully integrated into a course can also provide structure for both the faculty and learners. Continuity of ideas, avoiding digressing into minor or unrelated topics, and closer adherence to the objectives of the lesson are additional advantages of thoughtful use of media. Media can help improve the effectiveness of other materials such as handouts, textbooks and assigned readings. Media can provide the framework for these other materials, reinforce their main ideas, and motivate learners to complete other assignments. Taken together, these abilities of media present a compelling case for incorporating them into most forms of judicial education.

General Guidelines for Using Media

Although there are many guidelines specific to individual media, there are some general guidelines that apply to all types. Regular use of these guidelines has been demonstrated to increase learning and enhance both faculty and learner satisfaction. While many of these guidelines might be considered common sense, they are not as commonly used as one might expect. Thus, they are presented here as a reminder to faculty. While every guideline will not be used for all presentations, some will be appropriate, and all should be considered. They can be categorized under three headings: (a) self-preparation, (b) learner preparation, and (c) material presentation.

Self-Preparation

- Always preview the material.
- Make a list of any unfamiliar or unusual terms.
- Clearly identify relationship of content to other materials to be used.
- Prepare an outline of the program’s content and consider giving it to learners.
- Prepare any follow-up activities such as worksheets or discussion questions.
- Prepare the room (e.g., close blinds, locate electrical outlets, light switches, thermostat, etc.).
- Be sure screen is visible to all learners and seating is properly arranged (check this by walking around the room).
- Be familiar with operation of required equipment (e.g., know how to change bulbs).

Learner Preparation

- State the objectives of the presentation.
- Pose questions that the presentation will answer.
- Introduce and explain unfamiliar or unusual terms.
- Provide an outline of content if appropriate.
- Relate presentation to prior and future activities and/or content.
- Alert learners to any biased or inaccurate content.
- Discourage extensive note taking — research indicates this often decreases learning (a good reason for providing an outline).

Material Presentation

- Have the presentation “ready to run” without cuing or threading.
- Display an active interest in the presentation (i.e., don’t leave the room or act bored).
- When doing a presentation, be sure not to block learners’ view of the screen.

- Consider stopping or interrupting the presentation to discuss, clarify, or predict what comes next.
- Consider showing the material (or part of it) a second time -- research shows this can dramatically increase learning of complex material.
- Follow up with questions, discussion, worksheets, etc.

Media Taxonomy And Descriptions

This section of this chapter discusses several specific media commonly used in judicial education. Those selected for discussion (overhead projector, still visuals, and video and TV) are generally available, easy to use, and powerful in their effects. Mastering these basic media has the additional advantage of providing you and your faculty with a base of knowledge that will permit you to take advantage of emerging technologies, such as computer-based instruction and interactive videodisc, that are now beginning to influence judicial education.

Because the scope of media and technology is vast, it is useful to categorize media into some kind of workable taxonomy. Therefore, this section looks at the uses of: (a) simple or still materials (including print, overhead transparencies, slides and photographs); (b) motion media (including videotapes and films); (c) computer-assisted instruction (including drill and practice programs, tutorials and simulations); (d) interactive technologies that combine computer-based learning and compact videodiscs; and (e) telecommunications technologies.

This section will not provide in-depth details but will provide an overview of the attributes of the media in each category and a discussion of current uses. Keep in mind that some attributes apply to several media formats. The categories are used to organize media around different types of teaching objectives and to match media attributes to desired learning outcomes.

Still Media

Print Materials. Print materials contain characters, numerals and words and can be enhanced with drawings, pictures or illustrations. They can be used alone or in conjunction with other types of media -- as documentation for computer software or as a printed version of the narration that accompanies a set of slides. Handouts and worksheets are used when the aim is to individualize the instruction so that learners can work at their own pace.

Four considerations in designing print materials are:

- *Design.* Arrange information on the page to highlight main ideas. Use spacing, boldface type, and underlining to guide the learner to important information.
- *Style.* Write in a style that is simple and easy to follow. Define any technical terms when they are first encountered.
- *Legibility.* Use bold, block lettering.
- *Simplicity.* Keep visuals simple and use only those that clarify or reinforce the text.

Photographic prints. The old saying, “A picture is worth a thousand words,” can be especially true when trying to evoke an emotional response from the learner. It is one thing to hear or read that hundreds of children are physically abused each year, but a photograph of a battered child usually has a much greater impact than any written material on the subject. Because photographs are two-dimensional, it is a good idea to take pictures of a subject from several angles so that the viewer is given as much information as possible.

For example, photographs of an accident scene taken from many angles will give more information than a single shot. The realistic details made possible with photographs will provide a common ground for understanding and will often clear up misconceptions about an incident.

Photographs can be used in creating: (a) displays, (b) photo-essays, (c) manuals, and (d) study prints. Generally used in individualized instruction because of their size, photographs can also be projected with the use of an *opaque projector* when group viewing is desirable. This projector uses reflected light to project flat pictures or drawings on to a screen or white wall. When using an opaque projector, do not insert objects that can be damaged by heat. Pages of books or magazines should be covered with a heat-resistant glass to avoid damage.

Slides. Photographic slides are created much in the same way as photographic prints except a different type of film is used to capture the images. Slide film produces a transparent image that must be projected. Sound can be added through some external source, either a live narrator or an audiotape player. Slide sets are easily revised by rearranging, deleting or adding to the set. A cousin of the photographic slide is the filmstrip; however, it lacks flexibility in revising. Slides are appropriate for individual or group use. They provide realistic details of subjects under study and are particularly suited for demonstrating processes that do not involve motion, such as explaining how a case passes through the courts, how to process a summons, or how judicial officials are elected. Slide sets are popular with instructors because they are easy to produce, use, store, and modify. When using slides, keep in mind the following:

- *Develop a “storyboard” for presentation.* The storyboard should be a complete sequence of the slides showing a rough sketch of what will be seen and what will be heard.
- *Talk about what is being shown.* There should be a close relationship between the narration and the scenes.
- *Select appropriate music or sound effects.* Sound effects tend to heighten involvement by the audience. Guitars, banjos and percussion instruments record well.
- *Reduce commentary to a minimum.* Allow the visual to carry as much of the communication as possible. Do not leave a slide on the screen longer than 30-60 seconds.
- *On recorded narration, vary the voices.* Use different voices to help create desired effects.
- *Talk to learners on their level.*
- *Use slides to stimulate group discussions.*

Overhead transparencies. Overhead transparencies are produced from photographic film or clear or colored acetate. The most frequently used transparencies are made from thermal acetate. Transparencies can also be made by sending carbon-based originals through a plain paper copier with film that has a special sensor attached to one side. Photocopier films are designed to be used in either dry or wet toner copiers, but not both. Computer-generated transparencies that are produced with a laser printer have also become popular. As with the films for copy machines, it is now possible to create transparencies quickly and efficiently using a microcomputer. Also, it is possible to purchase a special transparency maker, called a types Tyler, that looks like a typewriter. Simply roll a sheet of film into the types Tyler and select a page format for your transparency. Type in the desired material and print it out. The device is lightweight and portable. Transparencies can also be produced by writing on clear acetate with a grease or water soluble pen. This technique is quick and simple, but often lacks a polished professional look. Finally, transparency film that is pre-printed with images, borders, slogans or logos, may be purchased. Use these as background and write directly on them or use press-on lettering.

Overhead transparencies are useful in: (a) helping learners with note-taking and keeping track of discussions; (b) displaying key ideas in a step-by-step fashion; (c) distinguishing or contrasting ideas; (d) presenting and explaining graphs, charts and diagrams; and (e) controlling the audience’s attention.

When designing and producing overhead transparencies, it is important to keep in mind the following points:

- *Limit each transparency to a single concept or idea.* Do not try to cover too many points on one transparency.
- *Use horizontal rather than vertical images.* Screens are designed for images that proceed from left to right, rather than top to bottom. The human eye also naturally scans horizontally.
- *Use a maximum of six words per line and six lines per visual.* It is important to allow for enough white space around words to make them legible.
- *Don't number items unless ranking is germane to what is being presented.* Use bullets, checks, boxes or arrows to separate ideas.
- *Use a simple sans-serif type style for lettering.* Do not use fancy or Gothic style letters since they are difficult to read.
- *Do not use elite or pica type.* These do not project well and are not readable from the screen. If type-written pages are used, duplicate them for individual handouts.
- *Use color to emphasize or differentiate areas of content.* Color guides the viewers' attention and helps comprehension. Permanent felt markers or color adhesive film can be used if color is needed. There are now printers that will produce computer-generated transparencies in color. These, however, can be expensive.
- *Use overlays to build complex ideas.* Overlays should show new information or directive symbols. Use cellophane or masking tape to attach them to the frame or mask. Position each overlay so that it lines up properly with the cell beneath.
- *Mount transparencies in 12" x 10" frames.* These will fit into drawers in standard filing cabinets.
- *Use handouts to accompany transparencies.* When necessary, provide the audience with handouts of key information to take with them for study and to reduce note taking.
- *Outline what you are going to say about each transparency.* Make notes about content on the transparency frames if necessary to help ensure a smooth presentation.

The overhead projector makes using transparencies easy and inexpensive. Simple guidelines for effective use of the overhead projector itself follow:

- *Place transparency on overhead projector before turning on the lamp.* A lighted screen with nothing on it is annoying to an audience. Turn off the projector between transparencies to direct attention to yourself.
- *Always point (with pencil, pen, or pointer) to information on the projector.* Never turn your back to the group. Point to information by pointing to the transparency, not the screen.
- *Never write or mark directly on the overhead projector.* Mark only on the transparency.
- *Avoid “keystoning.”* Keystoning is distortion of the image caused by improper alignment of the screen and overhead projector. The image on the screen is wider at the top than at the bottom. To correct this problem, slightly tilt the top of the screen toward the projector so that the image falls on the screen at a 90 degree angle.
- *Use a sheet of paper to cover and reveal areas of the transparency if you wish to reveal information in a step-by-step fashion.*
- *Practice changing the lamp.* The most common problem with using overhead projectors is changing burned-out lamps. Be careful, however, since the lamp may be quite hot.
- *Keep the lights on in the viewing area.* The overhead projector produces a very bright image so there is no need to darken the room. However, if any direct room light on the screen can be reduced, it will enhance visibility.

Selecting a screen. Most of the media discussed in this chapter require projection equipment. The proper screen and seating arrangement are important to any presentation. Screens should be selected according to the environments in which they are to be used. They come in three basic types:

- *Matte white.* This should be used when projection light is strong, such as with an overhead projector. This screen has a smooth non-gloss surface and will diffuse light evenly over a large area.
- *Glass beaded.* This has a rough, beaded surface and gives excellent picture sharpness and good color rendition. However, the room should be darkened for good reproduction and must be viewed head-on, not at an angle, for best results.

- *Silver lenticular*. This should be used when you need to control horizontal light reflections. These screens produce sharp, brilliant images but must be used in a partially darkened room.

If the viewing audience is no more than 10 feet away, a screen can be as small as three feet wide. However, for best viewing, the farthest seat from the screen should not be more than six times the screen width.

Video

Instructional television and *video* have assumed a prominent place in many judicial education classrooms. Television offers realism (color, motion and sound), emotion and relevance, and the videotapes can be recycled through many uses. It is an ideal medium when the instructional objective requires the combination of sound and motion. With video, it is possible to manipulate time, space, and motion to achieve desired effects, either affective or cognitive. A videocassette recorder can be used with an entire class or a single individual, allowing learners a great deal of freedom and flexibility. A basic video system is easy to operate, requiring a camera, a microphone, a video recorder/player, and a monitor. While the 3/4-inch *videocassette* is still being used to some extent in industry, the 1/2-inch format (VHS) has become the standard in practically all other institutions.

The judicial educator can videotape lectures or presentations for later use. A single-camera set-up makes this operation simple and easy, requiring minimal skill. This technique can also be used to tape interviews of witnesses, experts, crime scenes, etc. Appendices 13 and 14 discuss application of videos to learning experiences, including sophisticated video material. Locally produced tapes can be edited to include segments from commercial programs or more sophisticated productions. For example, there are evidence situation tapes available from the American Academy of Judicial Education. Segments from these tapes can be used to illustrate a particular point in an evidence course. Courtroom proceedings can also be videotaped to be included in later discussions or presentations. Remember to obtain releases of such tapes from the appropriate sources before using them. For more information on types of materials judicial educators can use, see Appendix 15.

Video is portable, affordable, and flexible. When using videotaped presentations:

- *Always preview the tape before using.* You need to know exactly what is on the tape so that questions or other difficulties can be anticipated.
- *Prepare the learners for what they are going to see on the tape.* A brief outline of the main points should be handed out to participants.
- *Following the viewing, summarize the content and lead a discussion over the critical points.*
- *Show long tapes in small segments.* This helps avoid information “overkill” and wards off boredom.
- *Arrange the viewing area so that no more than 30 people watch a 19" screen at one time.* If a larger group needs to view the tape, obtain additional TV sets or a large screen TV projector.
- *Always check and try out the equipment before using.* Play a portion of the tape and inspect for sound and video quality.

Computer-Assisted Instruction (CAI)

Computer-assisted instruction involves computer software programmed to help learners accomplish specific objectives. There are presently three main types of CAI programs being used. The first, “drill and practice programs,” are simply what they imply. They are designed to drill the learners on material that has been introduced in the classroom, but not yet mastered. They are particularly useful when the faculty wishes to avoid holding back the progress of a group due to the slowness of a few individuals. Some programs are designed to be randomly accessed and provide immediate feedback on the learner’s progress.

The second type of CAI, “tutorials,” introduces new subject matter to the learner. Tutorials are ideal for use when learners have widely varying levels of knowledge. Tutorials allow progression at different rates. The computer introduces concepts, defines new terminology, and tutors the learner as he or she explores the new material. Immediate feedback to the learner is also a feature of these programs.

The third type of CAI program is simulations. They compress time and space and simulate real-life situations. Simulations help learners generate hypotheses about phenomena and pose relevant questions. They are particularly useful when it is impractical to encounter real-life situations. Simulations

are successfully being used in airline-pilot training, driver training and in observations of social interactions. The learner is protected from the hazards associated with an activity until he or she is sufficiently trained to encounter them.

If the judicial educator wishes to present information using the microcomputer to a group, a display device called an **LCD** can be connected to the microcomputer and placed on an overhead projector. The image on the computer screen can then be projected to a large screen at the front of the room.

Interactive Technologies

An interactive learning system generally employs a microcomputer system with a hard-disc drive and a laserdisc player hooked together as a single unit. A computer software program controls the selection and use of sequences of information stored on the disc. The computer can randomly select material from the disc and “freeze frame” any segment of the lesson as needed. Discs may contain motion segments, photo-quality still images, sophisticated graphics, spoken text, as well as music or other sound. Computer-generated materials can also be used in conjunction with information from the disc. Materials can be accessed through the use of a keypad, a keyboard, or a touch-sensitive computer screen. Unlike videotape that is linear by nature, a **videodisc** allows easy random selection of its content. Interactive learning systems are ideal for discovery learning, serious inquiry, and experimentation. For example, a learner in judicial education could trace the handling of vital evidence from its discovery to its use in court, or could study the history of the U.S. judicial system with pictures, audio, and segments from famous speeches or readings from historic documents.

Telecommunications Technologies

Telecommunications systems require a computer terminal that is connected by telephone lines to another computer terminal. Specially designed software programs allow the two terminals to “talk” to each other. A user at one terminal can access the database or information that is stored at another terminal, sometimes hundreds or even thousands of miles away. Learners are put in touch with other parts of the state, the country, or perhaps, the world. This brings different perspectives to the learning environment and fosters collaboration.

Local area **networks** (LANS) are being used in many traditional classrooms. Each learner has a workstation or terminal that is connected to the instructor’s station, usually at the front of the room. Sometimes there is a large projection screen that can be easily seen from all stations. All classroom activities take place over the network. Classroom files and databases can be accessed prior to, during, or after class by individual learners. Assignments can be submitted electronically to the faculty member who can retrieve assignments at his or her leisure and return them electronically to the learners. The

networks allow participants to collaborate on projects in a non-threatening, cooperative environment. The role of the faculty is significantly altered because he or she now serves mainly as a guide or consultant to the learner.

Satellite technology. Increasingly, telecommunication satellites are being used to bring instruction to sites that are far removed from the instructor. This technology has the capacity for two-way communication and can transmit both audio and video signals to a number of different sites simultaneously. Most systems include a receiver satellite dish, reception device or downlink, a video monitor and recorder, a printer, and a telephone (this can even be cordless). Depending on the system, the satellite allows learners to communicate with other learners in other places as well as with the instructor who might be at still a different site. Instruction can be delivered through interactive video, computer, or live presentation. Adult learners, who are often hampered by job requirements, family obligations, or geographic location, are finding that distance learning programs via satellite, known as *teleconferences*, offer important opportunities to continue their education. Lower cost options such as slow scan TV, Instructional Television Fixed Service (ITFS), and existing cable TV systems can also be used to reach geographically dispersed learners. These alternatives may be particularly attractive if the capability already exists within the area to be served.

The judicial educator could use satellite transmission or other education technology in a number of ways to provide instruction to increasingly larger and more diverse audiences. For example, using electronic blackboards or graphics writing tablets, segments of video programs, microcomputer software programs, demonstrations, and a host of other resources, the judicial educator can present data and information relevant to court cases, crime investigations, or the analyses of evidence. Telephone lines could then make it possible for participants to ask questions, discuss the material or share their personal experiences with other learners. While distance learning via satellites and other technology is still developing, many educators are finding that it offers opportunities for faculty and learners to interact at times and places that are convenient to both without the expense and difficulty of assembling everyone in the same room. See Appendix 11 for an example of a judicial education program that utilizes audio teleconferencing for referee and magistrate training in that state.

Summary

In summary, media and technology play an important role in judicial education. The demands of an increasingly complex workplace, coupled with new developments in technology, create an opportunity for judicial educators to increase the effectiveness and motivational power of training. Both simple and complex media can play roles, but there are a number of actions that faculty can take before, during and after their use to increase their impact. Becoming familiar with currently available technology is the best step in preparing for the emerging technologies that will begin to shape judicial education during the next decade. The suggested readings and sources of additional information that follow will be helpful in learning more about locating and producing effective media.

DEFINITIONS

CD-ROM (Compact Disc Read Only Memory): a disc that stores digital information that can be read by a laser beam.

CRT (Cathode-ray Tube): video display tube used in monitors, receivers, and computer terminals.

Compact Disc: a 4.72" disc on which information has been recorded with a laser beam.

DVI (Digital Video Interactive): system that incorporates moving images, audio, and print into a computer program.

Digital: a signal that is generated to fixed-value pulses, expressed in digits.

HyperText: computer program that allows a user to continually access a large base of information whenever additional information is needed.

LCD (Liquid Crystal Display): display device that uses a crystalline material sandwiched between two pieces of glass, used to project images from a computer screen through an overhead projector onto a regular screen.

Network: configuration of computers, storage units and input/output devices that are all hooked together for the rapid transmission of data or information.

Opaque Projector: a piece of equipment which uses flat materials through which light cannot pass, projected by means of reflected light.

Teleconference: electronic transmission of audio and video between geographically distant sites.

Video: portion of the television signal that carries the visual information.

Videocassette: video recording that is enclosed in a cassette.

Videodisc: video recording on a disc.

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SOURCES OF SUPPLIES AND EQUIPMENT

Materials for creating transparencies can usually be found at most office supply stores, school supply outlets, and office supply areas of large discount stores. For a complete listing of suppliers of materials for overhead production, write *Audio Visual Communications*, 445 Broad Hollow Road, Melville, NY 11747.

A source for locating A-V equipment and production devices is: *The Equipment Directory of Audio-Visual, Computer, and Video Products*, The International Communications Industries Association (ICIA), 3250 Spring Street, Fairfax, VA 22031-2399.

For ideas on the use of new products and technologies, a periodical source is *Media & Methods*, 1429 Walnut Street, Philadelphia, PA 19102.