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ABSTRACT
               This paper provides guidelines for using video
presentations in teacher education programs in special education. The
simplest use of video is to provide students with illustrations of
basic concepts, demonstrations of specific skills, or examples of
model programs and practices. Video can also deliver contextually
rich case studies to stimulate student discussion of issues and
application of knowledge and skills. Information about commercially
available videotapes relevant to education can be obtained from
publications catalogs, information clearinghouses, and advertisements
in professional newsletters and journals. Written permission from the
publisher should be obtained if a videotape is used in a distance
education program or if video materials are transferred to a
different format. Because most videotapes depict models from urban
and suburban schools, there is a need to develop videotapes that
depict successful rural models, methods, and materials. A critical
step in creating original video production is securing permission
from agencies or individuals to be videotaped in the home, classroom,
or community setting. Other important steps in creating original
materials include preparing a script or outline to guide videotaping
sessions, insuring that all needed equipment and materials are
available, and checking that all desired footage is obtained during
taping. Many colleges, universities, and state education agencies
have their own video production facilities or have access to local
companies or free-lance producers. If funds allow, the assistance of
trained and experienced personnel can ensure a satisfying final
product. In addition, effective video materials for instructional use
can be easily created through computer technology. Includes resources
for commercial video purchases and for video production. Contains 21
references. (LP)

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CREATING AND USING VIDEO SEGMENTS FOR RURAL TEACHER EDUCATION

Introduction

Video presentations of teaching episodes are acknowledged as important adjuncts to instruction in practical professions such as special education. Yet most faculty make little or no use of video materials in teacher education programs in special education. Although a wide range of commercial videtapes is available, many instructors are not aware of how to locate and utilize such materials in their courses or the materials they choose depict educational programs in urban and suburban areas with little direct applicability to rural schools. In addition, most colleges and universities have video production units, but instructors may not know how to collaborate with school personnel or technical staff to plan and produce original video segments. And, today's desktop video production technology makes the creation of original video materials well within the capabilities and finances of the typical instructor, but few of them know how to take advantage of these resources. Some simple guidelines can help all faculty members acquire the knowledge and skills needed for appropriate application of existing commercial materials, successful preparation of professionally produced materials, and effective and efficient purchasing and using a desktop video system for development of original video materials.

Rationale for Instructional Video

Video materials are ever more frequently used to support instruction in teacher education in special education. In recent years, instructors at many colleges and universities have turned to the use of video segments to portray for students the dimensions of the real world of the classroom (Goldman & Barron, 1990; Todd, 1993; Willis & Meblinger, 1996). Videotaped classroom scenes and teaching episodes have been recommended as one form of anchored instruction or situated learning, enabling student sto make the connection between theory and practice (Bransford et al., 1990; Brown, Collins & Druguid, 1989; CTG-VLTC, 1993; Lave & Wenger, 1991). The difficulty of providing field experiences to preservice students and classroom visits to inservice teachers makes the use of video to demonstrate programs and practices not only cost-effective, but even essential t developing the kind of knowledge and skills that special education personnel need to function well in their demanding and ever changing roles and provide high quality educational programming to students with special needs.

Computer-assisted instruction has been an important component of teacher education for over a decade (Cartwright, 1984; Blackhurst & Barron, 1990; Reith et al., 1993). More recently, use of multimedia modules for instruction has been found to be especially effective in promoting development of new clinical knowledge and skills through creating structures for situated learning of current best practices (Chen, 1993; Fitzgerald, Wilson, & Semrau, 1996; Overbaugh, 1994), as well as appropriate for providing learners with opportunities for reflection, problem solving, and practical application with feedback (Goldman & Barron, 1990; Lave & Weger, 1991; Reith et al., 1993). New authoring software programs, which enable program designers to incorporate text, graphics, and video with ease, have made the creation of modules a real possibility for the average instructor who is willing to take the time and effort to learn some new skills.

The last several years have seen a tremendous growth in the application of distance education models utilizing telecommunications technologies for personnel preparation in special education. Programs are now available in every section of the country as well as for all areas of specialization, primarily to prepare teachers for service in rural areas (Ludlow, 1995). Since most distance education programs rely on broadcast or pre-produced video of some type, appropriate

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use of visual presentation methods and materials is critical to successful delivery (Bates, 1987; Cyrs & Smith, 1990). As telecommunications-based distance education used to train both preservice and inservice special education personnel becomes more widespread in the years to come and as they compete with one another for student enrollments across the country, effective use of video materials will become a critical feature of programs that survive and flourish.

Video development is no longer the exclusive domain of the wealthy or the technically sophisticated. The recent revolution in desktop digital video and its incorporation into computer presentation software programs has made video production accessible to the average user (Sauer, 1996). The availability of inexpensive computer software and hardware has made the creation of original video materials integrated into multimedia applications tailored by the instructors for their own specific uses a new outlet for course development and scholarly productivity (Howes & Pettengill, 1993; Richards, Chignell, & Lacy, 1990; Wagner, 1996). Instructors who now use their computers via word processing and database programs primarily to design print or text-based materials, will soon find new uses for their desktop systems to create video materials for display in their classes via tape or disk formats.

Using Video Segments in Instruction

Videotape segments can be used in many ways to deliver and support instruction in the context of teacher education programs. The simplest and most straightforward use of video is to provide students with illustrations of basic concepts, demonstrations of specific skills, or examples of model programs and practices, through presentation of either real world situations or simulations. Video materials also can be used as contextually rich case studies to stimulate student discussion of issues and/or application of knowledge and skills.

Effective instructional use of video material requires consideration of the reason for using the segment as well as the desired learning outcome. Many instructors simply show the entire videotape, then continue to lecture on related topics, without providing learners with guidance in viewing the segment or in discussing its content. It is often better to show only portions of the video, either pausing the tape to explain or discuss content between sections, or playing only selected parts of the tape; this practice helps students to focus attention on the most important information. Supplying advance organizers assists students in understanding the instructor's purpose in showing the video and making sense of what they see. An especially useful technique is to provide learners with one or more questiosn to be answered while viewing the video, such as identifying or critiquing the behaviors observed, supplying the underlying theories or assumptions of demonstrated practices, or making recommendations for correction or improvement.

Locating Existing Video Resources

There are many excellent videotapes on topics relevant to education and special education already available commercially through publishing houses, production companies or educational agencies. Information about these resources may be obtained from publication catalogues, information clearinghouses, and advertisements in newsletters and journals of professional organizations. A number of national conferences held by professional organizations in special education and disability services regularly include video festivals, at which participants can view videotapes and obtain purchasing information. Some companies also allow for a free preview or offer tapes at minimal rental fees prior to purchase. Commercial videotapes vary greatly in price and quality. Those sold by publishers and producers are generally of higher quality and range in price from $100 to $500, while those available from educational agencies may cost anywhere from $10 to $100 for a tape of lower quality.

Once a commercial tape has been purchased by an individual faculty member or academic unit, it is available for unlimited use in face-to-face instruction. It is unclear at this point in time whether the purchase includes broadcast rights, so it is generally considered safer to request written permission to use the video material in a distance education program. Such requests should

indicate the specific instructional use for the tape, the transmission mechanism, the time, location and audience for the broadcast. It is also helpful to outline steps that will be taken to protect the tape's security, such as prohibiting copying by others, restricting the number of snd access to copies, or superimposing a copyright warning. It also is wise to request permission if the video materials must be transferred to a different format, such as to another tape (for example, from VHS to 8mm for use in another tape player) or to optical disk storage (for use on computers).

Creating Original Video Materials

Colleges and universities with teacher education programs in special education that prepare teachers and related service personnel to work in rural areas need to use instructional materials that depict program models, methods, and materials that have been successful in rural schools. Yet, most of the videotape materials that are widely available represent program models from urban and suburban areas that may or may not be appropriate for or feasible in rural schools. This situation means that many faculty will see a need to create original video materials, by working with professional video production teams or utilizing desktop computers for their own video editing.

A critical step in creating original video production is securing permission for agencies or individuals for videotaping in home, classroom or community settings. Most educational agencies require an official written request to be approved by the chief administrator or governing board, followed by permission slips signed by parents or guardians or the individuals themselves before any video taping can begin. Most agencies will cooperate with a legitimate request to videotape their program if they are assured that the personnel involved will behave in a professional and responsible manner. Video personnel also need to make accommodations for those who do not agree to be videotaped, but who may be on site during the taping (such as children without pemission slips, accidental); this is easily arranged by locating them out of the camera's field of vision or sending them away from the area temporarily.

Another important step in creating original materials is preparing a script or outline to guide the videotaping sessions. The time, effort and expense associated with videotaping, especially in field locations and particularly where distance is involved, demands that advance planning to insure that all needed equipment and materials are available (microphones for interviews, lighting for dark locations, special lenses for cameras) and that all the desired footage is obtained (considerations in the daily schedule, availability of individuals for demonstrations or interviews). Careful planning is definitely essential when preparing to videotape a one-time-only situation that cannot be reproduced (a special school event such as graduation, an activity where a new skill cannot be unlearned) or when using a location that requires a considerable travel time and distance (such as a remote, isolated rural area, or an out-of-state agency).

Overseeing Professional Video Production

Most colleges and universities as well as state education agencies have their own video production facilities or are located in geographic areas with access to local companies or free-lance producers. If sufficient funds are available to use professional services, many instructors will prefer to have the assistance of trained and experienced personnel. A professional production team may include one or more specialists. Some will work during taping, such as a videographer to operate the camera and frame the shots, an audio engineer to locate microphones and monitor sound levels, a director to coordinate everyone's efforts, and a producer and/or production assistant to see that all needed supplies are on hand and to keep everyone on schedule. Others will work before or after taping, including a scriptwriter to plan the video components and draft any narrative sections, a voiceover artist to read the narration for taping, and an editor to combine video, audio and text segments into the finished production. In small production facilities, one or two individuals may share all these responsibilitie to keep production costs within reason. Working with a professional production team requires a discussion of content, roles, and budget issues. The instructor should prepare a comprehensive outline of the desired video materialso that the producer can estimate costs, prepare a timeline of activities, and determine the personnel

needed. A written contract outlining activities, responsibilities, and due dates will promote a smooth working relationship and a mutually satisfying final product.

Using Desktop Computers for Video Production

Effective video materials for instructional uses are easily created using today's desktop computers. The first consideration is determining the platform to be used; although Apple's Power Macintosh computers are the best choice for video and multimedia production because of their ease of use, other platforms can be used. The computer to be used for video production needs to have good speed and memory to manipulate large files. The computer also must be equipped with a video input board to transfer video footage from a camera to the computer's storage; a board comes with some platforms, but will need to be installed in others. It is generally helpful to have access to external storage devices, such as an external drive that uses 100 megabyte disks or 1 gigabyte disks, to store raw footage, editing in process, and finished products.

The camera that is used to capture the original video footage is a critical component of high quality desktop video materials. Although broadcast and professional/industrial cameras provide the best footage for digitizing and editing, their prices are generally beyond the budgets of mist individual faculty and academic units. Consumer video equipment, on the other hand, is inexpensive and readily available, but cannot produce satisfactory image quality for desktop production. The best choice will be prosumer cameras, either S-VHS or Hi8mm formats, or the new digitalcameras by Sony and Panasonic, which offer a balance between reasonable cost and good quality. One or two portable lights are absolutely necessary to insure sufficient light to capture a good image. A tripod with a fluid motion head will support the camera during use, and a stabilizer can help the operator smoothly follow moving people or objects. Many books are available on videotaping techniques, which discuss positioning people and objects, framing shots and lighting scenes. Other references discuss important steps in editing video.

Many software programs are now available for editing video on desktop computers. One of the easiest applications for beginners is Adobe Premiere, which is bundled with many video boards. More advanced users may want to try applications that produce special effects, such as layering and compositing of moving images, morphing of one image into another, or three dimensional ritation of images. Most instructors will need training on use of these programs as well as support from a technology specialist during development. Books on editing stress clartity, simplicity, and impact. Clarity is maintained by the use of footage that tells the story in sequence from a wide shot to establish the context or setting to a medium shot to focus attention on the main event, and finally to a close shot to zero in on the critical features. Simplicity is best achieved by selecting the shots that best tell the story and by keeping effects to a minimum. Impact can be heightened by selecting footage that conveys content powerfully, portraying both image and mood.

The format in which the video segment will be used will determine the equipment needed for the final production activities. Video to be printed to tape will require a video output board and tape deck. Component video boards, such as the Media 100 qx, provide a better finished tape (especially if a bhigh quality camera was used initially and the tape will be used for broadcast), but less expensive composite video boards print tapes of adequate quality for most instructional uses. The choice of deck will be determined by the tape format desired, such as VHS, S-VHS, 8mm or Hi8mm, Beta UVW or SP or digital, but more expensive professional recorders make a better tape than consumer equipment. Video which will be used on some computer disk format, such as CD-ROM or optical disk cartridge, may be copied directly as a Quicktime movie or incorporated in to either a presentation program (Microsoft Powerpoint, Adobe Persuasion, Gold Disk's Astound, among others) or an authoring program (such as Macromedia's Authorware or Director).

Conclusion

Video materials, whether commercially distributed, professionally produced, or originally developed by the instructor, represent an important instructional resource for teacher education

programs in special education. Video segments, displayed via tape during a face-to-face class session, broadcast during a live transmission to many distant sites, or available for individual student interactions via multimedia computer modules, enable prospective special educators to observe and study many important aspects of professional practice without the time and expense of travelling to and spending time in actual classrooms out during field experiences. Such segments also allow practicing special education personnel to review state-of-the-art practices that may not be currently in operation in their own programs or agencies and can serve as real-life models for the adoption of these innovations. Special education is a field in which the use of video materials is especially critical to fostering understanding and promoting best practice at the preservice or inservice levels. Instructors who are committed to providing the best possible teacher education program for special educators will make frequent and appropriate use of the wide range of commercial video materials available from publishing companies, production houses, and educational agencies. They also will explore and utilize when necessary the assistance of the professional video production personnel to them available through their own institutions, other agencies, or local businesses to plan and produce original video segments to supplement existing materials. And, they will learn to make their own video segments using inexpensive and easy-to-use comsumer camcorders and desktop computer editing systems whenevr they meed materials that are unique to a parcticular topic or philosophy or perhaps specific to a particular agency or area. Using these three strategies, any individual faculty member or academic program usint can acquire sufficient, effective, and appropriate video segements to support a teacher education program in special education, whatever their needs, their talents, or their budget.

References

Bates, A.W. (1987). Learning from television. In M. Thorpe & D. Grugeon (Eds.), Open learning for adults (pp. 163-1174). New York: Logfman

Blackhurst, A.E. & MacArthur, C.A. (1986). Computer use in special education personnel preparation programs. Teacher Education and Special Education, 9(1),27-36.

Bransford, J.D., Sherwood, R.D., Hasselbring, T.S., Kinzer, C.K., & Williams, S.M. (1990). Anchored instruction: Why we need it and how technology can help. In D. Nix & R. Spiro (Eds.), Cognition, education, and multi-media: Exploring ideas in high technology, (pp. 115-141). Hillsdale, NJ: Lawrence Erlbaum.

Brown, J.S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. Teacher Education and Special Education, 7(2), 82-87.

Cartwright, G.P. (1984). Technology competencies for special education doctoral students. Educational researcher, 18(1), 606-638.

Chen, A.Y. (1993). The use of interactive multimedia systems to improve the learning of classroom practices. Education Research and Perspectives, 20(2), 24-32.

Cognition and Technology Group at Vanderbilt University/CTG-VLTC. (1993). Integrated media: Toward a theoretical framework for utilizing their potential. Journal of Special Education Technology, 12(2), 71-85.

Cyrs, T.E., & Smith, F.A. (1990). Teleclass teaching: A resource guide (2nd ed.). Las Cruces, NM: Center for Educational Development of New Mexico State University.

Fitzgerald, G.E., Wilson, B., & Semrau, L.P. (1996). Designing effective multimedia programs to enhance teacher problem solving skills and cognitive flexibility. Proceedings of ED Media 96 World Conference on Educational Multimedia and Hypermedia (pp. 234-239). Boston, MA: Conference Press.

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Goldman, E., & Barron, L. (1990). Using hypermedia to improve the preparation of elementary teachers. Journal of Teacher Education, 41(3), 21-31.

Howes, L. & Pettengill, C. (1993, June). Designing instructional multimedia presentations: A seven-step process. T.H.E. Journal, 58-61.

Lave, J., & Wenger, E. (1991). Situated learning: Legitimate peripheral participation. Cambridge, England: Cambridge University Press.

Ludlow, B.L. (1995). Distance education applications in rural special education: Where we've been and where we're going. Rural Special Education Quarterly, 14(2), 47-52.

Overbaugh, R.C. (1994). An example of software development and authoring with HyperCard: Creating an interactive video simulation for teaching basic prinicples of classroom management. Computers in the Schools, 103/41), 313-338.

Richards, T., Chignell, M.H., & Lacy, R.M. (1990). Integrating hypermedia: Bridging the missing links. Academic Computing, 4(4), 24-26, 39-44.

Rieth, H.J. (1990). The politics of higher education and personnel preparation. In A.P. Kaiser & C.M. McWhorter (Eds), Preparing personnel to work with severe disabilities, (pp. 91-109). Baltimore: Paul H. Brookes.

Rieth, H.J., et al. (1993). Examining the cognitive challenges and pedagogical opportunities of integrated media systems: Toward a research agenda. Journal of Special Education Technology, 12(2), 118-124.

Sauer, J. (1996). Harnessing the power of digital video. Presentations, 10(10), 57-66

Todd, N. (1993). A curriculum model for integrating technology in teacher education courses. Journal of Computing in Teacher Education, 9(3) 5-11.

Wagner, N. (1996). Telecommunications and the changing nature of instructional delivery. Syllabus, 9(19), 10-12.

Willis, J.W., & Meblinger, H.D. (1996). Information technology and teacher education. In J. Sikula (Ed.), Handbook of research on teacher education, (pp. 978-1029). New York: Macmillan.

Appendix A
Resources for Commercial Video Purchases

Young Adult Institute
460 West 34th Street
New York, NY 10001
212-563-7474

Monaco & Associates
531 NE 35th
Topeka, KS 66617
800-798-1369

Paul H. Brookes
PO Box 10624
Baltimore, MD 21285-0624
800-638-3775

Research Press
PO Box 9177
Champaign, IL 61826
800-519-2707

Institute for Study of DD
Indiana University UAP
2853 East 10th Street
Bloomington, IN 47408-2601
812-855-6508

Disability Resources Catalog
Program Development Associates
5620 Business Avenue, Suite B
Cicero, NY 13039
800-543-2119

Institute on Disability
University of New Hampshire
Durham, NH 03824
603-862-0550

Public Service Project
23890 Middlebelt Road
Farmington Hills, MI 48336
810-478-9451

American Foundation for the Blind
13 West 16th Street
New York, NY 10011
212-620-2000

Infant Hearing Resources
Portland Center for Hearing & Speech
3515 SW Veterans Hospital Road
Portland, OR 97201
503-228-6479

Films for the Humanities & Sciences
PO Box 2053
Princeton, NJ 08543-2053
800-257-5126

Insight Media
2162 Broadway
New York, NY 10024-6620
212-721-6316

Nat. Ass. for Educ of Yng Children NAEYC
1509 16th Street, NW
Washington, DC 20036-1426
800-424-2460

Child Development Media
5632 Van Nuys Blvd., Suite 286
Van Nuys, CA 91401
800-405-8942

Fanlight Productions
47 Halifax Street
Boston, MA 02130
800-937-4113

Learner Managed Designs, Inc.
PO Box 747
Lawrence, KS 66044
913-842-9088

Educational Productions
7412 SW Beaverton Hillsdale Highway
Portland, OR 97225
800-950-4949

PBS Video
1320 Braddock Place
Alexandria, VA 22314-1698
703-739-5380

Therapy Skill Builders
PO Box 42050
Tucson, AZ 85733
602-323-7500

T.E.R.I, Inc.
3225 Roymar Road
Oceanside, CA 92054
619-721-1706

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Appendix C
Resources for Video Production

Catalogs of Books about Multimedia Development

Ventana Press
PO Box 13964
Research Triangle Park, NC 27709-3964
919-544-9404

Peachpit Press
2414 Sixth Street
Berkeley, CA 94710
800-283-9444

Macmillan Computer Publishing
201 W 103rd Street
Indianapolis, IN 46290
800-428-5331

Osbourne/McGraw-Hill

Berkeley, CA 00000
800-227-0900

Catalogs of Books about Graphics Design

Visual Horizons
180 Metro Park
Rochester, NY 14623-2666
800-424-1011

Catalogs of Books about Video Production

Knowledge Industry Publications
701 Westchester Avenue
White Plains, NY 10604
800-800-5474

Wadsworth Publishing

Belmont, CA 94001
000-

Association for Education Communications and Technology
1025 Vermont Avenue NW
Washington, DC 20005
202-347-7834

Michael Wiese Productions
11288 Ventura Boulevard, Suite 821
Studio City, CA 91604
800-379-8808

Magazines and Journals

Presentations: Technologies and Techniques for Effective Communication, Lakewood
Publications, 50 South Ninth Street, Minneapolis, MN 55402-9973

Videography: The Magazine of Professional Video Production, Technology, and Applications,
Creative Data Center, 650 S. Clark Street, Chicago, Il 60605-9705

A V Video: Production and Presentation Technology, Montage Publications, 701 Westchester
Avenue, White Plains, NY 10604

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